How Much Can the Poor Save?

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Abstract: Using the Surveys of Consumer Finances from 1992-2004, we explore the correlates of financial asset holdings of low-income households in the United States. Across the years, higher proportions of households held financial assets but the level of assets held (in constant dollars) declined over time. Income, education, race/ethnicity, age, working status, inheritances, home ownership, vehicle ownership, interest rate expectations, expecting a major expense, having a reason to save, planning horizon, risk tolerance, spending less than one's income, having a strategy for savings, access to credit, and bill payment behaviors were associated with whether households had any financial assets and, if so, the level of assets. We discuss implications for policy makers and community educators.

Introduction

The importance of saving as a driving force behind family stability, community development and economic progress has been widely recognized by policy makers, researchers, community educators, financial institutions, community development professionals, and civic leaders. For example, initiatives such as Individual Development Accounts (IDAs; Sherraden, 1991), America Saves (Consumer Federation of America, 2001) and the Savings for Education, Entrepreneurship, and Downpayment (SEED; CFED, 2006) target low-to-moderate income (LMI) households to help them save and build wealth. Beyond the obvious economic benefits of having an emergency cushion and savings to fall back on, there are other civic and community benefits when households build wealth: community involvement increases, women's economic status improves, and the well-being of children improves (Page-Adams & Sherraden, 1996).

It is clear the poor *can* save (Hogarth & Anguelov, 2001; Schreiner, Clancy, & Sherraden, 2002). The questions, rather, are *do* the poor save, and if so, *how much* do they save? Knowing the answer to these questions can help inform state and local policy makers as they consider asset limits for means-tested and asset-tested programs; it can help community development organizations understand reasonable limitations as they work with low-income families who want to set up small businesses; it can help government agencies and non-profits target financial education programs; and it can help housing agencies as they plan for grants and subsidies for first-time low-income home-buyer programs.

Using the Survey of Consumer Finances from 1992-2004, this study employs a multidisciplinary approach to savings behaviors and contributes to the growing body of literature

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on wealth-building and financial access of LMI households. The primary objective of this paper is to provide an estimate of the level of savings, measured in terms of financial assets, held by poor and lower-income households measured across five points in time over the last twelve years. By looking at the changes in asset levels over time, this study will explore how the proportions of households with savings and the level of savings have changed among LMI households and what variables have affected these changes. It also examines methodological issues and explores different conceptual and empirical approaches to the analysis. Specifically, this paper addresses the following questions:

1) How much do the poor save? What financial assets do they have?
2) What is the best way to model the level of savings for poor and low-income households?
3) How has the proportion of households with savings and the level of savings changed over time among LMI households?
4) What factors are associated with the level of financial assets of poor and low-income households?
5) How does what we learn translate into guidance for policymakers and community groups?

Low Income Households and Level of Savings

The saving habits of households has been a topic of economic studies for a long time. Seventy years ago, Keynes's 1936 study was one of the first to posit a variety of motives for savings (precautionary, life-cycle/retirement, intertemporal substitution, improvement, independence, enterprise, bequest, avarice, downpayment). Katona's persistence of savings work (1949), Modigliani and Brumberg's life cycle hypothesis (1954), Friedman's permanent income hypothesis (1957), and Shefrin and Thaler's (1988) work on behavioral life cycle of savings extended and expanded the field. A summary of the theoretical and empirical work in this area is presented in Browning and Lusardi (1996).

Household savings is also a key focus of many community development programs. For example, in 2003, CFED initiated the Savings for Education, Entrepreneurship, and Downpayment (SEED) program to pilot and test the efficacy and impact of various savings initiatives as tools to promote economic independence among low-to-moderate income households. Begun in the late 1990s with a pilot in Cleveland, America Saves is a nationwide campaign to help individuals and families save and build wealth. Through education, information, and coaching, individuals become motivated to save; partnerships with financial institutions provide access to financial accounts and products that help consumers implement their savings plans. Other initiatives include efforts to help Earned Income Tax Credit recipients save portions of their refunds (Beverly, Schneider, & Tufano, 2005).

Research on savings is quite varied, ranging from studies on savings *per se*, studies of asset accumulation, studies of saving for specific purposes (emergency funds, retirement, etc.), and studies of savings adequacy. In one journal alone (*Financial Counseling and Planning*), financial assets in retirement has been the topic of 25 articles between 1996 and 2005. Other bodies of research have explored other factors that are likely to be related to savings. For example, to the extent that households must spend income on debt service rather than on savings, studies of credit behaviors may inform the savings questions we are exploring (Dunn & Ekici, 2006).

Some researchers have explored a savings hierarchy relative to savings motives (see, for example, Xiao and Norning, 1994). Most personal finance texts and financial planners have an implicit hierarchy of having an emergency fund, saving for short-term and medium-term goals (cars, homes, vacations), and saving for longer term goals (children's college education, retirement), although little other research has explored whether families actually follow such a hierarchy. Given this broad range of topics, we have opted to constrain our review to studies more directly related to savings *per se*.

Beverly (1997) and Beverly and Sherraden (1999) modeled savings as a function of demographic, sociological, psychological and institutional variables. Their work included evaluation of ongoing initiatives (Moore, Beverly, Sherraden, Sherraden, Johnson, and Schreiner, 2000) as well as theory development with respect to asset accumulation strategies for low-income households (Beverly, Moore, and Schreiner, 2001). This multidisciplinary approach is appealing in its attempt to grapple with the multifaceted nature of human behaviors. We adopt this model for our study and focus our review of previous research on those studies that shed light on the variables that are associated with these conceptual categories.

Demographic and Socioeconomic Characteristics

Research by Bucks, Kennickell, and Moore (2006) provides evidence that, despite the absolute resource constraints of having low incomes, 75% of lower-income households (those in the lowest income quintile in 2004) had some financial assets. Caroll, Dynan and Krane (1999) found that increases in the risk of unemployment had an impact on the level of savings of moderate income households but unemployment risk did not affect the levels of savings of low-income households. Asset accumulation, as measured by net worth, has also been found to be associated with employment (job tenure and self-employment status), as well as non-socioeconomic variables, such as financial attitudes, attitudes toward credit, and risk preferences (Chen and DeVaney, 2001b). Yieh and Chen (2000) found that age, gender, number of children, number of working years, education, occupation, race, permanent income, current income, net worth, credit constraints and social security benefits affected the level of consumers' precautionary savings.

Working with the 1999 Retirement Investment Survey, Joo and Grable (2000) found that respondents with higher education, higher income, fewer financial dependents, favorable financial attitudes, and those exposed to workplace financial education were most likely to have a retirement investment program. Similar variables may also influence the amounts held in those accounts.

In descriptive work using the 1995 Survey of Consumer Finances, Hogarth and O'Donnell (1999) reported that relative to the total population, lower proportions of lower income households held savings or investment instruments. In another descriptive study of formal and informal savings among lower income households, three-fourths (78%) of banked households had savings, and 94 percent of those held their savings in formal accounts (Dunham, 2001).

Another body of saving research has focused on wealth, an outcome of savings (Dynan and Maki, 2001; Purcell, 2001; Wolff, 2000). Implicit in much of this research is that wealth generally does not exist without savings; in order to have the stock of wealth you need to have

the flow of savings. However, Dynan and Maki also discuss how it is possible, in rising-value and appreciating financial markets, for wealth to increase without active saving.

Engin, Gale, and Uccello (2000) examined the adequacy of household saving for retirement. Using wealth-earnings ratios as their metric, the results indicated that households with low wealth-earnings ratios were saving optimally for retirement, primarily due to high replacement rates from social security benefits.

Carney and Gale (2000) used Survey of Income and Program Participation data to study asset accumulation among low-income households. They found that income, age, education and marital status were related to net worth and level of financial assets. Furthermore, controlling for other factors, black households and households on public assistance had lower wealth than others. Carney and Gale also found that low-income households had different sets of determinants for total net worth than for level of financial assets, which argues for evaluating these two measures separately.

Resource Access and Demands for Resources

A particular sub-category of socioeconomic variables relate to access to resources that serve as substitutes for and compliments to income *per se* or specific demands for some of the household's resources. For example, saving has been shown to be related to expectations about pension benefits and future inheritances (Cheng, Hanna & Montalto, 1998) and expected gifts and inheritance (Haurin, Wachter & Hendershott, 1995).

Households' access to information and information search have figured in other asset accumulation studies as well. Sung and Hanna (1995) found that households who used a financial professional when making financial decisions had higher net worth.

Low levels of savings make poor and low-income households particularly vulnerable to problems arising from lack of access to emergency funds. A substantial body of research in the field of family financial management measures the presence of savings by a household's ability to meet short-term emergencies (Johnson & Widdows, 1985; Widdows & Johnson, 1986; Huston & Chang, 1997; Chang, Hanna, & Fan, 1997; Hatcher, 2000). The relative importance of community and kin networks as sources of emergency funds (informal loans among family members) was explored by Rhine and Toussaint (1999) and Chiteji and Hamilton (2000). These studies also discussed the importance of emergency reserves – that is, small amounts of savings – for lower income households.

Psychological Characteristics

Expectations, perceptions, and motivations are important psychological constructs to include when attempting to model complex human behaviors. For example, Hanna, Fan and Chang (1995) found that expectations about future increases in income influenced savings behaviors.

Hogarth and Anguelov (2001) explored the asset holdings of poor and low-income households -- specifically their available resources for meeting short-term emergencies, and the

determinants of being a "saver." They found that expectations and motivations, in addition to other socioeconomic characteristics, were associated with poor and low-income households' ability to save. However, their measure of "saving" was perceptual in nature (households who "usually" save or who "currently" spend less than they make) rather than the actual value of financial assets held.

Studies on bequests (Gale and Scholz, 1994) and retirement are numerous (see Hurd, 1990 for a review of much of the work through the 1980's). More recent retirement research in the economic arena is devoted to the effects of incentives on savings and policies that facilitate or impede retirement savings (Engen et al, 1996; Purcell, 2001) and behavioral explanations as to why people don't save as much as we think they should for retirement (Thaler, 1994). One issue related to savings through 401k plans is the issue of "the path of least resistance." Choi, Laibson, Madrian and Metrick (2001) looked at the 401k plans of several large corporations and found that employees made savings decisions based on which path was easier. They advocated changing the rules for automatic enrollment to allow more workers to participate in 401k-type plans. However, due to pressing present demands on household income, retirement may be less of a motivation to save for most low-income families (see Engen, Gale and Ucello, 2000).

Hubbard et al. (1994) discussed the precautionary motives for savings by looking at the uncertainty of earnings as well as longevity. Dunn (1998) added household debt as a determinant of precautionary savings; she posited that consumers postpone durable goods purchases (and thus the debt associated with these purchases) as a response to uncertainty of earnings. In the family financial management field, savings for and level of emergency funds has been found to be related to the precautionary motive (see work by Huston and Chang, 1997).

Chen and DeVaney (2001a) also studied motivations for savings. They found that households with specific savings motives were more likely to have adequate emergency funds compared with households who said that they did not have such motives or could not save. Asset accumulation, as measured by net worth, has also been found to be associated with employment (job tenure and self-employment status), financial attitudes, attitudes toward credit, and risk preferences (Chen and DeVaney, 2001b).

Institutional Characteristics

Gruber and Yelowitz (1997), and Zhan, Sherraden and Schreiner (2002) showed an inverse relationship between access to social programs and wealth holdings of lower income households. Marlowe, Godwin and Maddux (1995) found that welfare recipients underestimated the asset limits of their welfare program; this lack of understanding (or lack of information) may have led them to holding lower levels of savings.

Sherraden (1999) and Brobeck (1999) point out some of the obstacles to savings for low-income households: poor families don't have access to mainstream financial institutions nor to access to appropriate financial instruments; they don't have the same institutional incentives and subsidies for asset accumulation (e.g., mortgage interest deductions, 401k matched savings); they lack information needed to make sound investment decisions; and they need a social support network to encourage and facilitate the savings habit.

There is some evidence that despite the absolute resource constraints of being low-income and the institutional obstacles they face, poor households do, in fact, have some assets. The goal of this study is to bring additional empirical evidence to bear on the levels of savings poor families have and factors that are associated with these levels among poor households in order to target programs and policies that encourage poor households to save.

Conceptual Model for Determining the Level of Financial Assets of Poor Households

The model posited by Beverly (1997) and Beverly and Sherraden (1999) is the foundation for our model. In this model, level of savings (we will use the terms savings and financial assets interchangeably) is a function of demographic, sociological, psychological, and institutional variables. In addition to the traditional socioeconomic factors, we incorporate a set of resources that are available to households as well as measures of demands for those resources. In the psychological area, we focus on specific expectations, motivations, and perceptions. We also incorporate proxies for the institutional environment households face:

Level of financial assets = f (socioeconomic & demographic characteristics; access to resources and demands for resources; expectations, motivations, & perceptions; institutional environment)

Modeling the level of financial assets presents an interesting conceptual issue:

(a) Do households simultaneously decide whether to have savings and if so how much?

or

(b) Do households first decide to have savings (a yes/no decision) and then, if yes, decide how much to save?

If households operate under the conditions in (a), then a single-stage model with one set of determinants is all that is needed. On the other hand, if households operate under the conditions in (b), then we need a two-stage model to estimate household savings. Furthermore, the determinants for the first step -- yes/no (participation) decision -- may not necessarily be the same as those for the second step -- the "how much" (consumption) decision. Part of our study will be to determine which model specification provides a better fit with the data provided by households. Our criterion for "goodness of fit" is a test between the log likelihood outputs (Greene, 2000).

Empirically, for the single step model, we used Tobit rather than OLS to account for the distributional characteristics of the sample (a sizable proportion of zeroes for level of saving, 15% of the sample) and then a distribution ranging from $1 to $919,000.

For the two-stage decision making model, households first decide whether to have savings (the participation decision) and second decide how much savings to have (the consumption decision. We use a model suggested by Cragg that involves a probit model for the participation decision (a 0-1 dependent variable measuring whether or not the household had any financial assets) and maximum likelihood estimate (truncated regression) for the consumption

decision (dollar value of assets). The Cragg model allows for sign swapping and coefficient flexibility between the two equations.

Data and Methodology

We used data from the 1992, 1995, 1998, 2001, and 2004 Federal Reserve Board's Survey of Consumer Finances (SCF) for this study.[2] The SCF is a triennial survey of U.S. families' financial portfolios sponsored by the Federal Reserve with the cooperation of the Statistics of Income Division of the Internal Revenue Service. It is designed to provide detailed information on U.S. households' balance sheets, their use of financial services, demographics, and labor participation. The data were collected by the National Opinion Research Center at the University of Chicago. Around 4,500 households are usually interviewed for the study.

The SCF uses a dual-frame sample design. About two-thirds of the respondents are selected from a standard multi-stage area-probability design; this sample provides coverage of characteristics, such as home ownership, that are broadly distributed in the population. However, many assets are not widely distributed among households. The remaining one-third of respondents are a purposive over-sampling of wealthy households selected from statistical records provided by Statistics of Income Division of the Internal Revenue Service (SOI). The dual sampling frame employed in the survey requires that data be weighted in descriptive analyses (Aizcorbe, Kennickell, & Moore, 2003).

The SCF also uses multiple imputation techniques to deal with missing data. This procedure creates five data sets (called implicate data sets) that require special handling in any multivariate analyses (Kennickell, Starr-McCluer & Sunden, 1997). In this study, we used all five implicates for descriptive analyses; the second implicate was randomly selected for the multivariate analysis. Unweighted regressions are estimated (see Kennickell, 2006 for a discussion on weighted versus unweighted regressions).

Sample Selection

Because we were interested in studying the poor and low income, we limited the sample to those households with income less than or equal to 3 times the national poverty threshold.[3] The U.S. Census Bureau's poverty threshold incorporates family size, number of related children under 18 years, and whether the householder is over 65, along with income as criteria (note that the poverty *threshold* will generate slightly different statistics than the poverty *guidelines* used to administer most means-tested programs). After combining the data sets we arrived at a sample of 8,174 households who were at or below 3 times the poverty threshold (see Table 1).

[2] We considered including the 1989 SCF as well; however many variables of interest were not included in the 1989 Survey. We report some data from the 1989 SCF in selected tables, but we do not include these data in our multivariate analysis.

[3] We provide information on households over 3 times the poverty category in descriptive tables for comparison, but do not use these observations in the multivariate modeling.

Outliers

In the SCF, income is reported according to the household's previous year's tax records. For example the tax records from 2003 are used in the 2004 survey. We inflate this to 2004 dollars dollars for comparison with assets. Assets are also inflated to 2004 dollars. In each survey there were respondents who recorded negative incomes. The exact level of negative income is not always known; rather, these households are given a code to indicate their income was negative. By our definition these income earners would be in the "100% of the poverty threshold or less" category. Many of these negative income earners, however, may not be considered poor as they had substantial financial assets (for example the mean level of financial assets for this negative income group in 2004 was about $190,000). This led us to assume that most of these respondents were not poor, but rather had negative income due to a business or other capital loss of some kind. We conducted a similar analysis for those reporting zero income but did not find high levels of asset holdings within this group. As a result, we eliminated the negative income reporters from our study but retained those reporting zero income.

In addition, some low-income households hold high levels of financial assets; we eliminated observations with more than $1 million in financial assets from our study.

Table 1. Income Distributions (in constant 2004 dollars)

	Mean	Median	Minimum	Maximum
All households (1992-2004)	63,234	39,974	0	207,981,330
Income 100% of poverty or less	8,824	8,105	0	38,318
101-150% of poverty	17,734	15,403	8,916	53,399
151-200% of poverty	25,561	22,965	13,374	75,650
201-300% of poverty	35,494	32,422	18,484	97,265
Non-poor*	106,178	71,597	0	207,981,330

* Non-poor includes households over 300% of the poverty thresholds, households with financial assets over $1 million; households with negative income are excluded

Dependent Variable

The main objective of this study was to explore levels of financial assets among poor and low-income households. The dependent variable was the dollar amount (in 2004 dollars) of financial assets held by these households. Our definition of financial assets includes money in checking, savings, money markets, call accounts, CDs, savings bonds, stocks, bonds, mutual funds, cash value of life insurance, other managed assets, other financial assets, IRAs, 401k/403b plans, and other thrift-type retirement plans (Table 2). Since this is a study of financial assets, not net worth, the dependent variable measure does not include values of real property or other non-financial assets.

For the households in the study sample, there is an increase in the median value of financial assets from 1989 to 2001, but a decrease from 2001 to 2004. And in the intervening years, the levels rise and fall between surveys, confirming the need to study all years, not just the end-points. The distribution of total financial assets in our study sample is highly skewed, ranging from $0 to just under $1 million (with a mean of $24,776 and a median of $2,462). To compensate for this distribution, we use the natural log of financial assets when estimating regressions.

Table 2. Financial Assets by Income Group

	Households at or below 300% of poverty					Non-poor	All U.S. house-holds
	Study sample	100% or less of threshold	101-150% of threshold	151-200% of threshold	201-300% of threshold		
Percent holding any financial assets							
1989*	77.5	67.9	67.4	84.7	90.2	99.1	87.1
1992	82.8	61.0	83.0	93.4	96.0	99.1	92.1
1995	84.0	65.2	86.2	92.2	96.6	98.9	90.6
1998	87.0	70.8	86.6	95.3	96.9	99.4	92.9
2001	85.8	66.7	86.6	94.0	96.0	99.5	93.1
2004	86.6	72.3	85.4	92.0	95.6	99.3	93.2
Median value of total financial assets**							
1989*	4,105	1,466	2,785	3,372	11,728	47,792	14,660
1992	4,217	1,068	3,690	4,481	10,807	48,103	14,800
1995	5,663	1,477	2,215	6,414	13,542	46,782	17,296
1998	5,333	1,275	2,666	5,124	15,651	70,137	24,982
2001	5,518	1,478	2,956	7,138	12,098	77,731	29,559
2004	3,100	1,000	1,500	3,480	10,120	71,500	23,520

* 1989 data included for comparison purposes only; these data were not used in the multivariate analysis
** Total Financial assets = **Cash & cash equivalents** (checking, savings, money market accounts, call accounts) + **Time deposits** (CDs, savings bonds) + **Investments** (stocks, bonds, mutual funds) + **Cash-value insurance & other financial assets** (cash value of whole life insurance, annuities, trusts, other managed assets, other financial assets) + **401k/IRA & retirement accounts** (IRAs and thrift-type retirement plans).

Independent Variables

Measures of the socioeconomic and demographic characteristics, access to resources and demands for those resources, psychological characteristics (expectations, motivations, and perceptions), and the institutional environment in which they operate are outlined in Table 3 and described below.

Table 3. Descriptive Characteristics of Sample
(observations are weighted for analysis; in percents unless otherwise noted)

Variable	Measurement	Full Sample	Have Savings	No Savings
Number of observations (unweighted)		8,174	6,930	1,244
Year dummy variables				
1992		20.2	19.7	23.6
1995		20.5	20.2	22.3
1998		20.1	20.5	17.6
2001		19.3	19.4	18.5
2004		19.9	20.2	18.0
Socioeconomic & demographic variables				
Income				
Mean Median	In constant 2004 dollars (scaled in thousands for regressions)	$22,515 $20,538	$24,083 $22,338	$13,481 $10,942
100% of poverty or less	= 1 if at 100% of poverty threshold or less, 0 otherwise	28.8	22.7	64.2
101-150% of poverty	= 1 if at 101 to 150% of poverty threshold, 0 otherwise	19.4	19.5	19.0
151-200% of poverty	= 1 if at 151 to 200% of poverty threshold, 0 otherwise	18.5	20.3	8.3
201-300% of poverty (base)	= 1 if at 201 to 300% of poverty threshold, 0 otherwise	33.2	37.5	8.5

Education				
Mean years *Median years*	*Provided for descriptive purposes only*	11.9 12	12.2 12	10.1 11
Less than high school	= 1 if have not completed high school, 0 otherwise	27.8	23.4	53.4
High school graduates (base)	= 1 if have only a high school diploma or GED, 0 otherwise	36.5	37.2	32.4
Some college	= 1 if have some college, 0 otherwise	18.3	19.7	10.6
College degree	= 1 if have bachelor's or graduate degree, 0 otherwise	17.3	19.7	3.6
Race/ethnicity				
White or other race (base)	= 1 if white, Asian or other race, 0 otherwise	71.0	76.0	41.7
Black	= 1 if African American, 0 otherwise	17.6	15.0	33.0
Hispanic	= 1 if Hispanic, 0 otherwise	11.4	8.9	25.3
Marital status/gender				
Married (base)	= 1 if married couple, 0 otherwise	46.3	48.0	36.2
Single male	= 1 if single male, 0 otherwise	15.2	15.1	16.0
Single female	= 1 if single female, 0 otherwise	38.5	36.9	47.8
Age				
Mean years *Median years*	*Provided for descriptive purposes only*	48.8 45	49.6 46	44.1 40
18-34 (base)	= 1 if 18<= household age <=34, 0 otherwise	28.6	27.2	36.8
35-49	= 1 if 35<= household age <=49, 0 otherwise	28.0	27.8	29.6
50-64	= 1 if 50<= household age <=64, 0 otherwise	17.2	17.2	17.5
65 & over	= 1 if household age =>65, 0 otherwise	26.0	27.7	16.1
Working status				
Employed	= 1 if head is working, 0 otherwise	58.7	60.7	47.4
Retired	= 1 if head is retired, 0 otherwise	21.9	23.5	12.9
Unemployed, looking for a job	= 1 if head is unemployed but looking for a job, 0 otherwise	5.4	4.1	13.3
Unemployed, not looking (base)	= 1 if head is unemployed and not looking for a job, 0 otherwise	14.2	11.9	27.3
Resource access and demands for resources				
Received gift or inheritance	= 1 if received an inheritance or other large financial gift, 0 otherwise	15.7	17.6	4.3
Expect to receive gift or inheritance	= 1 if expecting to receive an inheritance or transfer of assets in the future, 0 otherwise	9.7	10.8	3.1
Expect to leave gifts or inheritance	= 1 if expecting to leave or possibly leave a sizable estate to others, 0 otherwise	21.5	23.0	12.7
Home ownership	= 1 if own home, 0 otherwise	52.3	57.1	24.1
Vehicles				
No car (base)	= 1 if do not have car, 0 otherwise	23.1	18.3	51.4
Old car (6 years old or more)	= 1 if have a car 6 years old or more, 0 otherwise	54.2	56.3	42.6
New car (5 years old or less)	= 1 if have a car 5 years old or less, 0 otherwise	22.6	25.4	6.0
Psychological expectations, motivations & perceptions				
Expect economy to be better over next 5 years	= 1 if expect economy to be better over next 5 years, 0 otherwise	32.4	32.1	34.3
Expect higher interest rates over next 5 years	= 1 if expect interest rates to be higher over next 5 years. 0 otherwise	66.9	66.3	70.3
Income rose more than prices over last 5 years	= 1 if income outpaced inflation over past 5 years, 0 otherwise	12.1	12.3	10.8
Expect a major expense in next 5-10 years	= 1 if expect to have major expense in nest 5-10 years (car, major appliance, college, etc.), 0 otherwise	50.2	52.2	39.0
Have a reason to save	= 1 if have reason to save (college, retirement, emergencies), 0 otherwise	89.9	91.7	79.4

Planning horizon				
Short term (<= 1 year)	= 1 if household plans for a few months or next year, 0 otherwise	44.4	42.4	55.9
Medium term (2 -10 years)	= 1 if said household plans ahead a few years to 10 years, 0 otherwise	46.0	47.6	37.0
Long term (10+ years) (base)	= 1 if said household plans ahead more than 10 years, 0 otherwise	9.6	10.0	7.0
Risk tolerance				
No risk (base)	= 1 if not willing to take any financial risks, 0 otherwise	59.7	56.7	76.7
Moderate risk	= 1 if taking average or above average financial risks expecting to earn average or above average returns, 0 otherwise	37.1	40.1	19.5
Substantial risk	= 1 if taking substantial financial risks expecting to earn substantial returns, 0 otherwise	3.3	3.2	3.8
Current saver	= 1 if spending < income, 0 otherwise	29.0	31.4	15.5
Usual saver	= 1 if save residual, income of one family member, extra income, or save regularly every month, 0 otherwise	66.0	70.4	40.5
Institutional environment				
Credit access and status				
Applied for credit and approved	= 1 if applied for credit or loan in the last five years and approved, 0 otherwise	65.5	66.2	61.4
Applied for credit and rejected	= 1 if applied for credit or loan in the last five years and rejected, 0 otherwise	13.0	13.9	8.3
Did not apply for credit (base)	= 1 if did not apply for credit in last 5 years because thought would be turned down, 0 otherwise	21.5	19.9	30.3
Have late payments	=1 if any mortgage or loan payments were paid late, 0 otherwise	18.5	18.4	19.1
Credit card balance				
Mean in dollars Median	Includes those with $0 or no card) Includes those with $0 or no card)	$1,310 0	$1,482 0	$322 0

Socioeconomic and Demographic Variables

As in previous research, we expect there to be a positive relationship between higher levels of income and education with higher levels of assets. With respect to demographic characteristics, previous research suggests that being minority, being unmarried, being younger, and being out of the labor force will have a negative impact on the on the level of financial assets.

As described above, we included households at or below three times the poverty threshold in this study. We include measures of income in two ways: first, as four categorical variables based on the ratio of household income relative to the poverty threshold; and second, scaled as income in thousands. The poverty categories allow us to capture the combined affects of income and household size as a relative measure of economic need. But because absolute levels of income may also be important, we also included a direct measure of income. Unlike national population studies that have to control for heteroscedasticity, the variances in our measure are much more even due to the constrained sample. Scaling income by thousands gives us a number that performs better with the large number binary variables in our multivariate analysis.

The level of education of the household head was included as a set of four binary variables with high school graduates as the reference category. Race/ethnicity of the respondent was a set of binary variables, having three categories. In the SCF, all married couple households are considered as headed by the male. A gender distinction can be made between single-female and single-male headed households. Our measure of marital status and gender was a set of three binary variables with married as the reference category. Age of the household head was included as a set of four binary variables and work status was included as a set of four binary variables, based on job description for the head.

Access to Resources and Demand on Resources

In addition to financial resources, households may have access to other resources that may serve as substitutes, thus freeing up funds that become available for savings. Households who have received gifts and inheritances are more likely to have higher levels of financial assets. However, households who expect to receive an inheritance may have lower levels of savings since they may expect the future inheritance to "fill in the gap." On the other hand, households who expect to leave a bequest are expected to have higher levels of financial assets.

The assets that households possess may contribute to resources or act as a drain, or demand, on them. For example, having a home may be a resource with equity that can be tapped in case of emergency and having a car may enable family members to get to work or seek out higher-paying jobs. But for low income households, both of these might also be a resource drain, requiring cash for repairs, maintenance, and upkeep.

Family members also may be both resources (added earners) and resource-consumers for households. Because our poverty category variable is based in part on family size, it functions in part as a need-based measure. We opted not to double-count the effect of family size on savings levels.

Psychological Characteristics -- Expectations, Motivations and Perceptions

Previous research shows that expectations about the future (income, the economy, and expenses) influence savings behaviors – and resulting levels of assets. Furthermore, households who are motivated to save – for whatever reason – as well as those who are more future-minded are expected to have higher levels of financial assets. Perceptions of risk and perceived ability to save may also influence absolute levels of savings. Some of these variables – expectations of future economic growth, income growth, upcoming major expenses and other reasons to save – may affect whether or not a household has assets but may not be significant determinants of the level of financial assets.

Future-mindedness was measured as a set of three binary variables reflecting those with short (one year or less), medium (two to 10 years) and long-term (over 10 years) planning horizons. We also included a set of binary variables to measure risk tolerance/preference. Households who are more risk averse should realize they need to save more because of the lower rate of return on low-risk investments. On the other hand, risk-takers may save less because they expect to make a higher rate of return.

Households' perceptions of their ability to save were included as binary variables. The SCF includes two perceptual measures of being a saver. The first is whether, the households' spending exceeded, equaled, or was less than income. Those whose spending was less than income were defined as "current savers" in our study. The second measure was a question about the households' usual savings strategies; that is, whether they usually put aside money regularly, save out of "other income," save the income from one family member while spending the other's income, save what is "left over at the end of the month," or don't save at all. Those who responded that they saved in any of the first four ways listed were defined as "usual savers."

Institutional Environment

As posed by Brobeck (1999) and Sherraden (1999), households with access to financial institutions, such as banks and credit unions, and appropriate financial instruments may be more likely to be savers and thus have higher levels of savings. Because some states have basic banking laws, one proxy for the institutional environment is region. Region also serves somewhat as a proxy for states' policies related to asset accumulation. Unfortunately, region is not included in the 2001 and 2004 public data set, so we sought out other proxies for features of the institutional environment.

Access to credit is one potential proxy for these institutional characteristics. Not having access to the mainstream financial institutions due to poor credit history is evidence of prior experience with financial institutions and markets, but it also can be evidence of a lack of human capital to deal effectively with these institutions. Households may be willing to deal with financial institutions, but the institutions may not want these consumers as customers. We measure credit history as a set of three binary variables reflecting whether the household applied for and received credit, applied for and did not receive the credit applied for, or did not apply for credit (with the thought in mind that one reason for not applying is because they thought they would be turned down).

We also include a measure of whether the household pays loans and mortgages on time as a proxy for institutional access and how well the household relates to financial institutions. Finally we include the household's credit card balance, if any. Whether the household has a balance and the size of that balance is a proxy for how well the household relates to credit markets.

Analysis

We begin with descriptive statistics, looking at proportions of households in different income groups who hold various types of financial assets and the level of holdings. Next, we explore multivariate models of the determinants of having financial assets and levels of financial assets. Finally we use one model to estimate the marginal effects on the probability of having financial assets and level of assets for different household characteristics.

Results

How much do the poor save?

As seen in other studies, the poor can, and do, save. Using our subjective measures, among those at or below the poverty threshold, one out of five (20.4%) indicated that they were current savers and one out of two (54%) indicated they usually save (Table 4). The proportion of savers increased across the poverty categories, with nearly two-fifths of those between 201% and 300% of poverty classified as current savers and more than three-fourths classified as usual savers.

Table 4. Type of Saver by Income Group and Year (in percents)

	Current saver (spending< income)	Usual saver (have a savings strategy)	Current or usual saver	Proportion with some financial assets
Total Sample	29.0	65.9	68.4	85.2
Income 100% of poverty or less	20.4	54.0	57.5	67.0
101-150% of poverty	24.8	62.0	65.0	85.5
151-200% of poverty	30.2	68.3	70.6	93.3
201-300% of poverty	38.2	77.2	78.8	96.2
1992				
Income 100% of poverty or less	22.3	48.7	53.7	61.0
101-150% of poverty	26.7	58.9	61.3	82.9
151-200% of poverty	65.9	83.8	69	93.3
201-300% of poverty	44.7	77.3	78.3	96.0
1995				
Income 100% of poverty or less	20.0	58.0	61.1	65.1
101-150% of poverty	22.3	59.8	62.1	86.1
151-200% of poverty	27.9	68.6	70.0	92.2
201-300% of poverty	40.6	79.3	80.7	96.6
1998				
Income 100% of poverty or less	21.9	57.7	60.7	70.8
101-150% of poverty	25.2	65.6	68.4	86.6
151-200% of poverty	27.5	69.9	71.3	95.2
201-300% of poverty	35.9	77.3	78.6	96.9
2001				
Income 100% of poverty or less	18.4	52.6	55.7	66.6
101-150% of poverty	24.9	67.0	71.2	86.6
151-200% of poverty	33.9	70.2	73.0	94.0
201-300% of poverty	39.3	76.4	78.7	95.9
2004				
Income 100% of poverty or less	19.4	51.9	55.3	72.2
101-150% of poverty	24.7	59.1	61.8	85.4
151-200% of poverty	29.7	67.4	70.1	92.0
201-300% of poverty	31.3	75.6	77.5	95.6

However, when we turn to a more objective measure of savings – whether a household has a non-zero value for financial assets – we find that just over two-thirds (67%) of those at or below poverty have some financial assets. For those in the upper category of our sample, fully

96% have some financial assets. Part of the difference between our subjective and objective measures may be due to the the concept of "stock" of savings (captured in the objective measure) and the "flow" of current funds into savings (captured by the subjective measures). For example, households may have some savings but may not be adding to those funds.

Over time, the proportion of current savers has remained consistently within the 18 to 20% range for those at or below poverty, while the proportions of usual savers within this group reached a peak in 1995 and 1998 and has diminshed somewhat since then. The proportion with some financial assets has risen and fallen over the years, rising form 1992 to 1998, then dropping in 2001, and rising again in 2004. The numbers for those just above the poverty threshold (101-150% of poverty) are similarly uneven. For example, the proportions of current and usual savers in this group move up and down across the years, while the proportion of those with some financial assets reamains fairly stable at around 83 to 87%.

Even though the poor may save, we would not expect them to have large pools of assets. In our sample, 86% of poor and low income households in 2004 had some financial assets, and the median value was $3,100 (see Table 2). While this is not a lot, it is enough to serve as a cushion against some emergencies. However, most of this is held by those at more than 1½ times the poverty threshold – those below this level have very few assets.

Still focusing on those in 2004, more than one-fourth of households at or below poverty had no financial assets. Among those households with assets, half have less than $1,000. While the holdings for those between 101% and 150% of poverty are higher – both in terms of the proportion who have assets and the dollar value of those assets – the levels of asset-holdings are still relatively low (an ownership rate of 85% and a median value of $1,500).. Even for those at 1½ to 2 times the poverty threshold, half have less than $3,500. It is only when households are over 2 times the poverty thresholds that they appear to be able to really save – but even then, half have less than $10,200.

What financial assets do the poor have?

By far, the most commonly-held financial assets were cash accounts (savings, checking, etc.) – in 2004, two-thirds of those at or below poverty had these assets, and ownership rose across the categories to 92% of those between 2 and 3 times the poverty threshold (Table 5).[4] The level of assets in these accounts, however, is low – the median balance for the poorest households was $500, compared with $2,500 for those at 2 to 3 times the poverty threshold.

Among the poorest households, those at or below 150% of poverty, the next most commonly held asset was cash-value life insurance and other financial assets (see the footnote to Table 5 for the definition of assets in this category). One out of 6 (18%) or one out of 5 (22%) of these poorst households held these assets, with median values in the $2,500 to $3,000 range.

Once households reach 151-200% of poverty, it seems they begin to have enough resources to set aside funds for retirement, although even at this level, only one-fourth of households have retirement funds and the level is rather low (a median amount of $7,500).

[4] Information on the asset-holding patterns of households from 1989 to 2001 is in the appendix to this paper. The patterns are substantially similar to those in 2004.

For those at 2 to 3 times the poverty threshold, the second-most common asset was not life insurance but rather retirement accounts; 43% held these accounts with a median value of $13,000. While it is heartening to see households planning for their future with retirement and insurance products, neither of these is particularly liquid.

Fewer than 10% of the poorest households had time deposits, investments, or retirement accounts. While this is not surprising, due to the absolute income constraints they face, it is disturbing. Coupled with the fact that 4 out of 5 of these households indicated that they spent more than they made, the opportunities for creating asset-building programs with this target group seem very slim.

In fact, few households at 1½ to 2 times the poverty threshold have time deposits or investments. One out of 6 (18%) hold time deposits and about one out of ten (9.8%) hold investments. And, as expected, the median value of these holdings is low ($2,100 for time deposits and $5,000 for investments).

Table 5 Proportion Holding and Level of Financial Assets by Income Group and Asset Category, 2004

	Households at or below 300% of poverty					**Non-poor****	**All U.S. house-holds**
	Study sample	**100% or less of threshold**	**101-150% of threshold**	**151-200% of threshold**	**201-300% of threshold**		
Total financial assets (savings)							
% holding	86.6	72.3	85.4	92.0	95.6	99.3	93.2
Mean*	31,661	15,056	22,024	24,778	49,841	329,518	199,825
Median*	3,100	1,000	1,500	3,480	10,120	71,500	23,520
Cash & cash equivalents							
% holding	81.6	66.2	80.8	85.1	92.5	98.4	90.5
Mean*	7,182	3,441	4,031	5,813	11,525	43,382	28,046
Median*	1,225	500	900	1,320	2,500	9,500	4,000
Time deposits							
% holding	22.2	7.4	10.9	18.0	26.8	35.9	26.9
Mean*	19,467	23,221	25,024	32,747	33,493	31,629	31,440
Median*	4,637	1,000	600	2,100	5,000	5,000	4,000
Investments							
% holding	11.2	6.6	8.1	9.8	17.4	44.8	29.0
Mean*	37,446	33,910	41,544	33,533	38,466	291,559	245,377
Median*	7,500	4,000	8,000	5,000	10,000	32,000	25,000
Cash-value insurance & other financial assets							
% holding	25.4	18.3	22.6	28.3	31.0	44.4	35.5
Mean*	15,969	14,909	10,937	8,610	22,015	98,396	70,734
Median*	4,000	2,500	3,000	3,600	5,800	10,500	8,500
401k/IRA & retirement accounts							
% holding	24.4	7.6	14.1	24.6	43.4	69.7	48.8
Mean*	33,151	24,898	49,445	25,270	33,392	141,918	116,192
Median*	10,000	3,100	5,300	7,500	13,000	52,000	35,200

Total Financial assets = **Cash & cash equivalents** (checking, savings, money market accounts, call accounts), **Time deposits** (CDs, savings bonds), **Investments** (stocks, bonds, mutual funds), **Cash-value insurance & other financial assets** (cash value of whole life insurance, annuities, trusts, other managed assets, other financial assets), **401k/IRA & retirement accounts** (IRAs and thrift-type retirement plans).

* Mean and median of those holding the asset

While it's good to see that households have some access to cash, are protecting themselves with insurance, and – for some – are providing for their retirement, the low levels of these assets is of some concern. Furthermore, while these households have some immediate liquidity and some long-term assets, there does not seem to be much in their portfolios for the short- and medium-term. About 70% to 75% of these households spend more than they make; again, this would be a very challenging audience for asset-building programs.

Not surprisingly, households over twice the poverty threshold seem to have the most diversified financial asset portfolio, and come close to mirroring the full U.S. population. Nonetheless, levels of asset holdings are low, perhaps a reflection of their lower income and the resource demands these households face.

What is the best way to model the level of savings for poor and low-income households?

We estimated our savings model using two specifications: a Tobit and a Cragg model (Table 6). The Tobit produces a single set of regressors, whereas the Cragg produces one set for the participation decision equation (the probability of having some assets) and another set for the consumption decision (the dollar value of financial assets). Naturally, the question arises as to which is closer to the "truth" – and fortunately there is a test that allows us to compare the results. Greene (2000) provides a formula for a likelihood ratio statistic:

$$\lambda = -2[\text{loglikelihood}_{\text{tobit model}} - (\text{loglikelihood}_{\text{probit model}} + \text{loglikelihood}_{\text{truncated regression model}})]$$

where λ is distributed as a Chi-square. In our case the test statistic was significant, indicating that the Cragg model is the correct specification (the participation decision is different from the consumption decision) relative to the Tobit.

The two-stage Cragg model is appealing for decisions that include participation and consumption elements of the decision. But while this specification worked for this particular application, researchers need to continue to explore alternative modeling techniques and verify the fit of their models with the data.

It is interesting to notice where some of the differences in the two model specifications occur. For example, the 1998 and 2001 year of survey variables were significant in the Tobit, while the 1995 dummy was significant in the probit portion of the Cragg and all were significant in the truncated regression portion of the Cragg model, indicting that while the levels of financial assets were different for all years, the probability of having savings only differed between 1995 and 2004. This variable also provides evidence of the sign swapping that can occur – households in 1995 were less likely to have savings than those in 2004, but among those that did, the value of their financial assets was likely to be higher in 1995 than in 2004. Several other variables that were significant in the Tobit model were only significant in either the participation or consumption portions of the Cragg model. For example, the 1998 and 2001 variables were not significant in the probit model (the participation decision) but were significant in the truncated regression (the consumption decision). Our discussion below will focus only on those variables that were significant in the Cragg model.

Table 6. Regression Coefficients for Probability of Having Financial Assets and Amount of Financial Assets among Low-Income Households

	Tobit model	Cragg model	
		Probit (have financial assets)	Truncated regression (log of financial assets conditioned on having assets)
Intercept	1.52**	-0.23	4.87**
Year (base: 2004)			
1992	0.07	-0.09	0.22**
1995	0.16	-0.13*	0.37**
1998	0.44**	0.07	0.39**
2001	0.32**	0.03	0.34**
Socioeconomic & demographic variables			
Income (base: 201 – 300% of poverty)			
In thousands	0.03**	0.02**	0.01**
100% of poverty or less	-1.24**	-0.28**	-0.63**
101-150% of poverty	-0.50**	-0.16*	-0.46**
151-200% of poverty	-0.12	0.04	-0.31**
Education (base: high school grad)			
Less than high school	-1.24**	-0.04**	-0.58**
Some college	0.41**	0.18**	0.15**
College degree	0.89**	0.56**	0.46**
Race/ethnicity (base: White & Other races)			
Black	-0.94**	-0.34**	-0.30**
Hispanic	-1.22**	-0.51**	-0.22**
Marital status/gender (base: married)			
Single male	0.06	0.06	-0.09
Single female	0.21**	0.15*	-0.02
Age (base: age 18-34)			
35-49	0.56**	0.07	0.57**
50-64	1.31**	0.27**	1.02**
65 & over	2.43**	0.75**	1.52**
Working status (base: unemployed, not looking)			
Employed	0.59**	0.12**	0.32**
Retired	0.80**	0.13	0.64**
Unemployed, looking for a job	-0.59	-0.22**	-0.03
Resource access and demands for resources			
Received gift or inheritance	0.62**	0.38**	0.42**
Expect to receive gift or inheritance	0.62**	0.34**	0.33**
Expect to leave gifts or inheritance	0.67**	0.18**	0.47**
Home ownership	1.11 **	0.33**	0.66**
Vehicles (base: no car)			
New car (5 years old or less)	1.37**	0.63**	0.39**
Old car (6 years old or more)	.82**	0.31**	0.05
Psychological expectations, motivations & perceptions			
Expect economy to be better over next 5 years	0.02	-0.04	0.06
Expect higher interest rates over next 5 years	-0.13*	-0.07	-0.03
Income rose more than prices over last 5 years	0.14	-0.03	0.15**

Expect a major expense in next 5-10 years	0.55**	0.27**	0.13**
Have a reason to save	0.88**	0.17**	0.64**
Planning horizon (base: long term [10+ years])			
Short term (<= 1 year)	-0.40**	-0.10	-0.41**
Medium term (2 -10 years)	-0.06	-0.04	-0.09
Risk tolerance (base: no risk)			
Moderate risk	0.75**	0.16**	0.63**
Substantial risk	0.72**	0.11	0.68**
Current saver	0.58**	0.13**	0.49**
Usual saver	1.21**	0.39**	0.60**
Institutional environment			
Access to credit (base: did not apply for credit)			
Applied for credit and approved	0.22**	-0.02	0.33**
Applied for credit and rejected	0.32**	0.18**	0.06
Credit card debt (in thousands)	0.03**	0.05**	0.01*
Have paid bills late	-0.23**	-0.10**	-0.23*
Sigma[1]	3.12**		1.90**
Rho[2]		0.01	

* significant at 0.06 to 0.10 ** significant at 0.0001 to 0.05

[1] Sigma is the error term

[2] Rho is the correlation between the error terms of the probit and truncated regression

What factors are associated with the level of financial assets among poor and low-income households?

In general, we found that year of survey, socioeconomic and demographic characteristics; access to resources and demands for resources; expectations, motivations, and perceptions; and the institutional environment were all significantly related to the financial assets that low-income households have. Because the coefficients are not particularly "reader friendly," we calculated the marginal effects of the significant variables and, in the case of the truncated regression, converted these to dollars for easier interpretation (Table 7). Some characteristics were associated with the probability that households had assets (the participation decision), others were associated with the levels of assets (the consumption decision), and still others were associated with both.

Table 7. Marginal Effects on Probibility of Having Financial Assets and Amount of Financial Assets among Low-Income Households (based on Cragg model, evaluated at the mean)

	Marginal effects on probability of having financial assets (mean)	**Marginal effects on amount of financial assets (mean)[1]**
Average probability & level of assets	0.852	$4,205
Year (base: 2004)		
1992	ns	1,021**
1995	-0.020*	1,897**
1998	ns	2,017**
2001	ns	1,707**

Socioeconomic & demographic variables		
Income (base: 201 – 300% of poverty)		
In thousands	0.003**	55**
100% of poverty or less	-0.044**	-1,970**
101-150% of poverty	-0.025*	-1,557**
151-200% of poverty	ns	-1,114**
Education (base: high school grad)		
Less than high school	-0.057**	-1,862**
Some college	0.028**	694**
College degree	0.087**	2,461**
Race/ethnicity (base: White & Other Races)		
Black	-0.053**	-1,094**
Hispanic	-0.079**	-846**
Marital status/gender (base: married)		
Single male	ns	ns
Single female	0.023**	ns
Age (base: age 18-34)		
35-49	ns	3,249**
50-64	0.042**	7,491**
65 & over	0.116**	14,986**
Working status (base: unemployed, not looking)		
Employed	0.019**	1,593**
Retired	ns	3,784**
Unemployed, looking for a job	-0.034**	ns
Resource access and demands for resources		
Received gift or inheritance	0.059**	2,196**
Expect to receive gift or inheritance	0.053**	1,660**
Expect to leave gifts or inheritance	0.028**	2,521**
Home ownership	0.052**	3,902**
Vehicles (base: no car)		
New car (5 years old or less)	0.098**	2,020**
Old car (6 years old or more)	0.047**	ns
Psychological expectations, motivations & perceptions		
Expect economy to be better over next 5 years	ns	ns
Expect higher interest rates over next 5 years	ns	ns
Income rose more than prices over last 5 years	ns	673*
Expect a major expense in next 5-10 years	0.042**	578**
Have a reason to save	0.027**	3,797**
Planning horizon (base: long term [10+ years])		
Short term (<= 1 year)	ns	-1,416**
Medium term (2 -10 years)	ns	ns
Risk tolerance (base: no risk)		
Moderate risk	0.025**	3,660**
Substantial risk	ns	4,089**
Current saver	0.021**	2,666**
Usual saver	0.060**	3,469**

Institutional environment		
Access to credit (base: did not apply for credit)		
Applied for credit and approved	ns	1,663**
Applied for credit and rejected	0.028**	ns
Credit card debt (in thousands)	0.007**	40*
Late bill payments	-0.017**	-850**

* significant at 0.06 to 0.10 ** significant at 0.0001 to 0.05

[1]conditioned on having assets, in 2004 dollars

The table reads: Households in 1995 had a probability of having financial assets that was 200 basis points lower than those in 2004 – 83.2 versus 85.2, respectively. Among those that had financial assets, the amount of financial assets held was $1,021 higher for households in 1992 than in 2004.

Year of Survey

In terms of the probability of having any financial assets, only households in the 1995 survey were less likely than those in the 2004 survey to have any savings – there was no difference in the probability of having fianancial assets between 2004 and any of the other survey years. However, conditioned on having financial assets, the level of assets in all other survey years ranged from $1,000 to $2,000 higher than for those in the 2004 survey. While this is not so suprising for the 1998 and 2001 surveys, given the economic environment at those time, it is somewhat surprising to see higher levels of assets in 1992 and 1995 compared with 2004.

Socioeconomic and Demographic Variables

Compared with households in the 2 to 3 times the poverty threshold category, households at or below 150% of poverty had a lower probability of having financial assets. The other poverty category may be insignificant because the asset distribution for this category has a large upper tail, indicating that some households are substantially asset-rich despite being income-poor. In the consumption decision, all income and poverty categories were significant. As expected, levels of assets increased monotonically across the income categories -- households with higher incomes had higher levels of financial assets.

Those with some college or a college degree were more likely to have financial assets and to have higher levels of financial assets than their high-school graduate counterparts, as expected. Compared with heads of households with a high school diploma, households headed by those with less than a high school education were less likely to have financial assets and held about $1,800 less in financial assets.

Race and ethnicity was significant for both the probability of having assets and the level of assets. Compared with White (non-Hispanics) and other races, Hispanics and Blacks were less likely to have any financial assets and for those with assets, the levels were about $850 to $1,000 less than for whites and other races.

Contrary to expectations, households headed by single females were more likely than their married counterparts to have some financial assets, but there was no difference in the level of assets based on marital status and gender.

Households with a respondent aged 50 and over were more likely to have savings than those aged 18 to 34, as might be expected. Age had the single largest effect on the probability of holding savings – households age 65 and over had a 96.8% probability of having savings compared with 85.2% for the full sample. Similarly, older households were more likely to hold higher levels of assets. For example, asset holdings for those 65 and over were nerly $15,000 higher than for those aged 18-34.

The work status variables produced some interesting results. As might be expected, being employed increased the probability of having savings and the level of assets held. Being retired was not associated with the likelihood of having savings, but retirees did hold higher levels of assets. Being unemployed but looking for a job was associated with a lower probability of having assets, but was not associated with the level of assets held.

Resource Access and Demands for Resources

Many of the resource variables were statistically significant in both stages of the Cragg model. Family resources (receiving or expecting to receive an inheritance) were significant. Interestingly, those expecting to receive an inheritance (even though they had not yet received it) had higher levels of assets than those without such expectations. This may be evidence of family upbringing with respect to saving and investing. Home ownership was positively associated with the probability of having financial assets as well as with higher levels of those assets, an indication that the home is an asset that can be tapped, and not necessarily a resource drain.

Compared with having no car, having either a new or old car was positively associated with a higher probability of having financial assets. However, households with newer cars had about $2,000 more in financial assets than those with no cars; there was no difference between owners of older cars and those with no cars. It may be that while car owners are more likely to save, owners of older cars may need to tap their savings for maintenance, repairs, and upkeep expenses.

Psychological Expectations, Motivations and Perceptions

Expecting a major expense and having a reason to save were positively associated with both the probability of having financial assets and the level of those assets.

The planning horizon variables were not associated with the probability of having savings. However, compared with households with long-term planning horizons, those with short terms horizons had lower levels of financial assets, as might be expected. Logically it would seem that households who are not planning for the distant future, but rather for the next 12 months, might not be concerned with holding larger amounts of savings. .

Interestingly, households willing to take on a substantial amount of risk were no more likely to have savings than their risk-averse counterparts, while those willing to take on a moderate risk were more likely to have savings. However, compared with households that had no tolerance for risk, households willing to take a moderate or substantial amount of risk for moderate or substantial rewards were likely to have an additional $3,600 to $4,000 in assets.

Households who spent less than their income and those that identified some saving strategy were more likely to have savings and to report higher levels of savings than their counterparts, as might be expected. Households who reported spending less than their incomes had an additional $2,600 in savings, while those that reported a planned strategy for saving had an additional $3,400 in savings.

Institutional Environment

Our proxies for the institutional environment were access to credit and payment behaviors. Connections with credit markets did seem to be related to access to financial markets more generally. Compared with households who did not apply for credit, those who applied for credit and were rejected or received lower amounts than they applied for were more likely to have financial assets. On the other hand, those who applied for credit and were approved had about $1,600 more in financial assets than those who had not applied for credit. Households who did not apply for credit may be less connected with the financial mainstream and thus our results may make some sense – those with access to financial institutions, even through credit markets, may be more likely to have financial assets. Households with credit card debt were more likely to have savings and to have slightly higher levels of financial assets, perhaps an indication that credit cards serve as emergency reserves for these households.

Households reporting that they had been late in making loan payments were less likely to have savings, as might be expected. For those with savings, the levels were about $850 lower than for those who reported making payments on time.

Discussion and Conclusions

How does what we learn translate into guidance for policy makers and community groups?

Dollars matter. The poorest group in our study seemed to have very limited ability to save. Four out of five spent more than they made and about one out of four had no financial assets whatsoever. Among those with assets in this group, half had less than $1,000. The probability of these families being able to save in addition to meeting their consumption needs seems low. Moving households into higher income categories increases both the probability of having savngs and the level of savings – increasing income for some households may be the only way to help them begin to save.

Dollars matter, but so do needs. The poverty threshold measure captures some elements of income needs for families – thus an absolute dollar level of income is not always the best measure of who is poor. For example, is a family earning $40,000 poor? The answer is "it depends." If there are several people in the family, some of whom are children, then answer is "yes, that family is poor." Some programs, however, set a dollar-value limit that inhibits the ability of some poor families to access them, even though they are technically poor. This means that programs that target poor and low-income families need to think carefully about their income criteria for program participants.

Expectations and perceived risk matter. Households' expectations about the future have important relationships to savings behaviors. Furthermore, how households perceive risk is associated with levels of financial assets – recall that those who were willing to take more risk had higher levels of financial assets. Behavioral economics, at the intersection of economics and psychology, strives to understand what drives behavior. Researchers and theoreticians have posited that household behaviors are a function of how a problem is framed (for example, how much do you stand to lose versus how much do you stand to gain, with people treating losses differently than gains) as well as on the households' discounting functions (with households over-valuing the present and under-valuing the future; see the discussion in DeBondt & Thaler, 1994). Behavioral economics provides a framework for explaining seemingly "irrational" economic behaviors, such as over-confidence and over-estimating abilities (people think they can do "better than average"). The fields of psychology and behavioral economics may help community educators better frame savings choices and risk-communications information to help people understand the risk-reward tradeoffs.

Make savings automatic. In general, we would like to see more people saving (that is, increase the participation rate) and people saving more (that is, increase the contribution level). This is exactly the situation that retirement savings proponents face – how to increase participation and contributions to thrift savings and 401k-type plans. The proposed solution for retirement plans is to use opt-out rather than opt-in programs – that is, to make savings automatic. Whether this strategy can work with poor and low-income families is questionable, although it is more likely to succeed if the retirement savers credit for low income workers is retained. On the other hand, if there is an absolute income need, then taking money out of a family's pocket may not be such a good idea. Households that reported a savings strategy were more likely to have savings (91% compared with 85%) and held about $3,400 more in savings than their counterparts. Automating savings is one strategy that may help some low income households develop the savings habit.

Get more people saving: e**ducate, educate, educate**. One effective way to raise participation rates – to get more people saving – is to move them from at or below the poverty threshold to above the threshold. Next to moving people out of poverty, one of the best ways to increase the participation rate is to improve education. An increase in formal education (moving from no high school diploma to having a diploma) was associated with a higher probability of having financial assets. However, there is also a role for informal, community-based education. Helping people think ahead and plan for events and expenses in their lives can increase the probability of having financial assets. Also, helping them understand the risk-reward trade-offs among different investment alternatives could lead them to begin building financial assets.

Get people saving more: educate, educate, educate. Once again, one effective way to increase levels of assets is to move people out of poverty. The predicted savings at or below the poverty threshold was about $1,900 less than for those at twice the poverty level. And again, formal and informal education can play a key role. Having a high school diploma or some post-secondary education was associated with higher levels of financial assets. Expectations played a key role in level of assets – thus, helping people realistically assess their situation and set realistic expectations may be important to increasing saving levels. Complementing these realistic expectations is helping people develop a planning horizon that incorporates short-,

medium-, and long-term goals. And, as with the participation decision, helping them understand risk-reward trade-offs can increase levels of assets. One way to do this would be to increase the use of financial planners, counselors, or coaches by low- to moderate-income households. Sung and Hanna (1995) found that households who used a financial professional had higher net worth.

Help families balance immediate, short-, medium-, and long-term financial assets. The balance among financial assets for the poor and near-poor households in our study was heavily skewed toward immediate liquidity. And while access to highly liquid emergency funds is important, so is providing for the future. Earlier we cited traditional personal finance texts that imply a hierarchy of having an emergency fund, saving for short-term and medium-term goals (cars, homes, vacations), and saving for longer term goals (children's college education, retirement). The households in our study seemed to jump over the short- and medium-term goals – their assets were either in cash or in life insurance and retirement. While this strategy may make sense for these households, helping them identify mid-range goals and savings and investment vehicles for those goals is a challenge for community groups involved with asset-building programs.

Fine-tune and target programs. One of the key findings of this study is the importance of understanding the target audience for either welfare or education programs. Policy makers and consumer educators will have to work harder to evoke behavior changes with some audiences than with others. For example, households with incomes below 150% of the poverty threshold may simply be unable to save for big-ticket or long-term items, such as a home. Our findings also point to a need to focus specific programs simply on helping people become savers at all – the first step of the two-step process – and then introduce different programs to help them build their savings.

Be realistic and be prepared to network. The levels of financial assets held by poor and low income households are low – in many cases under $2,000. Not surprisingly, if you don't have a lot, you're not going to be able to save a lot. Time helps somewhat -- recall that older households had higher levels of financial assets than younger households – but policies and programs tend to target younger households. Saving $15,000 for a downpayment and closing costs on a home or $5,000 for a business start-up may not be possible for most low income families. Networking with first-time homebuyer programs, subsidized loan and closing cost programs, IDA programs, and small business development programs need to be part and parcel of any savings or wealth-building program.

Help people develop a savings habit. Households reporting that they "usually" saved were more likely to have financial assets and to have higher levels of assets. As Katona (1949) found, developing the habit of savings takes time, but it appears to have persistence and payoffs. Many financial educators have developed lists of tips and tricks for saving that work, the most common being "pay yourself first." A new spin on this is the "Save More Tomorrow" program (Benartzi & Thaler, 2001), in which employees commit to save out of future pay raises rather than out of current income.

The economy matters. In part, our year of survey variables are proxies for the economic environment of the time. In the early 1990's inflation was averaging around 4% per year,

unemployment was rising from 5.3% (in 1989) to 7.5% (in 1992), and the median income was rising only about 2% per year. In the mid-1990's, inflation had slowed to about 2% per year, unemployment dropped (from 7.5% in 1992 to 5.6% in 1995 and to 4.5% in 1998), and the median income rose about 4 to 5% annually. It was during the 1995 and 1998 surveys that financial asset levels were at their highest in our study. By the early 2000's, inflation had edged up a bit, in the 2-3% range, unemployment ticked up (4.7% in 2001 and 5.5% in 2004), and growth in median income tapered off to between 1 and 2%. These trends may have differential impacts for those at the lowest end of the income distribution. Thus, one way to help the poor save, and to save more, is to maintain sound, steady economic growth.

Limitations

Our proxies for the institutional environment (credit access and payment behaviors) may not have worked as well as we intended. We plan to explore other proxy variables, but it would be ideal to have information on region. We expect that there may be some institutional barriers in the financial services industry that may need to be overcome. Community development financial institutions may play an important role in helping poor households become able to save by making appropriate savings instruments available to them.

We realize that our measure of savings – that is, the level of financial assets – can be criticized. Ideally, we would have information on the flows into the savings accounts and investments rather than the stock of assets. As with most research projects, however, we are limited by available data.

We also realize that the poverty threshold measures are open to criticism. There is no allowance for geographic variation in these thresholds, so they may not really capture the needs-based variations in income. We may have included some households in our study sample who ought not be in the study and we may have missed some households who should have been included. However, the poverty threshold provides a consistent baseline across the years and serves as a useful reference point for other policies and programs.

This research did not address a number of issues raised by others that we feel are valid. For example, we were not able to address the effects of incentives – or disincentives -- on savings. Many of the poor families at or below poverty threshold may also be on welfare. Although most families know there are asset limits for their state, the odds are they do not know what these asset limits are, and, more importantly, they tend to underestimate these limits (see, for example, Marlowe et al, 1996). Given an implicit 100 percent tax rate (a loss $1 of welfare benefits for every $1 over the asset limit), this underestimation is the perfectly understandable, risk-averse approach to take. However, the ultimate outcome is that families have lower levels of assets than they are allowed – the misperception of the barrier is as much a problem as the barrier itself.

A logical next step is to look at a fully interactive model to determine if the differences over time are simply intercept shifters (everyone moves up or down together) or if there are differential effects among households with different characteristics (changes in the slopes). Such a model can help community educators identify consistent ways to help people build assets in a variety of economic environments.

Conclusion

Motivating any household, not just low income households, to save can be a daunting task. This research has shed some light on those areas where policy makers and educators may be able to find some motivational inroads and effect behavior changes.

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Appendix Tables

Proportion Holding and Level of Financial Assets by Income Group and Asset Category, 1989 and 1992

	Asset Liquity Categories	Households at or below 300% of poverty					Non-poor**	All U.S. house-holds
		Study sample	Up to 100% of poverty	101-150% of poverty	151-200% of poverty	201-300% of poverty		
US Population 1989	**Cash & cash equivalents**							
	% holding	72.5%	62.6%	62.9%	75.9%	88.2%	97.3%	83.5%
	Mean*	6,508	2,936	8,372	3,010	10,964	27,363	17,297
	Median*	1,466	938	1,466	1,466	4,178	5,864	3,372
	Time deposits							
	% holding	22.2%	10.7%	30.8%	18.6%	32.8%	55.0%	36.7%
	Mean*	24,092	585	7,912	15,475	47,196	35,960	31,982
	Median*	2,932	190	2,932	22,576	42,514	7,330	4,398
	Investments							
	% holding	8.3%	9.8%	2.7%	2.5%	14.6%	33.2%	19.3%
	Mean*	31,538	33,883	7,330	4,398	36,831	142,786	116,324
	Median*	43,980	43,980	7,330	4,398	60,106	24,922	29,320
	Cash-value insurance & other financial assets							
	% holding	29.3%	17.7%	12.9%	38.8%	47.0%	53.6%	40.1%
	Mean*	11,642	2,204	6,509	12,560	16,239	68,203	45,203
	Median*	4,398	586	2,785	2,932	4,398	10,262	7,330
	401k/IRA & retirement accounts							
	% holding	14.2%	0.9%	4.9%	18.9%	32.8%	56.7%	33.1%
	Mean*	10,095	8,100	10,750	13,296	8,673	63,944	51,076
	Median*	5,864	1,466	4,398	2,932	5,864	23,456	16,126
US Population 1992	**Cash & cash equivalents**							
	% holding	77.9%	53.8%	77.9%	89.4%	93.1%	97.9%	86.8%
	Mean*	5,576	2,780	5,338	4,620	7,902	30,998	18,210
	Median*	1,318	395	1,252	1,317	2,214	13,824	3,017
	Time deposits							
	% holding	23.1%	10.2%	22.7%	25.1%	34.4%	47.6%	33.9%
	Mean*	17,551	16,133	16,695	15,784	19,247	28,550	24,345
	Median*	3,953	2,108	6,655	3,953	2,635	4,612	4,349
	Investments							
	% holding	10.2%	4.8%	8.4%	9.5%	17.2%	39.5%	23.1%
	Mean*	21,124	31,966	13,423	18,073	21,950	163,865	128,478
	Median*	10,543	10,543	7,907	6,325	13,179	26,358	19,768
	Cash-value insurance & other financial assets							
	% holding	32.9%	21.3%	30.4%	36.2%	43.2%	55.8%	42.9%
	Mean*	12,926	6,040	14,408	9,257	17,634	46,072	31,882
	Median*	2,635	1,318	2,504	3,558	3,953	7,907	5,271
	401k/IRA & retirement accounts							
	% holding	20.5%	5.6%	9.6%	25.5%	38.4%	60.9%	38.3%
	Mean*	16,994	14,644	13,636	13,292	19,626	74,303	57,159
	Median*	7,248	6,194	7,907	5,271	7,907	28,993	18,450

Proportion Holding and Level of Financial Assets by Income Group and Asset Category, 1995 and 1998

	Asset Liquity Categories	Households at or below 300% of poverty					Non-poor**	All U.S. house-holds
		Study sample	Up to 100% of poverty	101-150% of poverty	151-200% of poverty	201-300% of poverty		
US Population 1995	**Cash & cash equivalents**							
	% holding	78.4%	56.7%	80.3%	88.1%	93.2%	97.7%	87.1%
	Mean*	5,882	2,944	4,419	6,900	7,764	29,809	17,984
	Median*	1,415	738	984	1,600	2,462	5,416	2,585
	Time deposits							
	% holding	23.5%	11.4%	16.5%	30.7%	35.3%	41.9%	31.8%
	Mean*	15,703	13,477	19,623	11,931	17,319	33,442	26,225
	Median*	2,462	2,092	1,477	4,924	2,585	4,678	3,693
	Investments							
	% holding	11.1%	2.6%	9.2%	11.7%	20.5%	40.1%	24.2%
	Mean*	33,190	22,738	26,713	22,978	39,355	203,162	160,109
	Median*	7,386	3,323	18,466	4,924	9,233	24,622	18,466
	Cash-value insurance & other financial assets							
	% holding	31.6%	22.8%	29.8%	34.7%	39.6%	52.3%	40.9%
	Mean*	16,872	14,416	12,515	16,909	19,989	64,868	44,504
	Median*	3,693	3,570	2,462	3,570	5,539	11,079	7,386
	401k/IRA & retirement accounts							
	% holding	25.6%	5.9%	18.8%	30.1%	46.2%	64.6%	43.2%
	Mean*	23,523	21,685	27,619	14,353	26,288	81,615	62,686
	Median*	8,617	6,894	6,155	5,663	10,710	28,315	19,697
US Population 1998	**Cash & cash equivalents**							
	% holding	82.5%	62.8%	82.3%	90.8%	95.4%	99%	90.5%
	Mean*	6,891	3,035	5,476	6,459	9,893	30,693	19,446
	Median*	1,391	579	1,159	1,740	2,434	7,651	3,547
	Time deposits							
	% holding	22.1%	9.4%	22.0%	27.1%	30.5%	39%	30.3%
	Mean*	19,467	17,981	18,438	18,803	20,538	29,948	25,985
	Median*	4,637	5,796	4,637	6,376	3,593	5,796	5,216
	Investments							
	% holding	13.7%	5.2%	10.5%	17.1%	21.0%	46.6%	29.5%
	Mean*	50,054	50,736	41,126	31,942	59,352	264,912	213,208
	Median*	12,288	10,433	11,129	11,593	12,984	40,575	28,982
	Cash-value insurance & other financial assets							
	% holding	30.2%	23.3%	28.8%	32.9%	35.5%	47.8%	38.7
	Mean*	24,239	22,594	26,400	18,935	26,537	102,169	70,638
	Median*	4,637	2,898	4,057	4,173	6,955	13,911	10,201
	401k/IRA & retirement accounts							
	% holding	26.7	8.0%	15.9%	31.3%	46.2%	70.9%	48%
	Mean*	26,485	17,959	17,027	20,372	31,472	109,188	85,332
	Median*	10,433	4,637	3,477	5,796	12,752	39,416	26,663

Proportion Holding and Level of Financial Assets by Income Group and Asset Category, 2001 and 2004

	Asset Liquity Categories	Households at or below 300% of poverty					Non-poor**	All U.S. house-holds
		Study sample	Up to 100% of poverty	101-150% of poverty	151-200% of poverty	201-300% of poverty		
US Population 2001	**Cash & cash equivalents**							
	% holding	82%	63.4%	82.4%	88.7%	92.8%	99%	90.1%
	Mean*	7,601	5,588	4,995	7,358	10,180	41,309	26,716
	Median*	1,423	656	1,204	1,532	2,408	7,773	4,379
	Time deposits							
	% holding	18.7%	8.7%	14.3%	24.2%	26.1%	37.2%	28.3%
	Mean*	15,665	14,114	16,083	16,651	15,436	32,776	27,361
	Median*	5,474	9,524	5,474	4,379	3,284	6,568	5,474
	Investments							
	% holding	13.9%	3.9%	7.9%	15.6%	24.5%	46.1%	30.7%
	Mean*	42,943	51,035	42,908	40,169	42,911	321,142	260,570
	Median*	8,758	12,042	8,211	9,634	8,758	41,602	32,844
	Cash-value insurance & other financial assets							
	% holding	27.1%	15.1%	23.4%	32.2%	36.1%	46.3%	37.1%
	Mean*	24,289	22,887	14,117	24,620	28,488	133,694	95,298
	Median*	6,568	4,926	3,284	8,211	7,116	19,706	10,948
	401k/IRA & retirement accounts							
	% holding	27.8	10.4%	21.1%	28.9%	45.0%	72.2%	50.9%
	Mean*	26,156	17,591	26,480	17,940	34,976	140,426	111,103
	Median*	7,000	3,612	6,568	6,021	10,948	47,076	30,654
US Population 2004	**Cash & cash equivalents**							
	% holding	81.6%	66.2%	80.8%	85.1%	92.5%	98.4%	90.5%
	Mean*	7,182	3441	4031	5813	11525	43,382	28,046
	Median*	1,225	500	900	1320	2500	9,500	4,000
	Time deposits							
	% holding	22.2%	7.4%	10.9%	18.0%	26.8%	35.9%	26.9%
	Mean*	19,467	23,221	25,024	32,747	33,493	31,629	31,440
	Median*	4,637	1,000	600	2,100	5,000	5,000	4,000
	Investments							
	% holding	11.2%	6.6%	8.1%	9.8%	17.4%	44.8%	29%
	Mean*	37,446	33,910	41,544	33,533	38,466	291,559	245,377
	Median*	7,500	4,000	8,000	5,000	10,000	32,000	25,000
	Cash-value insurance & other financial assets							
	% holding	25.4%	18.3%	22.6%	28.3%	31.0%	44.4%	35.5%
	Mean*	15,969	14,909	10,937	8,610	22,015	98,396	70,734
	Median*	4,000	2,500	3,000	3,600	5,800	10,500	8,500
	401k/IRA & retirement accounts							
	% holding	24.4%	7.6%	14.1%	24.6%	43.4%	69.7	48.8%
	Mean*	33,151	24,898	49,445	25,270	33,392	141,918	116,192
	Median*	10,000	3,100	5,300	7,500	13,000	52,000	35,200

Total Financial assets = **Cash & cash equivalents** (checking, savings, money market accounts, call accounts), **Time deposits** (CDs, savings bonds), **Investments** (stocks, bonds, mutual funds), **Cash-value insurance & other financial assets** (cash value of whole life insurance, annuities, trusts, other managed assets, other financial assets), **401k/IRA & retirement accounts** (IRAs and thrift-type retirement plans).

* Mean and median of those holding the asset