

Income, Institutions, and Saving Performance in Individual Development Accounts

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***Abstract:** This paper examines the relationship between income and saving performance in Individual Development Accounts (IDAs). We first discuss theories of saving. Next, for IDA participants in the American Dream Demonstration, we look at income sources and distribution, followed by tabulations of income and IDA savings outcomes. Following this, we discuss results from regression analyses on IDA savings outcomes. We find that the IDA savings amount did not increase with income, and that the IDA savings rate decreased with income. Although the data do not reveal exactly what caused this, we believe that institutional factors in IDA programs played an important role.*

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Individual Development Accounts (IDAs) are saving programs targeted to people with low incomes, with subsidies in the form of matching funds upon withdrawal (Sherraden, 1988, 1991). Matched uses of IDA withdrawals vary across IDA programs but typically include home ownership, post-secondary education, and microenterprise. IDAs have become more common during the past decade. More than 40 states have an IDA policy of some type, and there are perhaps 400 community-based IDA programs. At the federal level, IDAs were included as a state option in the 1996 “welfare reform” act, and a federal IDA demonstration created by the *Assets for Independence Act* began in 1998. Despite this policy activity, coverage is quite limited; the total number of IDA participants in the United States at this writing is probably less than 20,000. IDAs are in the early stages of development, and much remains to be learned about whether and how they can be an effective tool for building assets of the poor. This is a study of IDAs in the “American Dream Demonstration” (ADD). ADD began in 1997, is funded by 11 foundations, and is the first large test of IDAs.¹

The question posed in this paper is: What is the relationship between income and savings performance in a program of IDAs?² In a departure from purely economic predictions, we find that net IDA savings amount is not associated with income, and that IDA saving rate is negatively associated with income. In part, these results may be due to the influence of

¹ The Down Payments on the American Dream Policy Demonstration, known in short as the “American Dream Demonstration” (ADD), is funded by a consortium of foundations (see acknowledgements). The Corporation for Enterprise Development (CFED) in Washington, DC, is undertaking the demonstration, and the Center for Social Development (CSD) at Washington University in St. Louis has designed and is overseeing the research. The saving period for the demonstration is four years in length (1997-2001). Use of IDA funds and research will extend for an additional two years or longer.

² This paper draws on a research report and theoretical discussion by Schreiner et al. (2001) and reviews of theory and research by Beverly and Sherraden (1999, 2001) and Sherraden (2001).

institutional characteristics such as the monthly savings target, financial education, and withdrawal restrictions.

SAVING THEORY AND IDAs

Can Low Income People Save in IDAs?

Individuals save in different ways and accumulate different types of assets. For example, they may store tangible goods, they may invest in human capital, or they may loan money or in-kind resources to members of their social network. In this paper, we look only at financial assets saved in IDAs. In discussions of IDAs it is often suggested that very poor people may not be able to save in IDAs or elsewhere because their incomes are so low that, after purchase of necessities, there is nothing left to save. Do theory and evidence support this assumption?

At the outset, we emphasize that this is not a study of total household saving, but only IDA saving. The possibility certainly exists that IDA saving can increase while total household saving or net worth do not increase. In this study we cannot test for reshuffling of savings and other forms of assets. Nonetheless, the results and conclusions may be suggestive for theory about total household savings, especially because these are low-income households with, on average, few other financial assets.³

Economic theory predicts that the absolute amount of savings will increase with income. This is because people with more income have more resources available to save. Theory also predicts that savings relative to income, the savings rate, will increase with income (Deaton, 1992b). This occurs because people with more income also tend to consume more. As they consume more, the marginal benefit from additional consumption decreases. The current cost of saving, in terms of foregone benefits from consumption, is lower for people who consume more,

³ While reshuffling of assets is less likely among people with few assets, it is nonetheless very possible. In chapter 14 of Schreiner et al. (2001) we discuss reshuffling in greater detail.

and this increases savings. Empirical evidence clearly indicates that higher-income households save a larger portion of their incomes, and accumulate greater wealth, than lower-income households. In fact, most low-income households have very low or negative saving rates and very limited or negative asset accumulation (Bernheim & Scholz, 1993; Bunting, 1991; Carney & Gale, 2001; Hubbard, Skinner, & Zeldes, 1994, Table 2; Wolff, 1998).

Like all theory, however, this ignores some important issues. For example, the level and rate of savings also depend on expected variation in income and subsistence requirements. The poor face greater risks, and this tends to increase their saving, both absolutely and relative to their income. Of course, the poor likely saved less in the past; if not, then they would not be poor. However, they may have saved at higher rates relative to resources available. Also, the poor may save at higher rates when they save, but dissave at higher rates when they dissave.

Will Low-Income People Oversave in IDAs?

By definition, saving postpones consumption. In the short term, people who save consume less and are worse off in this sense, all else constant, than non-savers. Savers make the short-term sacrifice because they expect it to improve long-term well being. For very poor people close to subsistence, increased saving might reduce consumption to the point of harm. For example, it would be harmful if a family saved so much in IDAs that they could not buy enough food for the healthy development of their children, or it would be harmful if a family saved but did not go to the doctor to set a broken arm or to get antibiotics for a severe infection.

An important question, not well addressed in this paper, is whether saving in IDAs might reduce short-term consumption so much that the poor suffer hardship. We have looked for this possibility in surveys and in-depth interviews with participants. For the most part, participants in IDAs report positive effects. For example, 93 percent of respondents in a cross-sectional survey

agree or strongly agree that, because of IDAs, they feel more confident about the future; 84 percent, more economically secure; and 85 percent, more in control of life (Moore et al., 2001). However, there is some survey evidence that hardship may be caused by IDA saving; about 17 percent of respondents say that one of their savings strategies is to postpone doctor or dental visits; and 8 percent agree or strongly agree that because of IDA saving they have given up food or necessities (Moore et al., 2001). Overall, however, we do not see much evidence of hardship caused by IDA saving. It is important to note that participation in IDAs and the level of savings are voluntary; participants decide whether they want to save and how much to save.⁴

The Role of Institutions

An institutional perspective suggests that external factors other than income and preferences may influence saving behavior in IDAs or other forms, and that low savings and asset accumulation by poor people might be explained in part by limited institutional saving opportunities. From this perspective, “asset accumulations are primarily the result of institutionalized mechanisms involving explicit connections, rules, incentives, and subsidies” (Sherraden, 1991, p. 116). For the non-poor, these occur through housing- and retirement-related tax benefits, including deductions for home mortgage interest and property taxes, deferment and exclusion of capital gains on sales of principal residences, exclusions for employment-sponsored pension contributions and earnings, deferments for Individual Retirement Accounts and Keogh Plans, and employer contributions to employee pension plans. Because these mechanisms receive preferential tax treatment, individuals who have access and greater incentives are more

⁴ The role of choice is fundamental. As a policy principle, if the rich have subsidies such as tax benefits to increase assets, then it is a matter of fairness that the poor also have subsidies, and then everyone can make their own choices. If some of the poor were to save to the point of harm, this would be undesirable, but public policy should not make this choice for the poor by not offering subsidies to save, as is currently the case (except for the limited coverage of IDAs). Not offering subsidies to save surely causes greater material harm than the possibility of over saving. Moreover, it is unjust and reduces freedom.

likely to participate. For example, people with higher marginal tax rates are more likely to participate in tax-deferred savings programs (Joulfaian & Richardson, 2001). The poor do not have the same access or receive the same incentives from institutions that promote and subsidize asset accumulation (Howard, 1997; Sherraden, 1991, 2001a). For example, the poor are less likely to have jobs with pension benefits; even if they do, they receive few or no subsidies because they have low or zero marginal tax rates and the tax benefits are not refundable.

Institutional perspectives are not new (e.g., Gordon, 1980; Neal, 1987), but they are not well specified. If we are making any contribution it is in taking a small step toward specifying what “institutions” mean in practical application. We have previously identified four major categories of institutional variables: (1) *access*, (2) *information*, (3) *incentives*, and (4) *facilitation* (Beverly & Sherraden, 1999). The first three are commonly discussed, and we have offered the fourth term “facilitation” to describe institutional arrangements where depositing is actually done *for* the participant, as in automatic payroll deduction, or occurs with some other form of assistance. Facilitation is a key feature of most contractual saving systems.

Based on qualitative research on IDAs (not yet published) we suggest another institutional variable that may be important in explaining saving performance: (5) *expectations*. In IDAs, expectations are embodied in the monthly saving target and the social pressure of staff and peers. Many IDA participants say that they are trying to save the expected amount each month, and thus expectations may cause very low income people to save more than would otherwise be anticipated. Also, we here explicitly state a sixth institutional variable that we have assumed in the past: (6) *limits*. Limits refers to fixed policy and program boundaries or constraints, such as match caps and withdrawal restrictions. Limits may have a negative connotation, and indeed they restrict options, but limits are necessary in any subsidized saving

policy, and when they are present they are very likely to affect saving performance. For example, if an IDA program will match up to \$500 per year, the limit by definition will ensure that participants do not save above this amount in the IDA program (though they may choose to save more elsewhere). The alternative would be no limits, in which the matchable amount would be infinite. All else constant, the first five institutional aspects of IDAs are hypothesized to increase IDA savings, perhaps more so for the poorest; and limits may censor the IDA savings of the not-so-poor.⁵

Turning to empirical evidence, the broad pattern is that accumulation of assets in the typical US household occurs largely via home ownership and retirement pension accounts (Wolff, 2001), both of which are institutionalized and subsidized. If future social security benefits are counted as assets, then this is even more true, and brings in poor households because the poor often hold a larger share of their net worth in social security entitlements (Burkhauser & Weathers, 2001). This overall pattern is strongly suggestive of institutional influences on asset accumulation.

Turning to each of the six institutional variables listed above, there is little empirical evidence regarding the effects of *access* on saving and asset accumulation, largely because it is difficult to disentangle the effects of access from the effects of unobserved individual characteristics.⁶ However, some researchers (Cagan, 1965; Carroll & Summers, 1987) have concluded that the very availability of institutionalized saving opportunities promotes saving by calling attention to the need for and benefits of saving.

⁵ Public policy always has caps for saving subsidies, e.g., limits on how much can be deposited annually into a 401(k) account, and these caps have censoring effects, though these effects are seldom studied. Censoring refers to the difference between desired and actual savings amount.

⁶ For example, if workers consider the availability of pension plans when they evaluate job offers, then those who work for firms that offer pension plans may value retirement saving more than the average individual. This would create a positive association between access and saving, even if access has no independent effect.

More research is also needed to evaluate the effect of financial *information*, which is typically provided through some type of financial education. However some evidence exists. Bayer, Bernheim, & Scholz (1996) find that more frequent corporate-sponsored retirement seminars were associated with both higher participation and higher levels of contributions to 401(k) plans. Bernheim & Garrett (1996) report that participation rates were 12 percentage points higher for companies that offered financial education, and in firms that offered financial education, participation rates were 20 percentage points higher for employees who chose to attend. Education increased new savings of all types as a percentage of income by 1.7 percentage points, which is a large effect. In all cases, effects were greatest for people who saved little before they received education. In another study, Bernheim, Garret, & Maki (2001) report that financial education for teens increases savings rates in adulthood.

The net effect of *incentives (rates of return)* on saving is the subject of much debate. Neoclassical economic theory does not predict that an increase in the rate of return will necessarily increase saving. There are two key issues. First, changes in the rate of return on savings may simply result in the “reshuffling” of the form of assets, with no new saving. Second, for net savers, an increase in the after-tax rate of return has two contradictory effects. Individuals may choose to save more because the price of current consumption increases relative to the price of future consumption (the substitution effect). On the other hand, with higher rates of return, individuals can save less and still enjoy the same amount of future consumption (the income effect). Empirical evidence regarding the effect of incentives on saving is mixed (see Engen, Gale, & Scholz, 1996; Hubbard & Skinner, 1996; and Poterba, Venti, & Wise, 1996 for reviews), but several studies suggest that individuals save less in the face of saving disincentives (Feldstein, 1995; Hubbard, Skinner, & Zeldes, 1995; Powers, 1998). It is also important to note

that reshuffling is less likely for low-income households because they are less likely to have savings and other assets to reshuffle.⁷

Direct tests of the proposition that *facilitation* promotes saving are rare, but anecdotal evidence regarding the effectiveness of direct deposit and payroll deduction is strongly suggestive. Also, the fact that home equity—which accumulates from contractual saving—is the primary form of wealth for most Americans (Davern & Fisher, 2001) provides important indirect evidence. One recent study provides strong, direct evidence that facilitation affects saving behavior. Madrian & Shea (2000) studied 401(k) participation and contribution rates in a company that began automatically enrolling employees in their 401(k) plan.⁸ Although none of the economic features of the plan changed, participation was significantly higher under automatic enrollment. Participants were also quite likely to stay with the default contribution rate and the default fund allocation. Other evidence on the importance of facilitation is the common practice of using the income tax withholding system as a kind of saving plan. Millions of households withhold more than the taxes they owe, planning for a lump-sum refund, despite the strong economic disincentive (the cost of foregone earnings on the money) in saving through this mechanism.

Expectations in the institutional sense described above is largely unresearched. The only data we have are qualitative reports from some IDA participants in ADD that they view the match cap as a target savings amount, and that staff and peers often encourage them to do so. In many cases, this is defined by the program as a monthly target savings amount. Some IDA participants state directly that they are trying to reach this target to fulfill expectations of staff. A

⁷ Empirical data indicate that most IRA contributors have relatively little wealth (Summers and Carroll, 1987), and empirical analysis simulating the effects of private pension plans suggests that pensions do not offset personal saving among lower-income (less-educated) workers (Bernheim and Scholz, 1993).

⁸ Before the change, employees had to actively sign up to participate in the 401(k) plan. After the change, employees had to actively opt out of the plan.

large body of social-psychological research confirms that people tend to do what others expect them to do. However, systematic research is needed on expectations regarding institutions and economic behavior, especially if IDAs and similar subsidized savings strategies are to operate as intensive programs based in community organizations, where expectations may be more explicit and communicated more often.

Limits is a well-known and researched institutional variable, though not always under this name. Limits may be called constraints, restrictions, caps, or other terms. In studies of savings policies such as 401(k)s and IRAs, limits play an important role because they censor saving, i.e., an external limit is imposed so that the individual does not save above a certain amount, even if she would prefer to do so. Schreiner (2001) discusses match caps or limits in IDAs. In general there is little doubt that limits reduce savings, though better studies are needed to estimate desired savings amounts and account for censoring effects.

The overall theoretical perspective underlying IDAs is that institutional factors are important in determining saving behavior. As stated above, increases in access, information, incentives, facilitation, and expectations are hypothesized to increase IDA savings, while limits may serve to decrease IDA savings. If these six institutional constructs (and perhaps others) do in fact affect saving, then it is important to point out that low-income households typically have limited access to these saving features (Caskey, 1994; Bernheim & Garret, 1996; Beverly & Sherraden, 1999). A central question for research is the relative importance of income and institutional factors for savings in IDAs, especially for the very poor. The current data cannot be used to test all of these hypotheses thoroughly, nor do they yield definitive answers, but the data and analyses can shed some light on the issues. First we describe the IDA programs and participants in the study.

ADD PROGRAMS AND PARTICIPANTS

ADD Programs

IDAs operate in community-based organizations in cooperation with financial institutions (a few IDA programs are run by financial institutions). Of the 14 ADD program sites, six are in community development organizations, two in social service agencies, two in credit unions, two in housing organizations, and two are collaborations among multiple sites. Match rates for accounts vary from 1:1 to 6:1, and 2:1 is the most common. Regarding funding partners, 14 sites have not-for-profit funders (foundations play the largest role); nine have corporate funders (most often the banks where IDAs are held); eight have public funding; and two have funding from individuals. Eight programs have annual deposit limits, ranging from \$180 to \$3,000; and six programs have lifetime deposit limits, ranging from \$1,800 to \$8,000. Regarding depository institutions, nine programs are using a bank or a saving and loan institution, and five are using a credit union. Twelve programs provide monthly statements, and two provide quarterly reports. All programs offer interest-bearing accounts; sometimes the interest rate is higher than for normal passbook savings accounts. All 14 programs permit IDAs to be use for home purchase, microenterprise, and post-secondary education; 11 allow job training or technical education; nine allow home repair or remodeling; and four allow retirement.

ADD Population vs. General Low-Income Population

For the most part, the participant population in ADD has been selected to be at 200% of the federal income-poverty guidelines or below, though this guideline was extended for some participants (see data on income below). Participants are associated with or recruited by the various sponsoring organizations; they are often clients or customers. Another key feature of ADD participants is that, in response to an IDA program announcement, they have come forward

to participate. Because they come from particular programs and because ADD participants choose to participate, it is likely that the personal characteristics of ADD participants differ systematically from the personal characteristics of the general low-income population. Below is a summary of key differences between the ADD population and the overall U.S. population at or below 200% of the income-poverty line.⁹

The ADD population has a greater percentage of females than the general low-income population (78% vs. 59%). Compared to the general low-income population, the ADD population has fewer Caucasians (41% vs. 64%), more African Americans (40% vs. 16%), and fewer Latinos (12% vs. 16%). The ADD population differs from the general low-income population in having more people who are single and never married (46% vs. 28%), and fewer people who are married (24% vs. 42%). The higher proportion of women, the higher proportion of African Americans, and the higher proportion of people who are single and never married in ADD, compared to the general low-income population, probably reflects the populations served by the sponsoring organizations. These markers of disadvantage (female, black, and single) may suggest that, among the working poor population, somewhat more disadvantaged people are participating in ADD.

On the other hand, the ADD population is much more highly educated than the general low-income population. A higher percentage of ADD participants have completed high school (85% vs. 65%), and a high percentage have graduated from college (20% vs. 8%). The ADD population has a much higher proportion of people who are employed full-time or part-time

⁹ Comparison statistics are from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP). These data (which come from the ninth wave of the 1993 SIPP panel) refer to September 1995. The sample includes individuals 18 years old and older who were living in households with income at or below 200% of the appropriate official poverty threshold. To obtain annual household income, we multiplied household income for the month of September by 12. Data on employment status refer to characteristics as of the *first week* of September 1995. The "bank use" variable identifies individuals *living in households* that had a checking or savings account in the first quarter of 1995. The data are weighted by person-level weights provided by the Census Bureau.

(84% vs. 44%), and a lower proportion who are out of the labor market, i.e., neither employed nor looking for work (5% vs. 52%). These differences are explained in large part by the targeting of most ADD programs to the working poor. Given the targeting of the programs, ADD has little to say about whether IDAs can work for more disadvantaged populations in terms of education and employment. More generally, ADD will not be able to say anything about the question of overall demand for IDAs should they be offered on a large scale.

Length of IDA Participation

Participants in the IDA programs of ADD did not all start at the same time. As of June 30, 2000, average length of participation was 13.8 months. Excluding dropouts would give an average length of participation of 16.4 months.

MEASUREMENT OF INCOME AND SAVING

Data on savings in ADD are quite accurate because they come from account statements from financial institutions, recorded in the Management Information System for Individual Development Accounts or MIS IDA (Johnson, Hinterlong, & Sherraden, 2001). These are likely the best data to date on deposits and withdrawals by the poor in a matched-saving program. However, the income data are subject to several sources of possible bias, all of which would tend to mask possible positive correlations between income and savings.¹⁰ Income data in most surveys are underreported, and social research often finds that very poor people understate their income more than less-poor people (e.g., Edin and Lein, 1997).¹¹ Moreover, IDAs are means-

¹⁰ The regression analyses use income data of enrollment to avoid issues of two-way causation. Some programs later updated income data. Descriptive statistics use the updated data where it exists.

¹¹ The reasons for greater under-reporting of income by the very poor are: (a) Some public assistance is means-tested, so the poorer you are and the closer to qualifying for means-tested programs, the more likely you are to have strong incentives to conceal some income. (b) If you are very poor, you are more likely to have income from “informal” or irregular sources that is not only easy to conceal but also easy to honestly forget. (c) If you are very poor, a lot of your income tends to be in-kind or in other forms (such as food stamps) that tend to be under-measured by survey questions on financial income.

tested on income, and participants at enrollment may have believed that they had incentives to understate their income.

Several specific sources of measurement error are also likely. First, MIS IDA is an administrative tool, a management-information system, and MIS IDA data were collected not by trained enumerators but by staff of the IDA programs in ADD. Second, at the largest program in ADD, with 19 percent of participants, income data were patched together from several sources, and the questions used were not exactly the same as those in MIS IDA. Third, the question about income in MIS IDA asked for “monthly gross income of household by source.” We do not know exactly how the participants interpreted “monthly.” For example, some may have answered with their average monthly household income in the past calendar year or with their average monthly income in the 12 months before enrollment. Others may have given their income in the month of enrollment or in a typical or average month. Fourth, income varies from month to month, but ADD measures monthly income only once. Such monthly data probably has more variation than would annual data, and variation in income may be large for the poor (Deaton, 1997).

Beyond measurement error, variation through time introduces a more subtle bias. Because people have more resources available to save when income is higher, they are more likely to enroll in months when income is unusually high. If their income then regresses to its long-term mean in subsequent months, people with high reported monthly income at enrollment will appear to have lower savings rates. In the same way, people who happened to enroll in months of low income will progress to the mean and have higher apparent savings rates.

Other factors could mask a positive relationship between income and savings. First, people may be more likely to enroll if they expect their future income to increase (because this reduces the expected cost of future saving). In other words, IDAs may catch some people on

their way up. If so, then income at enrollment is lower than in subsequent months, so the IDA savings rate in terms of income at enrollment is higher than the IDA savings rate in terms of average income in all months of participation. The economy was growing during the study period, so this effect might matter for some people. Second, the match cap may hide links between income and savings (or savings rates) because it may constrain observed IDA savings for high savers.

Together, the above sources of possible bias tend to mask a positive correlation between income and savings. Thus, a positive estimated link between income and savings would be a very strong finding. A negative or zero estimated link would be weaker because these biases might explain all or part of it.

INCOME AND SAVINGS OF PARTICIPANTS IN ADD

As of June 30, 2000, the mean monthly household income of participants in ADD was \$1,474, and the median was \$1,340.¹² About 8 percent of participants had monthly income of \$499 or less. Most participants (68 percent) had monthly income between \$500 and \$1,999, and 22 percent had income of \$2,000 or more. On average, income was 111 percent of the poverty line (adjusted for household size). The median income/poverty ratio was 100 percent; in other words, the typical ADD participant was just at the poverty line. About 21 percent of ADD participants were below 50 percent of the poverty line.

Recurrent Income

Recurrent income (wages, government benefits, pensions, and investments) was 83 percent of total income. Recurrent income had a mean value of \$1,229 and a median value of \$1,199. About 78 percent of participants received wages, and 26 percent received government

¹² These descriptive data on income come from the June 30, 2000 record in MIS IDA, not the at-enrollment record.

benefits. In terms of value, 67 percent of total income came from wages and 14 percent from government benefits (Table 1).

Do IDAs work only for relatively advantaged, employed poor people? Although most participants in ADD were employed, these data cannot address this question. Most programs in ADD target the “working poor” and make employment a prerequisite for participation. Given that the unemployed were usually ineligible, their low numbers in ADD say little about whether IDAs appeal to employed people more than to unemployed people.

About 2 percent of participants in ADD had income from pensions, and 1 percent had income from investments. These two sources together were less than 1 percent of the value of income. These figures are consistent with the pattern that the poor in general are unlikely to hold investments that generate income, and most of the elderly poor do not receive pension benefits.¹³

[Table 1 about here]

Intermittent Income

Intermittent income (self-employment, child support, gifts, and other sources) for participants in ADD was 18 percent of total income and had a mean monthly value of \$253. About 16 percent of participants reported self-employment income. This figure is much higher than that of the overall population, probably as a result of two factors. First, many of the host organizations in ADD also sponsor microenterprise programs and may refer people in these programs to the IDA program. Second, because microenterprise is a matchable use, IDAs may attract entrepreneurial people. About 19 percent of participants in ADD reported that they owned a business, and 18 percent reported that they planned a matched withdrawal for microenterprise. Self-employment income was 9 percent of total income (for self-employed

¹³ Of 16 people aged 65 or more in ADD, 5 reported income from pensions.

people, it was half of total income).¹⁴ About 15 percent of participants received child support (42 percent of all participants are single females with children). About five percent received income from gifts, and 10 percent had income from other sources. Together, these last three sources were 9 percent of total income (Table 1).

IDA Savings Outcomes by Income

In this section we look at relationships between income (for decile groups) and four IDA savings outcomes: average monthly net deposits, IDA savings rate, deposit frequency, and net deposits as a percentage of the pro-rated match cap. These bivariate analyses do not control for any other variables.

Average monthly net deposits. *Average monthly net deposits* (AMND) is total IDA deposits, less unapproved (not matchable) withdrawals, divided by number of months of participation. For the entire ADD population, including dropouts, AMND was \$25.42, with a range from \$16.37 for the lowest income group to \$36.89 for the highest (Table 2). In general, AMND increased with income. The increase in savings, however, did not keep pace with the increase in income. If the lowest group and the highest group are set aside, then income for the middle eight groups ranges from about \$800 to about \$2,400 (an increase of 200 percent) but AMND ranges from \$22.48 to \$30.92 (an increase of less than 50 percent).

[Table 2 about here]

IDA savings rate. *IDA savings rate* is AMND divided by monthly income. As income increased, the savings rate decreased (Table 3). Participants in the lowest income group saved 5.6 percent of their income in IDAs, while participants in the highest income group saved 1.2 percent. The trend held for the middle eight income groups (from 3.4 percent for the second

¹⁴ This income is considered “intermittent” because it is highly variable, even for the full-time self-employed.

lowest group to 1.4 percent for the second highest). This pattern reflects the small increase in AMND associated with large changes in income (see Table 2).

[Table 3 about here]

This simple tabulation ignores the possibility that the apparent patterns may be due to chance through sampling variation. To check this, we can examine the standard errors for each income decile. The standard errors are large (because the savings rate varies a lot within each income group), so we cannot say with confidence that mean rates differ across deciles.

Deposit frequency. *Deposit frequency* is the share of months with an IDA deposit. On average, participants made deposits in 58 percent of months (about 7 months per year). Means ranged from 50 percent for the lowest group to 65 percent for the highest. For the middle eight groups, deposit frequency does not have a clear trend, and its range is small (56 percent to 60 percent). In this simple tabulation, income does not have a strong link with deposit frequency.

Net deposits as a percentage of the pro-rated match cap. This measure is the ratio of AMND to the monthly savings target. The *monthly savings target* is the total match cap divided by the time cap. If deposited each month and not removed as an unmatched withdrawal, this level of savings would lead to net deposits equal to the lifetime match cap by the end of participation. For ADD, the mean net deposits as a percentage of the pro-rated match cap was 67 percent, and the median was 49 percent. At this pace, the average participant will have net deposits of 2 dollars for every 3 dollars that could be matched by the end of ADD. The median or typical participant will have net deposits of 1 dollar for every 2 dollars that could be matched. Across income groups the mean ranges from 53 percent for the lowest group to 85 percent for the highest group. Groups 2 through 6 have figures in a narrow range from 61 to 65 percent, but

the measure jumps to 70 percent or more for the four highest groups. Roughly, people with more income use a larger share of their match eligibility.

REGRESSION ANALYSIS: INCOME AND SAVINGS

The regression is a Heckman two-step, which first estimates a Probit for dropouts (zero savers), and then uses the transformed residuals from the Probit as a regressor in the second step, which is an ordinary least squares regression for the remaining sample (savers). This regression procedure is more appropriate for this study than an ordinary least squares regression because dropouts from IDA programs likely represent a distinct group compared to participants who do not drop out, and policy implications for the two groups would be very different. Mixing the two groups would obscure patterns of interest.¹⁵

In another paper, we estimate the association between income and dropout (Schreiner & Sherraden, this volume). In this paper, we study non-dropouts. In our regression model the R-square is 41 percent, which is high compared to most other studies of savings performance. This is probably due to having very accurate savings data (from banks) and the large number of control variables in the regression and program dummies.

We first examine the association between income and average monthly net deposit (AMND). Recurrent income had no statistically significant association with AMND (Table 4). Each \$100 of intermittent income is associated with an increase in AMND of \$0.32 (96-percent confidence), which is a small effect.¹⁶

¹⁵ We use the Heckman two-step to control for the possibility that drop-out/non-drop-out is correlated not only with variables in our regression but also with unobserved characteristics that are correlated both with the likelihood to drop out and, for those who do not drop out, expected savings (in the sense of mathematical expectation, or average).

¹⁶ Some notes on interpretation of the regression results in Tables 4-7 may be useful: “Change in \$” is the expected change in net IDA saving due to a unit change in the relevant independent variable. The p-value is the probability that the estimated effect is not significantly different from zero due to sampling variability. Splines allow the effect of an independent variable to vary according to the level of the variable. For example, age is specified as a two-piece spline. Between the ages of 0 to 40 years, an additional year of age is expected to increase net IDA savings by

[Table 4 about here]

Next, we estimate the association between income and the IDA savings rate (AMND/monthly income), holding constant a wide range of program and participant characteristics.¹⁷ Among the 84 percent of participants who had not dropped out as of June 30, 2000, higher income was associated with a lower savings rate (Table 5). For example, each \$100 of recurrent income in the range from \$0 to \$799 was linked with a decrease in the savings rate of 0.01 percentage points (97-percent confidence). The association is statistically significant, but it is very small.¹⁸

[Table 5 about here]

Each \$100 of recurrent income past \$800 is associated with a decrease in the saving rate of 0.69 percentage points (99-percent confidence). Is this link small or large? If income increased from \$700 to \$900, then the predicted decrease in the savings rate would be 0.70 percentage points (Table 5). This is a large effect, representing 32 percent of the mean savings rate in ADD of 2.2 percent.

Each \$100 of intermittent income was associated with a decrease in the savings rate of 0.12 percentage points (99-percent confidence). Thus, a change from \$0 to \$200 was linked with a decrease in the savings rate of 0.24 percentage points (Table 5). This is a large effect, representing 10 percent of the mean savings rate in ADD.

\$0.10. Once past 40, however, an additional year of age is expected to decrease net IDA savings by \$0.15. The sum of all the variables that make up the spline equals the age of the person, so if a person were 50 years old, the 0-to-40 spline would equal 40, and the 40-or-more spline would equal 10. A 25-year-old would have 25 in the 0-to-40 spline and 0 in the 40-or-more spline. The sum of the means of each spline is the sample mean for the variable, so accordingly average age is 36 years, the sum of the 34 average for the 0-to-40 year spline, and the 3 for the 40-or-more splines (difference in sum due to rounding error). A standard references on splines is Friedman (1991). Turning to interpretation of income variables, separation of income into recurrent and intermittent categories is common in savings studies because the two types of income are predicted to have different effects on saving behavior. For full explanation of independent variables see Schreiner et al. (2001).

¹⁷ To save space, the full results are not presented here. They are presented in greater detail in Schreiner et al. (2001) and the full results are available on request.

¹⁸ We experimented with different breakpoints using non-parametric, locally adaptive regressions, since not having breakpoints yielded no relationship between savings and income. The \$800 break point appeared to fit the data best.

In sum, increases in low levels of recurrent income were not associated with large changes in the savings rate, but increases in higher levels of recurrent income (and increases in intermittent income) were strongly associated with large decreases in the savings rate. This fits the pattern in which increased income does not increase savings levels very much. What could account for this? There are two possible explanations. As detailed above, issues with data and methods likely impart a downward bias on estimates of the link between income and savings. The size of the bias is unknown, so we cannot rule out the possibility that these biases, rather than a real relationship, drive the observed negative correlation between income and the savings rate. Another possible explanation is that institutional characteristics affect savings performance.

INSTITUTIONS AND SAVINGS

Economic models predict that, all else constant, more income increases savings and savings rates. An institutional perspective recognizes that all else is usually not constant and seeks to specify and measure some of the external conditions that might influence savings performance. It is possible that the influence of these external conditions might be stronger than income in predicting savings performance. Existing data provide some limited insight regarding the institutional characteristics of IDAs and their possible effects on IDA saving.

Match Rate

The match rate in IDAs is an *incentive*. Early evidence regarding the effect of match rates on saving is somewhat ambiguous. Cross-sectional survey data from ADD show that 95 percent of IDA participants said that their match rates were adequate for inducing saving (Moore et al., 2001). In response to an open-ended question regarding their experiences in ADD, 23 participants said that the match was one of the most helpful aspects of the IDA program, and one

respondent called the match “the supreme incentive to save” (p. 13). However, 11 respondents criticized the match rate in some way.

In regression analysis, higher match rates are associated with a reduced likelihood of unmatched withdrawals and a reduced risk of program dropout (Schreiner et al., 2001). However, higher match rates were not associated with greater saving (Table 6). The latter finding is consistent with research on 401(k) plans suggesting that match rates beyond 0.25:1 do not seem to encourage saving (Basset, Fleming, & Rodriguez, 1998; Kusko, Poterba, & Wilcox, 1994; Bernheim & Scholz, 1993). There are several possible explanations for this. First, programs may have set higher match rates if they expected their participants to save less, regardless of the match rate. Second, participants may have tried to use all of their match eligibility, regardless of the match rate. Third, if participants are saving toward a particular asset goal (say, \$5,000 for a down payment on a home), then higher match rates reduce the amount that individuals need to save to achieve this goal. Effects of match rates are analyzed in greater detail in Schreiner (2001).

[Table 6 about here]

Match Cap or Monthly Savings Target

The match cap (monthly IDA savings target) can be both an *expectation* and a *limit*. The *monthly savings target* is the amount which, if saved each month and not removed in unmatched withdrawals, would yield net deposits equal to the match cap for a given time period. Across ADD, the average monthly savings target was \$44. In regression analysis, participants with higher savings targets were less likely to make unmatched withdrawals and also less likely to drop out of the IDA program (Schreiner et al. 2001). Those with higher savings targets also saved more in IDAs (Table 6). On average across participants in ADD, AMND is 67 percent of

the target. A \$1 increase in the monthly savings target is linked with an increase in AMND of \$0.36 with 99-percent confidence. A \$10 increase in the target is thus associated with \$3.60 more AMND. Average AMND is \$25.42, so this effect is large.

These findings may indicate that participants translate match caps into monthly IDA saving targets and make a greater effort to save when these expectations are higher. This interpretation would suggest that saving expectations is an important institutional variable. However, there is an alternative explanation. Programs may have created higher saving targets if they expected participants to save more, or lower targets if they expected participants to save less, and indeed we know this occurred in at least some ADD programs (Sherraden et al., 2000).

A different institutional characteristic is the match cap as a limit to saving amount and its censoring effect. As of June 30, 2000, 10 percent of participants had saved up to their match caps. Without these cases, the estimated associations between income and the IDA savings rate shrink (as expected) by 10 to 20 percent. However, even without the censored cases, the negative association between income and savings rate is large and strong.¹⁹ In a more thorough analysis, Schreiner (2001) controls for censoring and finds no relationship between income and AMND (savings amount). Thus, it appears that censoring of saving may not be playing a major role in ADD.

Financial Education

Financial education imparts *information*. The very poor, compared to the less poor, may change their behavior more in response to financial education or to information received from staff or peers. If the very poor have more to learn about how and why they save, then a given level of education or other source of information will have a greater effect on them than on the less poor.

¹⁹ This truncated regression is not a good way to control for censoring (Greene, 1993).

All programs in ADD require financial education.²⁰ Eighty-five percent of the current ADD participants who completed the cross-sectional survey said that financial education classes helped them to save. Some noted that they had learned specific saving strategies (Moore et al., 2001).

IDA saving increased as participants received additional hours of financial education, but only up to 12 hours of general financial education; with additional hours, there was no clear pattern (Table 6). Each additional hour in the range of 1 to 6 hours was associated with a \$1.20 increase in AMND; all else constant, the move from 1 hour to 6 hours would change predicted AMND by \$6.00. The effect of each hour in the range of 7 to 12 hours was \$0.56. The estimates are statistically significant with at least 80-percent confidence. Interestingly, general financial education up to 12 hours was also associated with greater deposit frequency, but the association then levels off (see Clancy, Grinstein-Weiss, & Schreiner, 2001).

For asset-specific financial education (e.g., home ownership counseling for those IDA participants who plan to purchase a home), each hour in the range of 1 to 6 was associated with a statistically significant increase in AMND of \$2.50. Each hour in the range from 7 to 12 was linked with a decrease in AMND of \$1.80 (Table 6). These are large effects. Hours after 12 did not have large, statistically significant effects.

Direct Deposit

Direct deposit is *facilitation*. We would expect that direct deposit would reduce transaction costs and therefore be associated with increased savings. About six percent of non-

²⁰ Financial education is represented with a set of splines. As explained above, for any given participant the sum of the 4 splines is the number of hours of general financial education completed, so, for example, someone with 15 hours would have the 1-to-6 spline equal 6, the 7-to-12 spline equal to 6, and the 13-to-18 spline equal to 3 and the 18 or more spline equal to zero. Taking averages for all variables across all participants, the average value of the 1-to-6 spline was 5.7; almost everyone had at least 6 hours of general financial education. Summing over the averages for all 4 splines, the result is 10.5, meaning that the average participant had completed 10.5 hours of general financial education. Splines allow us to estimate non-linear relationships. We could use squares or cubes, which is the usual technique, but splines can fit the data more precisely.

dropout participants in ADD use direct deposit with their IDAs. (We do not know how many ADD participants could have used direct deposit but decided not to do so.) Contrary to theoretical prediction and previous empirical work on direct deposit and savings, we find no statistically significant relationship between direct deposit and AMND, and in fact the relationship is slightly negative (Table 6). We do not have an explanation for this result. It seems unlikely that, all else constant, direct deposit would not increase savings performance, and much anecdotal discussion on the IDA listserv suggests a positive effect of direct deposit on saving performance. Possibly there is measurement error in this study. Or, it may be that those participants who used direct deposit were for unobserved reasons less able to save from the outset. In any case, more research is needed on this key policy design issue for IDAs.

IDA Program Inputs

IDA program inputs may be a proxy for *facilitation*. Increases in the quantity or quality of program inputs should improve savings outcomes, and qualitative evidence from the evaluation of ADD bears this out. The regression, however, suggests that an additional hour worked by IDA salaried staff per participant per month (or an additional hour from volunteers) was associated with a \$4.20 to \$5.60 decrease in AMND (99-percent confidence, Table 6). An additional hour worked by staff at partner organizations had no statistically significant link with AMND.

Turning to financial inputs, each dollar of IDA program inputs per participant/month in terms of salary expense was associated with an increase of AMND of \$0.67 (99-percent confidence, Table 6). This is a large effect. The question for policy is whether a dollar of administrative expense is worth \$0.67 of deposits. Non-salary expenses had no statistically significant association with AMND.

These patterns present a puzzle. We expected that AMND would increase with more time from staff or with higher expenses. Instead, more time from IDA staff or from volunteers was linked with lower AMND. Only salary *expense* was linked with higher AMND. Several speculative explanations are possible. First, data on inputs (especially from partner organizations) may be measured with error. Second, inputs may be related to participant behavior; if AMND is low, programs may add staff. In fact, for this reason, it is quite common in social research to find greater inputs associated with worse outcomes, e.g., more teaching time might be devoted to students who perform at the lowest levels. The finding that higher salary expense was associated with higher savings suggests that quality of staff (proxied by expense) might matter.

Withdrawal Restrictions

Withdrawal restrictions are *limits*. Over 90 percent of current ADD participants who completed the cross-sectional survey said they liked the rules about withdrawing money from IDAs (Moore et al., 2001). They say they like restrictions for approved uses of IDAs in order to get their match funds. To some extent, these rules keep them from withdrawing money for other purposes. Participants also point to withdrawal restrictions as helpful when friends or family ask for funds; they can say that the IDA savings are not available.²¹ In response to an open-ended question, one respondent said, “Because of the structure and stringent rules for withdrawing money, it gives me more control and allows me to focus on a future goal. It removes the temptation” (p. 14). Moore et al. conclude that many individuals want precommitment

²¹ In this way, restricted funds in IDA accounts may interfere negatively with family and social networks that may play an important economic role among low-income households (Stack, 1974). We have asked about this, but so far do not find much evidence of harm to these networks; 97 percent of IDA participants disagree or strongly disagree that, because of IDAs, they have more problems with family; and 97 percent, more problems with neighbors (Moore et al., 2001).

constraints to help them resist spending temptations and achieve saving and asset goals. This is consistent with behavioral theory.

Unobserved Program-Related Characteristics

A noteworthy but less specific finding regarding institutional effects on savings performance is in the effects of unobserved factors correlated with a given IDA program or site. Although the regression includes a wide range of characteristics, it cannot control for everything. As a second-best response, it controls for possible links between AMND and unobserved factors correlated with a given program or site. Unobserved factors include unmeasured program characteristics (such as the strictness of rule enforcement), participant characteristics (such as future orientation) that may be correlated within a given site, and characteristics beyond programs or participants (such as the local economy) that are particular to a given site.

[Table 7 about here]

The estimate for CAPTC Large-scale is set to zero and is the base of comparison. For example, compared with unobserved factors at CAPTC Large-scale, unobserved factors at Human Solutions were associated with a statistically significant increase in AMND of \$6.90 (Table 9.2). Most comparisons with CAPTC Large-scale are likewise large and statistically significant.²² These estimates suggest that unobserved factors correlated with AMND differ systematically across programs and sites. We do not know what the omitted factors are, nor how much each one matters, but the size of the effects leaves open the possibility that IDA programs vary in unobserved ways that affect savings performance, for example perhaps in the level of commitment (not just hours or salaries) of staff, or the quality (not just quantity) of financial education.

²² We have not tested for the statistical significance of pair-wise comparisons with programs other than CAPTC Large-scale.

CONCLUSIONS

The results reported in this paper pertain to a particular population in an unusual context, a matched-savings program. ADD participants are in the lower end of the income distribution; the typical participant is at the poverty line, and the rest are bunched near the poverty line. IDA programs target certain people, mostly the “working poor,” and participants are self-selected. Overall, conclusions must be tentative, but we can offer a few observations on income and saving in IDAs and on how the study results relate to larger issues in saving theory and policy.

What is the relationship between income and savings in IDAs? (Again we emphasize that these findings do not speak to total household savings or household savings rates, which we do not measure in this study.) Regression results in this paper pertain only to those who did not drop out. Other variables held constant, more income did not increase overall IDA savings for participants in ADD. There was a very small increase in savings related to intermittent income, as theory would predict, but this effect is too small to be noteworthy in this study. The basic finding is that people saved about the same amount regardless of income, other characteristics in the regression constant. Furthermore, more income was strongly associated with large decreases in the IDA savings rate. These findings are contrary to the predictions of economic theory.

It may be that institutional features overpowered income factors in ADD, though we have only suggestive evidence. If institutions do explain at least part of the results, then the strongest influences were possibly the monthly savings target and overall match cap, and the possible transformation of these into individual saving goals, which in turn may have been reinforced by staff and peers. Regarding the possibility of savings goals and reinforcement, we do not have quantitative evidence of these psychological and social processes, and more research is needed in these areas.

Given results in this study, institutional effects in total may be stronger for the very poor than for the less-poor. The institutional structure of IDAs may cause people with less income to save a larger share of their income. If very poor participants lived in a more deprived institutional environment before IDAs, then the institution of IDAs may have a greater effect on their savings than on those who are not as poor. This seems plausible, and evidence is suggestive, but for now it is conjecture.

The broad message is that, all else constant, less income need not be associated with less IDA savings, and less income may be associated with a higher IDA savings rate. If this pattern continues to hold in IDA research, it would lend support for expanded community development strategies based on subsidized and/or assisted saving. It would also lend support for inclusion and progressivity in public policies that aim to build assets (Sherraden, 1991, 2001a). Such policies could range from universal children's accounts, as proposed by the Labour Party in the United Kingdom (H.M. Treasury, 2001; Sherraden 2001b), to any individual account policy for adults, including those that might be associated with Social Security (Sherraden, 2001c, 2001d).

References

- Basset, W.F., Fleming, M.J., & Rodriguez, A.P. (1998). How workers use 401(k) plans: The participation, contribution, and withdrawal decisions. *National Tax Journal*, 51, (2), 263-289.
- Bayer, P.J., Bernheim, B.D., & Scholz, J.K. (1996). *The effects of financial education in the workplace: Evidence from a survey of employers* (working paper no. 5655). Cambridge, MA: National Bureau of Economic Research.
- Bernheim, B.D. (1996). Rethinking saving incentives. In A. Auerbach (Ed.), *Fiscal policy: Lessons from economic research* (pp. 259-311). Cambridge, MA: MIT Press.
- Bernheim, B.D., & Garrett, D.M. (1996). *The determinants and consequences of financial education in the workplace: Evidence from a survey of households* (Working Paper No. 5667). Cambridge, MA: National Bureau of Economic Research.
- Bernheim, B.D., Garrett, D.M., & Maki, D.M. (2001). Education and saving: The long-term effects of high school financial curriculum mandates. *Journal of Public Economics*, 80, (3), 435-465.
- Bernheim, B.D., & Scholz, J.K. (1993). Private saving and public policy. *Tax Policy and the Economy*, 7, 73-110.
- Beverly, S.G. (1997). How can the poor save? Theory and evidence from on saving in low-income households (working paper no. 97-3). St. Louis: Washington University, Center for Social Development.
- Beverly, S.G., & Sherraden, M. (1999). Institutional determinants of saving: Implications for low-income households and public policy. *Journal of Socio-economics*, 28, 457-473.

- Burkhauser, R.V., & Weathers II, R.R. (2001). Access to wealth among older workers in the 1990s and how it is distributed: Data from the Health and Retirement Study. In T.M. Shapiro & E.N. Wolff (Eds.), *Assets for the poor: The benefits and mechanisms of spreading asset ownership* (pp. 74-131). New York: Russell Sage Foundation.
- Bunting, D. (1991). Savings and the distribution of income. *Journal of Post Keynesian Economics*, 14, (1), 3-22.
- Cagan, P. (1965). *The effect of pension plans on aggregate savings: Evidence from a sample survey* (occasional paper no. 95). New York: National Bureau of Economic Research.
- Carney, S. & Gale, W. (2001). Asset accumulation among low-income households. In T. Shapiro and E. Wolff (Ed.), *Asset for the poor: The benefits of spreading asset ownership* (pp. 165-205). New York: Russell Sage Foundation.
- Carroll, C.D. (1997). Buffer-stock saving and the life cycle/permanent income hypothesis. *Quarterly Journal of Economics*, 112, (1), 1-55.
- Carroll, C.D., & Samwick, A.A. (1997). The nature of precautionary wealth. *Journal of Monetary Economics*, 40, (1), 41-71.
- Carroll, C.D., & Summers, L.H. (1987). Why have private savings rates in the United States and Canada diverged? *Journal of Monetary Economics*, 20, 249-279.
- Caskey, J.P. (1994). *Fringe banking: Check-cashing outlets, pawnshops, and the poor*. New York: Russell Sage Foundation.
- Clancy, M., Grinstein-Weiss, M., & Schreiner, M. (2001). Financial education and savings outcomes in individual development accounts (working paper 01-2). St. Louis: Washington University, Center for Social Development.

- Cohen, S. (1994). Consumer socialization: Children's saving and spending. *Childhood Education, 70*, (4), 244-246.
- Davern, M.E., & Fisher, P.J. (2001). *Household net worth and asset ownership: 1995* (U.S. Census Bureau Current Population Reports P70-71). Washington, DC: U.S. Government Printing Office.
- Deaton, A. (1997). The analysis of household surveys: A microeconomic approach to development policy. Baltimore: Johns Hopkins University Press.
- Duesenberry, J.S. (1949). *Income, saving and the theory of consumer behavior*. Cambridge, MA: Harvard University Press.
- Edin, K. & Lein, L. (1997). *Making ends meet: How single mothers survive welfare and low-wage work*. New York: Russell Sage Foundation.
- Engen, E.M., Gale, W., & Scholz, J. . (1996). The illusory effects of saving incentives on saving. *Journal of Economic Perspectives, 10*, (4), 113-138.
- Feldstein, M. (1995). College scholarship rules and private saving. *American Economic Review, 85*, (3), 552-566.
- Friedman, J.H. (1991). Multivariate adaptive regression splines", *Annals of Statistics, 19*, March, 1-141.
- Friedman, M. (1957). *A theory of the consumption function* (National Bureau of Economic Research General Series No. 63). Princeton, NJ: Princeton University Press.
- Furnham, A. (1985). Why do people save? Attitudes to, and habits of, saving money in Britain. *Journal of Applied Social Psychology, 15*, (4), 354-373.
- Gordon, W. (1980). *Institutional economics: The changing system*. Austin, TX: University of Austin Press.

- H.M. Treasury (2001). *Delivering saving and assets*, The modernization of Britain's tax and benefit system (number nine). London: H.M. Treasury.
- Howard, C. (1997). *The hidden welfare state: Tax expenditures and social policy in the United States*. Princeton: Princeton University Press.
- Hubbard, R.G., & Skinner, J.S. (1996). Assessing the effectiveness of saving incentives. *Journal of Economic Perspectives*, 10, (4), 73-90.
- Hubbard, R.G., Skinner, J., & Zeldes, S.P. (1994). The importance of precautionary motives in explaining individual and aggregate saving. *Carnegie-Rochester Conference Series on Public Policy*, 40, 59-125.
- Hubbard, R.G., Skinner, J., & Zeldes, S.P. (1995). Precautionary saving and social insurance. *Journal of Political Economy*, 103, (2), 360-399.
- Johnson, E., Hinterlong, J.; & Sherraden, M.(2001). Strategies for creating MIS technology to improve social work practice and research. *Journal of Technology for the Human Services*, 18, (3/4), 5-22.
- Joulfaian, D., & Richardson, D. (2001). Who takes advantage of tax-deferred savings programs? Evidence from federal income tax data. *National Tax Journal*, 54, (3), 669-688.
- Katona, G. (1975). *Psychological economics*. New York: Elsevier.
- Kennickell, A.B., Starr-McCluer, M., & Sunden, A.E. (1997). Saving and financial planning: Some findings from a focus group. *Financial Counseling and Planning*, 8, (1), 1-8.
- Kusko, A.L., Porterba, J.M., & Wilcox, D.W. (1994). Employee decisions with respect to 401(k) plans: Evidence from individual level data (working paper no. 4635). Cambridge, MA; National Bureau of Economic Research.

- Madrian, B. C., & Shea, D. F. (2000). *The power of suggestion: Inertia in 401(k) participation and savings behavior* (working paper no. 7682). Cambridge, MA: National Bureau of Economic Research.
- Maital, S. & Maital, S.L. (1994). Is the future what it used to be? A behavioral theory of the decline of saving in the West. *Journal of Socio-Economics*, 23, (1/2), 1-32.
- Maital, S. (1986). Prometheus rebound: On welfare-improving constraints. *Eastern Economic Journal*, 12, (3), 337-344.
- Modigliani, F. & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. In K. K. Kurihara (Ed.), *Post-Keynesian economics* (pp. 388-436). New Brunswick, NJ: Rutgers University Press.
- Moore, A., Beverly, S., Schreiner, M., Sherraden, M., Lombe, M., Cho, E. Y. N., Johnson, L. & Vonderlack, R. (2001). *Saving, IDA programs, and effects of IDAs: A survey of participants*. St. Louis: Washington University, Center for Social Development.
- Neale, W. C. (1987). Institutions. *Journal of Economic Issues*, 21, (3), 1177-1206.
- Neumark, D. (1995). Are rising earnings profiles a forced-savings mechanism? *The Economic Journal*, 105, 95-106.
- Poterba, J. M., Venti, S. F. & Wise, D. A. (1996). How retirement saving programs increase saving. *Journal of Economic Perspectives*, 10, (4), 91-112.
- Powers, E. T. (1998). Does means-testing welfare discourage saving? Evidence from a change in AFDC policy in the United States. *Journal of Public Economics*, 68, 33-53.
- Schreiner, M. (2001). Match rates and savings: Evidence from Individual Development Accounts (working paper 01-6). St. Louis: Washington University, Center for Social Development.

- Schreiner, M., & Sherraden, M. (this volume). Drop-out from Individual Development Accounts: Prediction and prevention.
- Schreiner, M., Sherraden, M., Clancy, M., Johnson, L., Curley, J., Grinstein-Weiss, M., Zhan, M., & Beverly, S. (2001). *Savings and asset accumulation in IDAs: Downpayments on the American Dream Policy Demonstration*. St. Louis, MO: Washington University, Center for Social Development.
- Shefrin, H.M. & Thaler, R.H. (1988). The behavioral life-cycle hypothesis. *Economic Inquiry*, 26, 609-643.
- Sherraden, M. (1991). *Assets and the poor: A new American welfare policy*. Armonk, NY: M.E. Sharpe, Inc.
- Sherraden, M. (2001a). Asset building policy and programs for the poor. In T. M. Shapiro & E.N. Wolff (Eds.), *Assets for the poor: Benefits and mechanisms of spreading asset ownership* (302-323). New York: Russell Sage Foundation.
- Sherraden, M. (2001b). *Toward a universal and progressive asset-based domestic policy*, speech at the annual meeting of the Labour Party, United Kingdom, Brighton, October 2.
- Sherraden, M. (2001c). *Assets and the poor: Implications for individual accounts in Social Security*, testimony before the President's Commission to Strengthen Social Security, Washington, October 18.
- Sherraden, M. (2001d.). Individual accounts in social security: Can they be progressive? paper presented at an international symposium, *The uncertain future of social security*, University of California, Berkeley, December 5-6.

- Sherraden, M., Johnson, L., Clancy, M., Beverly, S., Schreiner, M., Zhan, M. & Curley, J. (2000). *Saving patterns in IDA programs*. St. Louis: Washington University, Center for Social Development.
- Summers, L. & Carroll, C. (1987). Why is U.S. national saving so low? *Brookings Papers on Economic Activity*, 2, 607-642.
- Wolff, E.N. (2001). Recent trends in wealth ownership, from 1983 to 1998. In T. M. Shapiro & E.N. Wolff (Eds.), *Assets for the poor: Benefits and mechanisms of spreading asset ownership* (pp. 34-73). New York: Russell Sage Foundation.
- Ziliak, J. P. (1999). *Income transfers and assets of the poor* (discussion paper no. 1202-99). Madison, WI: University of Wisconsin, Institute for Research on Poverty.

Table 1. Income Distribution of ADD Participants

Income	N	Mean (\$)	Median (\$)	% of participants with a source of income	Distribution of total income by source (%)
Wages	2,378	1,078	1,034	78	67
Government Benefits	2,378	133	0	26	14
Pensions	2,378	11	0	2	1
Investments	2,377	4	0	1	0
All Recurrent Sources	2,377	1,229	1,199	90	82
Self-employment	2,378	132	0	16	9
Child support	2,378	50	0	15	4
Gifts	2,378	17	0	5	1
Other sources	2,378	55	0	10	4
All Intermittent Income	2,378	253	0	38	18
Total Income	2,337	1,474	1,340	99	100
Income/Poverty	2,337	1.13	1.04	--	--

**Table 2. Average Monthly Net Deposit
by Decile of Income**

Income Deciles	N	Mean (\$)	Median (\$)	Min. (\$)	Max. (\$)
Missing	41	34.28	31.03	0.00	150.00
\$0 to \$559	233	16.37	6.67	0.00	122.74
\$560 to \$799	234	22.48	14.91	-0.22	250.00
\$800 to \$995	234	21.36	18.06	0.00	125.56
\$996 to \$1,199	230	22.11	15.29	0.00	125.50
\$1,200 to \$1,326	235	23.00	15.14	0.00	187.50
\$1,327 to \$1,515	236	25.08	15.00	0.00	174.55
\$1,516 to \$1,759	233	28.01	21.33	0.00	143.90
\$1,760 to \$1,999	231	26.12	19.01	0.00	142.86
\$2,000 to \$2,459	230	30.92	21.89	0.00	213.33
\$2,460 to \$6,628	241	36.89	30.00	0.00	250.00
All ADD	2,378	25.42	17.96	-0.22	250.00

Table 3. Savings Rate (Average Monthly Net Deposits as a Percentage of Monthly Income) by Decile of Income

Income Deciles	N	Mean (%)	Median (%)	Min. (%)	Max. (%)
Missing	118	N/A	N/A	N/A	N/A
\$0 to \$559	217	5.6	2.3	0.0	107
\$560 to \$799	234	3.4	2.4	0.0	36
\$800 to \$995	234	2.4	2.0	0.0	15
\$996 to \$1,199	230	2.1	1.5	0.0	13
\$1,200 to \$1,326	235	1.8	1.2	0.0	16
\$1,327 to \$1,515	236	1.7	1.1	0.0	12
\$1,516 to \$1,759	233	1.7	1.3	0.0	8
\$1,760 to \$1,999	231	1.4	1.0	0.0	8
\$2,000 to \$2,459	230	1.4	1.0	0.0	9
\$2,460 to \$6,628	241	1.2	0.9	0.0	7
All ADD	2,321	2.2	1.3	0.0	107

Table 4. Regression: Income and Net Deposits			
	Mean*	Change in \$	p-value
Household income (\$100/month)			
Recurrent income (spline)	11.5		
0 to \$799	4.9	-0.01	0.94
\$800 or more	6.6	0.24	0.38
Intermittent income	2.3	0.32	0.04
* Means taken over only non-missing observations.			

Table 5. Regression: Income and Savings Rate (Net Deposits/Income)

	Mean*	Change % pts	p-value
Household income (\$100/month)			
Recurrent income (spline)	12.0		
0 to \$799	5.5	-0.01	0.03
\$800 or more	6.6	-0.69	0.01
Intermittent income	2.3	-0.12	0.01
* Means taken over only non-missing observations.			

Table 6. Regression: Institutional Characteristics and Net Deposits

Institutional Characteristics	Mean*	Change in \$	p-value
Match rate			
1:1	0.26	0.8	0.83
2:1	0.51	1.1	0.77
3:1	0.12	2.4	0.48
4:1 to 7:1	0.06		
Match cap (monthly savings target)	44	0.36	0.01
Hours of financial education	21.6		
General (spline)	10.5		
None	0.08	6.7	0.12
1 to 6	5.7	1.2	0.08
7 to 12	3.5	0.56	0.10
13 to 18	0.8	-0.70	0.14
19 or more	0.4	0.54	0.14
Asset-specific (spline)	11.1		
1 to 6	4.1	2.5	0.01
7 to 12	1.8	-1.8	0.01
13 to 18	0.9	0.29	0.74
19 or more	4.4	-0.12	0.20
Use of Direct Deposit	0.06	-1.9	0.39
Program inputs per participant/month			
Salaried IDA staff (hours)	2.7	-5.6	0.01
Partner staff (hours)	0.31	0.45	0.85
Volunteer staff (hours)	0.84	-4.2	0.01
Salary expense (\$)	44	0.67	0.01
Non-salary expense (\$)	22	-0.10	0.35
* Means taken over only non-missing observations.			

Table 7. Regression: Unobserved Program-Related Factors and Net Deposits*

Program or program/site dummies*	Mean	Change in \$	p-value
CVCAC (ADD/AFIA)	0.03	-21	0.01
CAPTC Small-scale	0.07	-3	0.49
MACED	0.03	-1.3	0.91
CAPTC Large-scale	0.23		
Shorebank	0.10	6.8	0.16
Human Solutions	0.05	6.9	0.10
WSEP	0.04	9.1	0.39
WSEP (ADD/AFIA)	0.04	9.3	0.19
ADVOCAP	0.03	10	0.15
Near Eastside	0.06	14	0.01
CVCAC	0.07	15	0.01
CAAB	0.03	15	0.20
CTMHA	0.04	16	0.01
Alternatives FCU	0.04	20	0.01
EBALDC	0.11	21	0.05
Heart of America	0.04	25	0.01
CAAB (ADD/AFIA)	0.03	30	0.01

* Program names and description in Schreiner et al. (2001)