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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 savings outcomes. Following this, we discuss results from regression analyses on savings outcomes. We find that savings amount did not increase with income and that the 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.*

What is the relationship between income and savings performance in a program of Individual Development Accounts (IDAs)?[1] IDAs are saving programs targeted to the poor, with subsidies in the form of matching fund upon withdrawal (Sherraden, 1988, 1991). Permitted uses of IDA balances vary across IDA programs but typically include home ownership, post secondary education, and microenterprise.[2] This is a study of IDAs in the "American Dream Demonstration" (ADD), the first large test of IDAs as a community development and public policy tool.[3] We find that net savings amount is not associated with income, and that saving rate is negatively associated with income. In part, these results may be due to the influence of institutional characteristics such as the monthly savings target, financial education, and withdrawal restrictions.

THEORIES OF SAVING

There is a large but inconclusive body of work on saving theory and research (Beverly, 1997; Carney & Gale, 2001). Neoclassical theories represent the core of the discussion. The two most well known are the life cycle hypothesis (Modigliani & Brumberg, 1954) and the permanent income hypothesis (Friedman, 1957). These theories assume that individuals and households are focused on expected future income and long-term consumption patterns. In recent years, some economists have proposed additions to the life cycle hypothesis and the permanent income hypothesis, the so-called "buffer-stock" models of saving (e.g., Carroll, 1997; Carroll & Samwick, 1997; Deaton, 1991; Ziliak, 1999). These models emphasize a precautionary motive for saving, particularly for younger households and for households facing greater income uncertainty. Overall, economic theories suppose that people are forward looking and concerned about consumption patterns, that preferences are fixed, and that people are all-knowing and rational.

Variations on the standard economic theories include a wide range of behavioral, psychological and sociological theories. Behavioral theories emphasize financial management strategies and self-imposed incentives and constraints (e.g., Shefrin & Thaler, 1988; Thaler, 1990, 1994). Although behavioral theories are partly rooted in economics, they modify conventional economic models in two ways. First, behavioral theories do not assume that income or wealth is fungible. Instead, Shefrin & Thaler (1988) propose that individuals use systems of mental accounts and that the propensity to spend varies across accounts. For example, individuals may code resources as current income, current assets, or future income. They are expected to spend almost all resources coded as current income, very little future income, and some (but not all) current assets. Second, behavioral theories do not assume that individuals have perfect knowledge or

[1] 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).

[2] There are perhaps 400 operating IDA programs in the United States at this time; most states have some type of IDA policy; IDAs were included as a state option in the 1996 "welfare reform" law; and a federal demonstration of IDAs, the Assets for Independence program, was enacted in 1998.

[3] 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 demonstration is four years in length (1997-2001).

behave in perfectly rational ways. Instead, these theories emphasize that individuals sometimes have trouble resisting temptations to spend. Therefore, individuals may benefit from creating their own behavioral incentives and constraints (Shefrin & Thaler, 1988; Thaler, 1994). These rules may be external, although individuals may voluntarily place themselves under such restrictions, e.g., a Christmas Club saving account, or the rules may be self-imposed , e.g., "rules-of-thumb," such as avoiding borrowing or restricting borrowing to specific purchases. With these rules in mind, household saving is seen at least in part as "the result of the successful and sophisticated imposition of welfare-improving, self-imposed constraints on spending" (Maital & Maital, 1994, p. 7). Behavioral theories imply that saving and asset accumulation are likely to increase when mechanisms of contractual saving (see Katona, 1975, pp. 230-233) or precommitment constraints are available. These mechanisms make it difficult to choose current pleasure at the expense of future pleasure (Maital, 1986; Maital & Maital, 1994; Shefrin & Thaler, 1988). A common precommitment constraint is payroll deduction. When pension plan contributions, for example, are deducted from an individual's paycheck, temptations to spend that money are virtually eliminated, and the participant no longer has to make, on a monthly or biweekly basis, a conscious decision to postpone consumption. Her "willingness" to save is in effect predetermined, and transaction costs are minimized. Variations on precommitment constraints include over-withholding of income tax (Neumark, 1995) and even mortgage-financed home purchases (Maital & Maital, 1994).[4]

Psychological and sociological theories assume that consumer preferences are not fixed but rather change with economic and social stimuli (e.g., Duesenberry, 1949; Katona, 1975; Cohen, 1994). In fact, psychological and sociological theories of saving explicitly seek to explain saving-related preferences, aspirations, and expectations. The most well-known economic psychologist, George Katona (1951, 1975), has noted that saving is a function of two sets of factors, ability to save and willingness to save. As in standard economic theory, the emphasis on ability to save acknowledges that some individuals, because of limited economic resources or special consumption needs, find it more difficult to defer consumption than others. At the same time, those individuals who can postpone consumption still must *choose* to do so, a decision that requires some degree of willpower (in contrast to standard economic theory, where choice is not required because people figure out the optimal plan and then implement it). Psychological theory focuses primarily on this choice. Other psychological and sociological propositions consider the effects of families (Cohen, 1994; Lusardi, 2000), peers (Duesenberry, 1949), and past saving experiences (Furnham, 1985; Katona, 1975) on consumption patterns, saving-related beliefs, and aspirations for saving.

Turning to empirical evidence, life cycle and permanent income models have mixed support, but they especially fail to explain patterns of asset accumulation in low-income households, which are typically low or negative. Among the other theories, very few behavioral, psychological, or sociological propositions have been rigorously tested. Overall, evidence is mixed and incomplete; no single perspective is at this time clearly supported.

[4] Mortgage-financed home purchases facilitate saving because mortgage payments are a contractual obligation and because the part of each payment that goes toward principal increases the buyer's home equity. In fact, Maital and Maital (1994) suggest that the desire for this precommitment mechanism is as strong a motivation for mortgage-financed home purchases as the incentive created by the tax-deductibility of interest payments.

Can Low Income People Save in IDAs?

Individuals may 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 social network members. In this paper, we look only at financial assets saved in IDAs. Discussions of IDAs in policy and practice often assume that very poor people cannot save because their incomes are too low. Do theory and evidence support this assumption?

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, 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. The poor saved less in the past; if not, then they would not be poor. But they may or may not have saved at higher rates, relative to resources available in excess of subsistence requirements. 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 that they could not buy enough food for the healthy development of their children. Likewise, 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 IDAs they have to give up food or necessities (Moore et al, 2001). Overall, however, we do not see much evidence of hardship caused by IDA saving. Also, 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.[5]

The Role of Institutions

Each of the theories described above calls attention to institutional characteristics that are expected to affect saving and asset accumulation. Neoclassical economic theories emphasize the role of institutions that affect the economic costs and benefits of saving (e.g., markets and public policies). Psychological and sociological theories consider institutions that affect an individual's understanding or perceptions of economic costs and benefits, that change non-economic costs and benefits, and/or that shape preferences (e.g., peers and family members). Behavioral theories highlight the role of institutions that allow *individuals* to modify the costs and benefits of saving by creating their own incentives and constraints (e.g., payroll deduction, saving clubs, and the option to over-withhold income taxes). By integrating these theoretical perspectives, while emphasizing the role of institutions, it may be possible to develop a theory that more accurately explains saving and asset accumulation in the general population and in the low-income population.

An institutional perspective suggests that external factors other than income and preferences may influence saving behavior 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). 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 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*

[5] The role of choice is fundamental. As a policy principle, if the rich have subsidies like 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.

the participant, as in automatic payroll deduction. 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. Taking the case in point, 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, most institutional aspects of IDAs are expected to increase savings, perhaps more so for the poorest, though limits may censor the savings of the not-so-poor.

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), 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.

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 point 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 when they become adults.

[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.

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 of some IDA participants in ADD that they view the match cap as a monthly target savings amount, and that staff and peer often encourage them to do so. Some IDA participants state directly that they are trying to fulfill these expectations. A 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.

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

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 on savings play a censoring role, though better studies of censoring effects in saving policies and programs are needed

The overall theoretical perspective underlying IDAs is that institutional factors are important in determining saving behavior. If the six institutional constructs discussed above 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 of research is the relative importance of income and institutional factors for savings in IDAs, especially for the very poor. The current data do not yield definitive answers, but we can shed some light on the questions.

IDA PROGRAMS AND PARTICIPANTS

Programs

IDAs operate in community-based organizations in cooperation with financial institutions (a few IDA programs are located in 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 most common. Regarding funding partners, 14 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 saving and loan, 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. As reported earlier, these organizations represent a wide range of community development, social service, financial service, housing, and other organizations, all of which have a community development or anti-poverty mission. 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 (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.

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 yet 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 measured with error and are underreported. Moreover, social research often finds

[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.

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

that very poor people understate their income more than less-poor people. In ADD, the very poor cannot proportionately understate IDA savings because MIS IDA tracks savings accurately. Thus, savings rates for the poorest may be overstated.

Several specific sources of measurement error are 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, IDAs are means-tested on income, and participants at enrollment may have believed that they had incentives to understate their income. 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. Thus, such monthly data probably has more variation than would annual data. Variation in income may also be especially 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. Fifth, 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.

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 savings rate in terms of income at enrollment is higher than the savings rate in terms of average income in all months of participation. The economy has been good during the study period, so this effect might matter for some people whose incomes unexpectedly increased. Second, the match cap may hide links between income and savings (or savings rates) because it constrains observed savings for high savers.

Together, the above biases 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.[11] 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 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 most of the elderly poor do not receive pension benefits,[12] and that the poor in general are unlikely to hold investments that generate income.

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, which is much higher than that of the overall population, probably results from 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, IDAs probably attract entrepreneurial people, in part because microenterprise is a matchable use. 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 people, it was half of total income).[13] About 15 percent of participants received child support (42 percent of all participants are single females with children). About five percent received income

[11] These data come from the June 30, 2000 record in MIS IDA, not the at-enrollment record.
[12] Of 16 people aged 65 or more in ADD, 5 reported income from pensions.
[13] This income is "intermittent" because it is highly variable, even for the full-time self-employed.

from gifts, and 10 percent had income from other sources. Together, these last three sources were 9 percent of total income (Table 1).

Savings Outcomes by Income

In this section we look at relationships between income (for decile groups) and four savings outcomes: average monthly net deposits, 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 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). In this simple tabulation, not controlling for other factors, savings seem to increase with income.

Savings rate. *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 group to 1.4 percent for the ninth). This pattern reflects the small increase in AMND associated with large changes in income (see Table 2).

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 groups.

Deposit frequency. *Deposit frequency* is the share of months with a 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. In another paper, we estimate the association between income on dropout (Schreiner & Sherraden, this volume). In brief, other variables in the model constant, income was not associated with the probability of dropout. Less poor participants in ADD were just as likely to dropout as very poor participants. Whatever factors explain dropout—whether hardship, loss of interest, lack of discipline, and being kicked out for poor performance—they were not correlated with income.

In this paper, 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). This is a small effect.

Next, we estimate the association between income and the savings rate (AMND/monthly income), holding constant a wide range of program and participant characteristics.[14] 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.

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.

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

[14] 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.

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 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 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 (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 discourage unmatched withdrawals and reduce the 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, & Rodrigues, 1998; Kusko, Poterba, & Wilcox, 1994; Bernheim & Scholz, 1993). There are several possible explanations. 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.

Match Cap or Monthly Savings Target

The match cap (monthly 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 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 saving targets and try harder to save when these expectations are higher. This interpretation would seem to suggest that saving expectations is an important institutional variable. However, there are two alternative explanations. First, some participants may have wanted to save more than the match cap, and therefore saved more when match caps were higher but not because their savings "goals" had changed. Second, programs may have created higher saving targets if they expected participants to save more (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 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.[15] 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.

All programs in ADD require financial education. Eighty-five percent of the current ADD participants who completed the cross-sectional survey said that financial education classes helped them to save. In response to an open-ended item regarding their experiences in the IDA programs, 170 participants said that IDA classes were helpful, and some noted that they had learned specific saving strategies in these classes. However, 20 respondents said the classes were remedial or boring (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 (Figure 1). Interestingly, general financial education up to 12 hours was also associated with greater deposit frequency, but then levels off (Figure 2; see Clancy, Grinstein-Weiss, & Schreiner, 2001).

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

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-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. It may be that those participants who used direct deposit were for unobserved reasons less able to save from the outset.

Program Inputs

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

Unobserved Program-Related Characterisitcs

A noteworthy but much less specific finding regarding institutional effects on savings performance is in the effects of unobserved factors correlated with a given 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 program characteristics (such as the strictness of rule enforcement), participant characteristics (such as future orientation), and characteristics beyond programs or participants (such as the local economy).

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.[17] These estimates suggest that unobserved factors correlated with AMND differ systematically across programs and sites. We do not know the omitted factors 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.

CONCLUSIONS

The results reported in this paper pertain to a particular population in an unusual context, a matched-savings program, and only to those who did not drop out. 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,"

[16] 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).

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

and participants are self-selected. Overall, conclusions must be tentative, but we can offer a few observations on income and saving in ADD 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? All else constant, more income did not increase savings for participants in ADD. Furthermore, more income was strongly associated with large decreases in the savings rate.

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 expectations embedded in a monthly savings target, the transformation of the match cap into a goal, and reinforcement by staff and peers. The factors are economic, psychological, and social, and their effects may be stronger for the very poor than for the less-poor. All of these factors probably are at work, but the data cannot disentangle them.

Overall, the institutional structure of IDAs may cause people with less income to save a larger share of their income. In general, if 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 others. 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 savings, and less income may be associated with a higher 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).

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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)

Figure 1 Effect of Financial Education on AMND

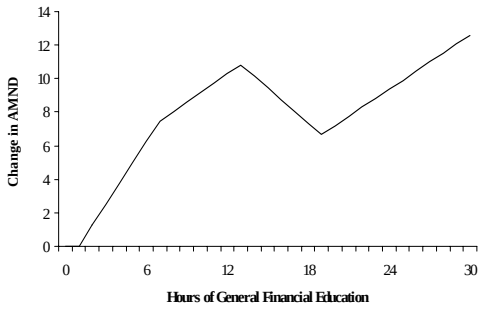

Figure 2 Effect of Financial Education on Deposit Frequency