Savings and Asset Accumulation in Individual Development Accounts

Downpayments on the American Dream Policy Demonstration

A National Demonstration of Individual Development Accounts

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Preface and Acknowledgements

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To our knowledge, this is the first time that software has been created and used to track all participants in a policy demonstration. This has required large investments of time and resources to create and upgrade the software, provide support, facilitate data collection, make the data as accurate as possible, and undertake analysis. A large research team has made this possible, and every member of the team undertook multiple roles that cannot be fully acknowledged here. I am particularly grateful to Mark Schreiner, who led the analysis and writing; Margaret Clancy, who led the development of quality-control software, worked with the programs, and was in charge of data quality; Lissa Johnson, who led in the creation of MIS IDA and who manages the overall ADD evaluation; and Suzanne Fragale, who edited and formatted the final report.

Previous ADD reports have informed developments in federal and state policy for IDAs and other progressive savings strategies. Documentation of the simple fact that some poor people can save in IDAs has been remarkably important for policy purposes. However, many other key research questions are more complex, and often we are unable to answer them with much confidence. In this report, we are pushing forward toward these questions. The report begins to articulate the key questions better, sheds light toward possible answers, and emphasizes what we do not yet know. Hopefully future research in ADD and elsewhere can gradually fill in the gaps.

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Executive Summary

Long-term improvement in well-being requires asset accumulation. While saving is not easy for anyone, it is more difficult for the poor because they have few resources relative to subsistence requirements, because they lack access to some public-policy mechanisms that subsidize saving, and because scarce resources and restricted access may push saving out of their world view.

Individual Development Accounts (IDAs) are a new policy proposal designed to address these constraints and to improve access to savings institutions for the poor. Withdrawals of deposits by the poor in IDAs are matched if used for home ownership, post-secondary education, or microenterprise. Participants also receive financial education and support from IDA staff.

Do IDAs work? Data from the American Dream Demonstration (ADD) suggests that the poor can save and accumulate assets in IDAs:

- Average monthly net deposits per participant were $25.42.
- The average participant saved 67 percent of the monthly savings target.
- The average participant made a deposit in 7 of 12 months.
- With an average match rate of 2:1, participants accumulated about $900 per year in IDAs.

The American Dream Demonstration

ADD is a demonstration of IDAs in 14 programs across the United States. It is scheduled to run for four years (1997-2001), with two more years of evaluation through 2003.

The Corporation for Enterprise Development (CFED) in Washington, D.C., designed ADD and guides it. The Center for Social Development (CSD) at Washington University in St. Louis designed the evaluation.

The evaluation of ADD is the first major study of IDAs. The *Startup Evaluation Report* (Sherraden *et al*., 1999), monitored the start-up period through June 30, 1998. *Saving Patterns in IDA Programs* (Sherraden *et al*., 2000) covered programs, participants, and saving patterns through June 30, 1999. This report discusses savings and asset accumulation through June 30, 2000. A final monitoring report will cover ADD through December 31, 2001.

Data come from the Management Information System for Individual Development Accounts (MIS IDA), a software package created and supported by CSD. MIS IDA offers tools for program management and evaluation (Johnson, Hinterlong, and Sherraden, 2000). Data in MIS IDA were collected by program staff and may be the best ever assembled on high-frequency saving by the poor. In particular, records of cash flows in IDAs come from bank statements and are very accurate. The report notes carefully possible effects of weaknesses in the data.

A Theory of "Asset Effects"

IDAs aim to do more than just transfer resources to the poor. Of course, resources are good to have, if only because they can be converted into consumption. IDAs, however, expect that its transfers will be saved rather than consumed. But standard welfare transfers can also be saved. How are IDAs different?

This report develops Sherraden's (1991) proposed answer in terms of institutional theory. IDAs are packaged in an institutional structure that explicitly asks and expects participants to save their transfers in forms (such as homes, human capital, or business assets) unlikely to be quickly consumed. In contrast, standard welfare is designed to support consumption.

The institutional package matters because people are not the rational, omniscient beings assumed in economic theory. People are subject to suggestion, and they respond to patterns of choices worn smooth by public policy because that takes less effort than to imagine choices and then to weigh possible chances of consequences.

Institutional theory suggests that the structure of IDAs encourages the poor to see saving as an option with positive consequences:

- The existence of IDAs forges a social pattern as it sends the message that the poor can save.
- Matches increase the return on savings, increase asset accumulation from given savings, and attract people to the program.
- IDAs are linked to financial education that provides knowledge of how to save.
- The match cap becomes a goal in the minds of participants.
- Monthly statements give feedback and show progress toward goals. Furthermore, program staff and peers provide informal encouragement. The focus on success makes saving easier.
- IDA programs ask for monthly deposits. This encourages saving to become a habit.
- IDAs give poor people access to a way to commit to save.
- Through budgets, goals, and plans, IDAs focus on the future and increase future orientation.
- IDAs point out goals (such as home ownership or post-secondary education) that people might not see (or see as worthwhile) on their own.
- Informal discouragement of unmatched withdrawals helps to curb dissaving.

Sherraden (1991) introduced the concept of *asset effects*, defined as the impacts of ownership. Humans are forward-looking, and current well-being depends in part on expected future well-being. People with more assets in the present expect to have more resources in the future. Thus—for purely economic reasons—they expect to be happier. "Asset effects" occur when

ownership improves expected future well-being and thus, for psychological reasons, improves current well-being. Not only do owners think differently, but others also treat them differently. The social and political effects of ownership may matter even more than the individual effects.

Participation in ADD

Enrollment. A *participant* is defined as someone who enrolled in ADD and who had an account statement in MIS IDA. As of June 30, 2000, ADD had 2,378 participants in 14 IDA programs.

Graduation. About 13 percent of participants had taken a matched withdrawal. A fourth of these "graduated" and left the program, and three-fourths are still active.

Exit. About 16 percent of participants had exited without a matched withdrawal. The cumulative risk of exit in the first 12 months was 11 percent, and it was 16 percent for the first 24 months. As of June 30, 2000, 81 percent of participants were active. These and other outcomes will change with time.

Savings Outcomes in ADD

Gross deposits. The average participant had participated for 13.3 months and had gross deposits of $41.43 per month ($552 total).

Unmatched withdrawals. The size and frequency of unmatched withdrawals has been one of the biggest surprises in ADD. About 37 percent of participants made unmatched withdrawals from matchable balances, removing 25 percent of all matchable deposits. For participants who made unmatched withdrawals, the average number was 2.9, and the amount removed was $320. With an average match rate of 2:1, this implies a loss of potential matches for people who make unmatched withdrawals from matchable balances of about $640. The high opportunity cost of unmatched withdrawals, coupled with their size and frequency, highlights the difficulty of asset accumulation for the poor, even in the supportive institutional context of IDAs.

Net deposits. *Net deposits* are defined as gross deposits minus unmatched withdrawals minus balances in excess of the match cap. Aggregate net deposits in ADD were $838,443. Net deposits per participant were $353 ($420 for non-exits). The *average monthly net deposit* (AMND)—defined as net deposits divided by months of participation—was $25.42 (for non-exits, $30.30). Median AMND was $17.96 ($23.35 for non-exits). With an average match rate of 2:1, the average participant in ADD had accumulated about $75 per month.

The average match rate per dollar of net deposits was 1.96:1, and the match that corresponded to net deposits was $1,644,508. If all net deposits were used in matched withdrawals, total asset accumulation in IDAs would be $2,482,951. With exits included, this is $1,044 per participant; with exits excluded, it is $1,245 per participant. These figures will change as ADD progresses.

Matched withdrawals. Aggregate matched withdrawals in ADD through June 30, 2000 were $191,601. The average match rate per dollar of matched withdrawals was 1.82:1, and matches

disbursed were $348,373. The average participant with a matched withdrawal had 2.0 withdrawals for a total of $603. Their total asset accumulation averaged $1,698.

Matched withdrawals became more common as balances were built through time; 9 percent of participants had a matched withdrawal by their 12th month, and 27 percent had one by their 24th month.

Matched uses. As of June 30, 2000, 13 percent of participants had a matched withdrawal. About 24 percent made a home purchase, 24 percent invested in microenterprise, and 21 percent pursued post-secondary education. The rest used their matched withdrawals for home repair, retirement, or job training.

About 87 percent of participants had no matched withdrawals. Of these, 57 percent intended to buy a home, 18 percent intended to spend on microenterprise, and 15 percent planned for post-secondary education. About 10 percent planned for home repair, retirement, or job training.

Net deposits as a percentage of the pro-rated match cap. On average, participants had net deposits of 67 percent of the monthly savings target (median 49 percent). At this pace, they will use two-thirds of their total match eligibility.

Deposit frequency. On average and at the median, participants made a deposit in 7.0 months per year. Non-exits made a deposit in 7.6 months per year. Some evidence suggests that frequent depositors accumulate more than infrequent depositors.

Savings rate. On average, AMND was 2.2 percent of monthly income (median 1.3 percent). The savings rate decreased as income increased. Perhaps the institutional effects of IDAs are stronger than the economic effects of greater income, and perhaps these institutional effects are somehow stronger for poorer people.

IDAs and EITC. Net deposits increased markedly in tax season. IDA participants save some chunk of tax refunds or payments from the Earned Income Tax Credit.

Costs

Policy choices require data on both outputs and costs. Cost data in MIS IDA are measured with error and are probably overstated for many reasons (for example, due to start-up costs, provision of technical assistance to other IDA programs, and data collection for the evaluation of ADD). Average program expenses (without matches) were $70.38 per participant-month, or $2.77 per $1 of net deposits. A study of the first 14 months of the experimental-design program in ADD also found costs in this range (Schreiner, 2000a). Costs in ADD did decrease with time. Average program expenses per participant-month through June 30, 1999, were $117.58; in the next 12 months, they averaged $43.06.

With a 2:1 match, total outlays in IDAs were thus roughly $6 per $1 of net deposits ($1 savings, $2 match, and $3 program expenses). This is about $2 of total outlay per $1 of asset accumulation.

Are these costs high or low? The answer depends on the as-yet-unmeasured benefits of IDAs. A standard financial benefit-cost analysis is planned for the site of the experimental design (Schreiner, 2000b). Even without precise knowledge of benefits, however, measurement of costs highlights trade-offs and sets a benchmark that encourages efficiency.

Qualitative evidence from the evaluation of ADD suggests that participants believe that intensive service is a key element of program design. A key challenge for IDA programs is then to provide such services in such a way that benefits can exceed costs. The tension between intensive service and cost structures that would allow broad access to IDAs may lead to two tiers of IDA designs, one with fewer services, lower costs, and broader outreach, and another with greater services, higher costs, and narrower targets (Sherraden, 2000).

New Savings versus Shifted Assets

IDA deposits can come from new savings or from assets converted from other forms. Even if the poor (or the non-poor) do not explicitly shift liquid assets, they can implicitly shift illiquid assets if IDAs lead to reduced investment and maintenance in non-IDA assets. High returns on IDAs may also lead savers to borrow or to repay debts slower than otherwise.

Qualitative evidence from the evaluation of ADD (Moore *et al*., 2001 and 2000) suggests that IDA deposits came in some unknown measure from both new savings and from shifted assets.

Program Characteristics and Savings Outcomes

The association between program (institutional) characteristics and savings outcomes matters because policy can affect program design. The results below are derived from multivariate regressions that control for a wide range of program and participant characteristics.

Match rates. A central feature of IDAs is the match rate. In regressions, higher match rates have large, strong associations with reduced risk of unmatched withdrawals and with reduced risk of exit. Match rates do not, however, have a statistically significant link with AMND.

Qualitative evidence suggests that matches attract people to IDAs; quantitative evidence here suggests that higher match rates keep people in IDAs and encourage them to maintain their balances. But higher match rates do not seem to lead to greater deposits. We believe that these estimated associations result mostly from institutional factors, but economic factors, two-way causation, and censored data also matter to some unknown extent. The data from ADD do not allow a sharp test of the effect of match rates on savings outcomes.

Monthly savings target. The *monthly savings target* is the amount that, if saved each month and not removed in unmatched withdrawals, would produce net deposits equal to the total match cap. On average in ADD, AMND was 67 percent of the savings target.

Higher savings targets were strongly linked with large reductions in the risk of unmatched withdrawals and the risk of exit. Higher savings targets were also strongly linked with higher AMND.

At least three forces may drive this. First, participants may change match caps into goals, leading to greater savings effort when match caps are higher. Second, AMND is cut-off for participants at the match cap. Third, programs may have assigned higher targets to groups expected to be high savers. These last two factors may induce a spurious positive correlation between the match cap and savings.

Financial education. Required financial education is a central feature of IDAs in ADD. The average participant attended 10.5 hours of general financial education. Each hour up to 12 was linked with large increases in AMND, but hours after that had little effect.

In broad terms, AMND increases with financial education (whether general or asset-specific), but only up to a point, probably somewhere between 6 and 12 hours. The content of classes probably also matters, but we did not measure it.

Participant Characteristics and Savings Outcomes

Participants in ADD are not a random sample of people eligible for IDAs; they are program-selected and self-selected. Programs target certain people, and eligibles in the target group who expect the greatest net benefits are the most likely to enroll. Results in this report pertain only to eligibles who, if they had the choice, would enroll in IDAs.

Compared with the overall U.S. population at or below 200 percent of the poverty line, IDA participants are more disadvantaged in that they are more likely to be female, African-American, or never-married. IDA participants are less disadvantaged, however, in that they are more educated, more likely to be employed, and more likely to have a bank account. These patterns likely reflect the explicit targeting of the "working poor" by programs in ADD and the client base of the host organizations.

Gender. About 80 percent of participants were female. Gender had no link with savings.

Race/ethnicity. About 47 percent of participants in ADD were African-American, 37 percent were Caucasian, 9 percent Hispanic, 3 percent Native American, 2 percent Asian-American, and 3 percent "Other." Although average AMND for all groups was at least $19.50, differences between groups were large. For example, compared with Asian Americans, average AMND was $10.58 less for "Other," $11.62 less for Hispanics, $12.77 less for Caucasians, $20.82 less for African Americans, and $22.30 less for Native Americans.

These differences are not due to race/ethnicity *per se* but rather to a constellation of socially produced characteristics correlated with both race/ethnicity and savings. In a perfect model that controlled for everything, the estimated link between race/ethnicity and savings would be zero.

IDAs aim to increase inclusion in institutions for saving and asset accumulation. We do not know whether IDAs increase saving or whether they increase saving more for disadvantaged groups. Although IDAs in ADD did narrow relative racial/ethnic gaps, they are not a panacea.

Education and employment. Given their income, participants in ADD were highly educated: 24 percent had a college degree of some sort, and 85 percent completed high school. Education was not linked with the risk of exit. AMND was highest for people with 4-year college degrees.

Participants in ADD also had a high incidence of employment: 78 percent worked full-time or part-time. Employment status was not significantly associated with any savings outcomes.

Receipt of public assistance. About 50 percent of participants in ADD had received some form of public assistance at enrollment or before. Current receipt of public assistance was not associated with any savings outcomes.

Income. Mean income/poverty in ADD was 111 percent (median 100 percent).[1] About 21 percent were under 50 percent of the poverty line, and 12 percent were over 200 percent of the poverty line. The level of income was not associated with the risk of an unmatched withdrawal, the risk of exit, or AMND, but higher income was associated with a lower savings rate. Possible explanations include institutional factors, censored data, and measurement error, but we believe that institutional factors matter most and that they may be strongest for the poorest.

Insurance coverage. About 51 percent of participants in ADD had health insurance, and 31 percent had life insurance. Health insurance did not have a significant association with exit, unmatched withdrawals, or AMND. Life insurance was not associated with AMND, but it was correlated with reduced risk of exit and of unmatched withdrawals.

Asset ownership. Participants who owned assets likely had unobserved characteristics that predisposed them to save more in IDAs. For example, participants with a checking account were much less likely to exit, they were much less likely to take an unmatched withdrawal, and they had much higher average AMND. The same pattern holds for home owners and car owners.

Summary

These mid-way results from ADD will raise questions, spark debate, and inform policy. The goal of this discussion and of future research—in ADD and elsewhere—is to build knowledge about how programs that aim to encourage saving and asset accumulation can be more inclusive and generate greater net benefits.

[1] These data omit cases for which total income is missing and, like other descriptive statistics here, come from the most recent record in MIS IDA.

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1. IDAs, Savings, and Asset Accumulation by the Poor

The only way to leave poverty for long is to save and accumulate assets, be they human, physical, financial, or social. That is why IDAs try to promote asset accumulation by the poor. If saving were simple and easy, then few people would be poor. But to save means to use less resources in the present, so, even for the non-poor, saving is difficult. Of course, the sacrifice is greater for the poor because they have fewer resources relative to subsistence requirements. Furthermore, the poor lack access to some public-policy mechanisms that, for the non-poor, decrease the current cost of saving. Finally, scarce resources and restricted access may combine to remove saving from the world view of the poor.

What is the nature of these impediments, and how might IDAs address them? This chapter presents background, and later chapters discuss evidence on IDAs, savings, and asset accumulation by the poor in ADD.

Assets and the Poor

Sawhill, in her 1988 classic "Poverty in the United States: Why Does It Persist?" concluded that "we still understand very little about the basic causes of poverty" (p. 1113). This lack of knowledge—and subsequent failure to make a dent in poverty—rests on "a fundamental problem in the research . . . the lack of a basic structural model of the income-generating process" (p. 1112). This chapter lays out a theory in which poverty persists because of a lack of assets. It also discusses how IDAs might be one way to start to reverse this.

The model is not new. Asset accumulation has always been a central theme of development research in non-industrialized countries (*e.g.*, Rutherford, 2000; Attanasio and Székely, 1999; Lipton and Ravaillon, 1995; Besley, 1992; Deaton, 1992a; Gersovitz, 1988). Likewise, much research on the non-poor in industrialized countries focuses on saving (Bernheim, 1999; Browning and Lusardi, 1996; Hubbard, Skinner, and Zeldes, 1995; Deaton 1992b). Asset accumulation for the poor in industrialized countries, however, was somehow overlooked (Sherraden, 1991). Public assistance aimed to fulfill subsistence requirements, but it stopped short of transfers of enough resources to allow people to break out of a poverty orbit.

In 1988, a movement started in industrial countries to include the poor in policies to promote asset accumulation. Friedman's *The Safety Net as Ladder* proposed changes to the welfare structure to encourage development beyond subsistence. Haveman's *Starting Even* declared that "transfer payments are necessary but not sufficient" (p. 149) and called for increased investments in human capital and for publicly funded, restricted-use accounts for youth. Sherraden's "Rethinking Social Policy: Towards Assets" critiqued the subsistence paradigm and proposed IDAs as a step toward a development paradigm.

In the past decade, the movement has gained intellectual momentum (Ackerman and Alstott, 1999; Conley, 1999; Stoesz and Saunders, 1999; Gates, 1998; Oliver and Shapiro, 1995). It has also attracted support from all points along the political spectrum. For example, Bill Clinton—

who as governor of Arkansas wrote the foreword to *The Safety Net as Ladder*—supported IDAs in his 1992 campaign and later proposed a large matched-savings program (Wayne, 1999). The Savings for Working Families Act (H.R. 4106 and S. 2023) would budget up to $10 billion for IDAs (Corporation for Enterprise Development, 2000). Both George W. Bush (Bush, 2000) and Al Gore (Kessler, 2000) had billion-dollar IDA proposals in their platforms, and both proposed some form of individual asset accounts for retirement.[1] The government of Canada plans to sponsor an IDA demonstration in 10 cities, and in the United Kingdom, the New Labour government has proposed accounts that are like IDAs (O'Reilly, 2000).

Why Assets? A Model of Why Poverty Persists

Poverty is a trap of low assets. *Income* is defined as inflows of resources in a period, and *assets* are defined as resources moved through time. The use of assets—human, physical, financial, or social—produces income. Greater income requires greater production and thus greater assets. If *saving* is an increase in resources moved through time and if *asset accumulation* is a result of saving, then greater income requires greater saving and asset accumulation.[2]

Assets are far more than just bank accounts. The chief asset of most people—poor or non-poor—is human capital, defined as time, effort, and skill. Most people produce most of their income from the sale of the production of their human capital, that is, their labor. Just as financial capital accumulated in bank accounts results from saving, human capital accumulated in people also results from saving. To acquire skill, people allocate time to work (experience) or to study (education) rather than to leisure. The accumulated skill decreases the time and effort required for later tasks. Thus, human capital is a resource (time) saved out of leisure in the past that increases productivity (and potential leisure) in the future. Children—perhaps the biggest savers—can spend time and effort to learn (invest in human capital) only if someone else provides resources to meet their subsistence requirements.

Production by assets is far more than just plant and equipment in factories or human capital in labor markets. Financial assets held as bonds, for example, produce a contracted interest rate; stocks produce dividends and price changes (production may be negative). Cash stores resources; one dollar now produces one dollar tomorrow. Non-financial assets also matter for many types of production in both the market and in the household. Homes produce housing services, equivalent to the resources that would be exchanged to acquire similar services as a renter. Refrigerators, mops, and heirlooms are assets that, combined with human capital, produce household services such as cooked meals, cleaned floors, and memories. Social capital—defined as networks, norms, and trust—produces information, reduces transaction costs, buffers shocks, and comforts psyches. In a racist and sexist society, race and gender may also be assets. Sherraden (1991) presents a typology of assets and their returns.

[1] Bush proposed a regressive system of individual accounts within the Social Security system, and Gore proposed a progressive system outside Social Security.

[2] *Saving* and *asset accumulation* are distinct because saving, if coupled with dissaving, need not result in asset accumulation.

At a point in time, people allocate resources between production (saving) and consumption. The trade-off is that more consumption now means less saving, less production, and thus less income to allocate between consumption and production later. The trade-off is sharpest for the poor because, once they meet subsistence requirements, they have fewer resources available to save. For the poor, the high cost of foregone consumption depresses saving and thus depresses future production, income, and consumption. Assets beget assets, so the poor, because they start with low assets, tend to stay poor.[3] The question of how to escape from poverty is, in essence, the question of how to save and accumulate assets.

A Theory of Asset Effects

So far, this discussion of the role of assets in production and consumption has used an "economic" (or rational) framework that reduces people to consumers who save only because saving increases future consumption and who benefit from saving only when they consume its fruits. Sherraden (1991) introduced the concept of *asset effects*, which he defined as economic, social, and psychological effects of assets beyond deferred consumption.

Because economic theory already explains economic effects (changes in rational responses due to changes in constraints and opportunities), this chapter focuses on a theory of the "non-economic" (or psychological) effects of ownership. This is not to suggest that psychological effects overwhelm economic effects; indeed, we believe that economic effects probably matter more. The theory of economic effects of ownership, however, is already well-developed. In contrast, no one has explained *why* or *how* assets might have psychological effects.

It is important to develop a theory of psychological asset effects because much of the allure of IDAs comes from the claim that assets spark hope and change how people think and act.[4] For example, the most-quoted statement from Sherraden (1991) is that "while incomes feed people's stomachs, assets change their heads" (p. 6).[5] IDAs transfer resources; thus, for prosaic economic reasons, they probably improve the well-being of the poor. The radical claim is that asset effects go beyond merely economic impacts.

The theory in this chapter describes how assets might affect hope and thought. If IDAs spark hope (but not false hope), then it must be that poor people are too pessimistic. The theory explains where this pessimism might come from, how assets might change it, and why the poor

[3] For example, someone with low human capital might earn just enough for food and shelter. The person cannot attend classes to acquire more human capital because attendance incurs ancillary expenses. If the person could save, then, with time, these resources could cover the costs of study. With more human capital, earnings might increase, and with it resources available to be saved. Greater savings would then enable greater investment in further productive capacity.

[4] Sherraden (1991, p. 148) says that "assets have a variety of important social, psychological, and economic effects. Simply put, people think and behave differently when they are accumulating assets, and the world responds to them differently as well."

[5] Sherraden (1991, p. 155) says that assets "are hope in concrete form." Also, "IDA programs are aiming not merely to create savings but savers" (Sherraden, 2000, p. 6).

are not to blame. Likewise, if IDAs improve world views, then it must be that the poor had downwardly skewed world views. The theory explains—without recourse to concepts of weakness or moral sloth—how the poor might come to have downwardly skewed world views and how assets might help to align views more closely with the real world.[6]

From the point of view of advocates for IDAs in a policy arena, the presentation of this theory is risky. Because the theory suggests that the poor lack hope and/or accurate world views, some readers see the theory as supportive of the idea that the poor are lazy or stupid. In fact, the theory derives depressed hope and downwardly skewed world views as a result of luck and limits on rationality, two factors that the poor share in the same measure as the non-poor. The theory explains both how the poor can improve and how the room for improvement resulted from forces beyond their control.

There is also a risk that the presentation of a theory of psychological asset effects will be seen to suggest that economic effects do not matter or that they matter less than psychological effects. Such an interpretation would be mistaken. The theory encompasses both economic and psychological effects and shows how they reinforce each other. Although the theory is not new, the presentation here also shows the strength of economic effects and how they work.

Psychological Effects

Humans are forward-looking, and current well-being depends in part on expected future well-being. People with more assets now expect to have more resources later. Thus—for purely economic reasons—they expect to be happier. For an individual, "asset effects" are when ownership improves expected future well-being and thus, for psychological reasons, improves current well-being. If people have savings to savor, then they fear less and hope more.[7]

In the economic model, savings, if not consumed before death, serve no purpose. In the psychological model, the thought of the opportunities enabled by savings provides benefits to the saver, even if none of these opportunities are realized. In the economic model, assets matter only in use; in the psychological model, ownership, regardless of use, also matters, because people look ahead and anticipate the possible economic effects of the use of resources.[8]

[6] The same theory suggests that the non-poor may have upwardly skewed world views.
[7] Asset effects are not about miserliness; they flow from the anticipated use of resources.
[8] Although asset effects seem like common sense, scientific evidence is scant. Almost all studies find that assets are correlated with a wide range of positive outcomes. Few of these studies, however, distinguish between the economic effects of use and the non-economic effects of ownership. (Likewise, few studies account for possible correlations between observed assets and unobserved factors that lead both to more assets and to greater positive outcomes independently of asset ownership.) The typical paper attributes all of the positive correlation between positive outcomes and assets to asset ownership, but much of the correlation could be attributed to asset use or to unobserved factors correlated both with assets and with positive outcomes.

Social and Political Effects

Asset effects may go beyond the psychology of individuals; owners think differently, and others treat them differently. The social and political effects of ownership are just as real as the individual effects, and may be more important. Of course, part of the social and political effects of wealth are due to the use of resources; for example, the non-poor can buy friends and political allies. Likewise, the non-poor face lower transaction costs and can make larger investments that yield higher returns. They may also enjoy disproportionate political influence or access to public services. Some social and political effects, however, come from ownership and from the potential use of resources. For example, the non-poor may get better treatment because they are more likely to be able to reciprocate. Furthermore, since the time of the Puritans, some Americans have taken wealth as a sign of virtue (and poverty as a sign of vice), with the explicit or implicit implication that the poor deserve worse treatment.[9]

Feedback Effects

In this model, the non-economic effects of asset ownership depend on the economic effects of asset use. The converse also holds; the effects of use depend on the effects of ownership. People make choices and expend effort based on subjective judgements of the chances (probabilities) of possible consequences. Although luck matters, greater effort improves both chances and consequences. Effort, however, exacts a psychological cost, and the cost of effort decreases as expected chances or expected consequences improve.[10] More assets improve chances and consequences because resources—by definition—relax constraints and open opportunities. In turn, improved chances reduce the cost of effort. This leads to greater effort, improves chances and consequences, and adds to a virtuous cycle.

For example, most people get most of their income from the production of their human capital in the labor market. Human capital, in turn, depends in part on investment in formal education. All else constant, a non-poor person is more likely than a poor person to finish high school or college. If needed, a non-poor person can buy better books or quit a part-time job to study more. For the poor, these expected economic effects of asset use increase the cost of the effort required to finish school. At some point, the cost is so high that they may opt to quit, or diplomas or degrees may vanish from their world view. The effects of asset use and of asset ownership reinforce each other to shape investment in human capital and thus potential future income.[11]

[9] The social value of wealth as a signal can encourage conspicuous ownership. Some people (whether poor or non-poor) may invest too much in assets—such as clothes, cars, or houses—because, unlike a bank statement, these forms of resources are visible in public.

[10] For example, students who expect to do well on a test may find studying easier than students who expect to do poorly.

[11] ADD data analyzed in this report do not permit tests of the effects of use versus ownership.

Bequests of Wealth and World Views

Some children inherit wealth when their parents die. More important for more children, however, are bequests from living parents that facilitate investment in human capital. Born asset-less, children acquire lots of human capital only if someone else provides for their subsistence and thus releases time and effort for education, training, and experience. Because shelter is the largest share of most family budgets, poor families gravitate toward low-cost housing. Because of local-school finance, the children of poor parents tend to go to low-quality schools and thus build less human capital. In adulthood, low human capital means low income. This stunts the chances of their children to acquire human capital and adds to a vicious cycle.

Children also, to some extent, inherit world views. A *world view* is defined as a set of subjective judgements about which elements of life are subject to choice and about the chances (probabilities) of possible consequences. Choices, chances, and consequences have objective reality, but people must base their subjective world views on their imagination, on their own experience, and on the experience of people they know.

For example, people can choose whether to try to go to college. Some see this as a choice and, with full knowledge that they have a choice, make a decision. For others, college is not a choice; they never pictured their world with (or without) it. Among people who believe that college is a choice, some perceive the chances—given a level of effort—of getting a degree as low and the consequences of a degree as only mildly positive. Others are more optimistic. These beliefs affect the psychological cost of effort. The cost of effort then affects the level of effort and thus the objective chances and consequences.

This theory attempts to show how assets have both economic and psychological effects. The psychological effects result from luck and limited rationality, not from weakness and sloth, and apply equally to the poor and non-poor. The theory matters inasmuch as it may explain why and how IDAs can spark hope or improve world views.

IDAs, Savings, and Asset Accumulation by the Poor

Three impediments stand between the poor and asset accumulation: low resources relative to subsistence, lack of access to subsidies for assets, and inaccurate views about saving. IDAs attempt to address all three.

Low Resources Relative to Subsistence

Most poor people have low incomes because of low human capital. Thus, the best way to increase the amount of resources available to be saved is to improve public schools. School reform, however, is slow, and for many people it is already too late. Furthermore, even if the poor go to good grade schools and high schools, they may have difficulties in college which, although heavily subsidized, still costs a lot.

The level and swings of the macroeconomy also affect income. Furthermore, when the economy dips, the poor suffer most; shifts in unemployment drive large changes in their income.

IDAs do not directly affect school quality or the macroeconomy. They do address, however, some constraints that dampen income in the long term, and they do attempt to create institutions and incentives for the poor to build enough savings to change their lives.

Matchable uses of IDAs include post-secondary education and job training. Thus, IDAs subsidize investments in human capital that may, in the long term, increase income and the ability to save. For these reasons, Curley and Sherraden (2000) suggest that IDAs might be most powerful for children and youth. Matches for microenterprise might also raise incomes, and matches for home purchase might decrease shelter expenses and so increase resources available to be saved.[12]

Finally, match rates serve three purposes. First, they increase the return on savings. Second, they attract people to the program and may spark them to start to save or to save more. Third, they increase the amount of resources accumulated so that a relatively small amount of savings can become a large asset—such as a house or a college education—that might transform a life-course. Given an asset-accumulation goal, a high match rate substitutes for high savings and thus indirectly substitutes for income from other sources.

IDAs do not, at least in the short-term, increase resources available to save. Once the poor do save, however, IDAs increase the return. Matched withdrawals may also increase long-term productive capacity and thus future income and future ability to save.

Access to Subsidies for Assets[13]

Much asset accumulation in the United States is subsidized (Howard, 1997; Sherraden, 1991). The largest, most widespread, and most important asset policy is public grade school and high school. Deductions for mortgage interest subsidize home ownership, the bedrock of the middle class and the second-most important asset of the poor. Interest deductions and below-market-rate student loans subsidize college. Tax-advantaged retirement accounts such as IRAs or 401(k) plans are also very common.

The poor, however, benefit less because these subsidies directly or indirectly require existing assets.[14] For example, local-school finance based on property taxes leads to better public schools in wealthy neighborhoods. Tax-advantaged retirement accounts link subsidies to human capital through high income and high tax brackets.

Subsidized debt is indirectly linked to existing wealth because loans can finance only part of an investment package and because lenders often take existing wealth as a signal of

[12] Matches for computers or cars might also affect productive capacity in the market.
[13] This section is based on Schreiner *et al*. (2000).
[14] The Homestead Act (Williams, 2000) and the G.I. Bill subsidized assets with less of a tilt toward the non-poor.

creditworthiness. For example, prospective home buyers must accumulate two types of assets: financial assets for a down payment, and enough human capital to earn wages to make mortgage payments. Likewise, student debtors must have savings (or wealthy parents, or time for a part-time job) to pay expenses beyond tuition and books. Finally, even if entrepreneurs could fund capital goods completely with subsidized debt, at least some savings are required to finance operating and living expenses until a firm gets off the ground.

Tax breaks for asset accumulation (such as deferments for IRAs and 401(k) plans or deductions for interest on student loans or home mortgages) are weak incentives for the poor because they are in low (or zero) tax brackets. Furthermore, bigger loans mean bigger subsidies, so the poor—who save less for retirement, go to less-expensive colleges, and buy less-expensive houses—get smaller subsidies. There are good administrative, targeting, and incentive reasons to link subsidies for assets to current wealth (and thus to previous saving), loans, and the tax system, but it also means that the current asset-subsidy system does less for the poor than for the non-poor.

To increase access to asset subsidies for the poor, IDAs decouple the transfer mechanism from existing wealth, taxes, and loans. People who pass a means test deposit post-tax dollars in passbook savings accounts.[15] Withdrawals are matched if used to buy certain assets. IDAs resemble Roth IRAs except that the subsidy is a cash match instead of a tax break.[16]

Views about Saving

Even with resources to save and access to subsidies, the poor must perceive saving as a choice that they might make, a choice with likely positive consequences. The institutional structure of IDAs encourages such world views.

Institutions. Institutions are policies or social patterns that shape opportunities, constraints, and consequences. For example, the institution of income tax affects the return to time and effort in the labor market. Likewise, the institution of the interest rate on a passbook savings account is the price of current balances in terms of future balances. Laws against theft are also institutions that give the consequences of crime. For IDAs, institutional aspects include eligibility requirements, financial-education requirements, match rates, match caps, time caps, wait periods between enrollment and matched withdrawals, interest rates and fees on passbook savings accounts, and patterns of support from staff and peers.

Institutions affect world views—and thus actions—because they expose people to knowledge of opportunities, choices, constraints, and consequences.[17] For example, laws against theft matter not only because people weigh the benefits and costs of theft but also because people—due to

[15] IDAs may means-test assets, but, unlike other savings subsidies, this favors the poor.
[16] IDA participants also receive financial education and encouragement from program staff.
[17] In standard economic theory, institutions do not affect world views. *Homo economicus* is rational, omniscient (knows all the possible choices and the probability of all consequences), and has time and energy to make the best choice. In fact, *Homo sapiens* is seldom rational, is not omniscient, and must work to make choices (Thaler, 2000).

limited time, effort, knowledge, and cognition—often skip the benefit-cost calculus and assume from the mere existence of the law that net benefits are negative.

Institutional aspects of culture. Some aspects of culture—shared patterns of beliefs and choices—can be seen as institutions that shape views of choices and beliefs about probabilities of possible consequences. Standard economics ignores culture; each choice starts from scratch. But this takes too much time and effort, so people often infer choices, chances, and consequences from what they see others do around them (Mischel, 1977).[18]

Cultural institutions affect asset accumulation. For example, home ownership is part of the American Dream. People who grow up with home owners may presume that this is the natural order; they buy a home, perhaps because they never consider *not* buying one. If they do see home ownership as a choice, then they may still feel unsuccessful if they choose to rent. People who grow up with renters may not realize that they can choose to buy a home (or they may underestimate the probability of positive consequences from such a choice).

Culture shapes world views because imagination is limited; people do not think much about what they might do but have not yet seen done. Also, choices that break with social patterns require extra mental effort to explain and to justify, both to the chooser and to others. The road less traveled is more difficult. Institutions shape rules of thumb and matter for behavior beyond what economic theory predicts because the process of completely rational choice is too costly.

Institutional aspects of IDAs. Institutions have both "economic" (or rational) effects on opportunities, constraints, and consequences and "non-economic" (or psychological) effects on world views.[19] Although policy often focuses on economic effects, non-economic effects are real and may sometimes matter more. The design of the institutional structure of IDAs pays attention to both types of effects. For example, the match is an economic subsidy for asset accumulation by the poor; tax breaks would be weaker incentives. Other structural elements of IDAs aim to nudge world views toward saving and asset accumulation.[20]

First and foremost, the mere existence of IDAs sends a message that the poor can (and perhaps should) save (Sherraden, *et al*., 2000; Bernheim, 1997). The presence of IDAs creates a social pattern; the poor do not have to work as much to see that they can gain from the choice to save.[21]

[18] Cultures differ from place to place because people can inexpensively observe only those near them and because variance in physical opportunities and constraints makes different choices optimal in different places.

[19] Economic theory already describes non-psychological effects. *Institutional effects* is reserved here to describe psychological effects beyond the realm of economic theory.

[20] Some of these insights come from social/psychological and behavioral theories of saving (Sherraden, *et al*., 2000; Beverly and Sherraden, 1999; Bernheim, 1997; Caskey, 1997). Madrian and Shea (2000) also present evidence that norms and suggestions influence saving choices.

[21] Current policy already does this for the non-poor (Sherraden, 1991, p. 127): "The middle class accumulates its wealth, not so much through superior individual investment but through structured, institutionalized arrangements that are in many respects difficult to miss. . . . This is

Second, IDAs are linked to financial education. Knowledge of how to save makes it easier.[22] For example, a household budget makes people more aware of finance and increases the likelihood that they will remember to consider saving (in economic models, people never forget). Exhortations to "pay yourself first" may boost accumulation if people, rather than setting a consumption target and then saving the residual, set a saving target and consume the residual.

Third, IDAs set targets. Technically, match caps are limits, but psychologically, they may become goals. A key hypothesis of institutional theory for IDAs is that people try to save up to targets. The match cap implicitly sets a norm, and higher caps may spark more saving not only because they allow greater matches but also because people feel better if they meet the norm.

Fourth, IDAs give feedback. Monthly IDA statements show progress toward goals. Furthermore, program staff and peers may provide informal encouragement. Positive reinforcement may cause people to focus on positive consequences (Mischel, 1977), which decreases the cost of effort and thus increases saving. In economics, feedback has no place because people already know how well they are doing.

Fifth, IDA programs ask for monthly deposits. This may become a norm or habit that decreases the mental cost of saving.[23] It also gives poor people access to a way to commit to save (Maital and Maital, 1994; Thaler, 1994; Maital, 1986).[24] People start an IDA with knowledge of the norm and thus expect guilt if they make infrequent deposits. Although they may regret this expectation in months when a deposit requires extra sacrifice or when they feel bad because they have failed to make a deposit, they nonetheless agree to the arrangement because they recognize that such constraints on short-term choices encourage asset accumulation and thus may improve long-term well-being.

Sixth, to budget, to save, and to plan to use savings may increase thought of the future consequences of current choices, which may increase saving. Likewise, classes in personal financial planning may expose people to the practice of setting long-term goals. Doing something once changes behavior because it decreases the cost of doing it again.

Seventh, financial education may offer more accurate views of the chances of the possible consequences of saving. For example, some people may believe that they cannot save enough to make a difference, but classes can show how small-but-consistent deposits add up. Classes may also provide data about how college degrees affect salaries, the likelihood of success in microenterprise, or the benefits and costs of home ownership.

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not a matter of making superior choices. Instead, *a priori* choices are made by social policy, and individuals walk into the pattern."

[22] In standard economic theory, financial education is superfluous because people already know everything.

[23] It may also increase saving because it provides participants with a socially accepted excuse to deny requests for gifts of surplus cash by members of their social networks.

[24] The poor often lack access to other common ways to commit to save, for example direct deposit, home mortgages, and automatic deduction from paychecks.

Eighth, limits on the use of matched withdrawals may highlight choices that people might not consider on their own. For example, matches for home purchase may serve to point out that home ownership is both worthwhile and possible for the poor. Likewise, matches for microenterprise suggest that the poor can own and run small firms.

Ninth, rules that limit matches to illiquid assets[25] (a home, an education, a small business) may curb temptations to decumulate assets. In principle, a person could make deposits into an IDA, take a matched withdrawal, sell the asset, and pocket or squander the proceeds. In practice, the rules send a message that match-eligible assets are worth keeping. Furthermore, matched withdrawals convert liquid resources to an illiquid form difficult to convert to consumption.

Tenth, informal limits on unmatched withdrawals may curb temptations to dissave.[26] Program staff use exhortations, phone calls after an unmatched withdrawal, and discussions of how, if the match rate is 2:1, a dollar withdrawal costs two dollars in lost matches. Highlighting these costs increases awareness of costs by participants and so decreases unmatched withdrawals.

Eleventh, IDA programs ask for "new" saving. Deposits in IDAs may come either from new savings (increased income and/or decreased consumption) or from shifted resources (assets already accumulated in another form such as balances in a checking account). For example, IDA classes may teach ways to eat well for less, or staff may guide participants to sources of ads for jobs. IDAs also require a wait period between enrollment and matched withdrawals; this allows time for institutional effects to sink in, and it deters quick matched withdrawals based on shifts of already-saved (or borrowed) assets. It is difficult to guarantee that IDA deposits come from new savings; because IDA staff ask participants to save by earning more or consuming less, however, new savings are more likely than if no one asked in the first place.

In sum, institutional theory suggests that IDAs send a message that the poor can save, increase financial knowledge, set targets, provide feedback, create norms, boost future orientation, highlight the choices, chances, and consequences of saving, and discourage dissaving. In economic theory, institutions have no non-rational effects because people already have all that they need to make the best choices. In the real world, people are subject to suggestion, and norms affect mental costs. The suggestions and norms embedded in the institutional structure of IDAs tend to encourage saving and asset accumulation.

[25] With time, effort, and transaction costs (akin to friction), resources can be converted to other forms of resources or to consumption. *Liquid* resources are easily converted; *illiquid* resources have high conversion costs. Cash is the most-liquid form because it may be converted into almost any other form (for example, a house). Human capital is probably the most illiquid; it can be converted to other forms only through time and effort and cannot be completely converted all at once. Through cash wages, human capital can become a house. In fact, *resources* might be defined by their convertibility into desired forms. Wastes lack such convertibility.

[26] Because the poor are subject to frequent shocks to income and expenses, unmatched withdrawals are often extremely valuable to participants, so formal restrictions are ill-advised.

How Do IDAs Differ from Other Means-tested Transfer Programs?

Sherraden (1991) says that IDAs transfer assets but that means-tested transfer programs (such as Temporary Assistance for Needy Families, TANF) transfer income. The income/asset distinction, however, hinges on the time frame of measurement, not on the resource transfer itself. Any resource may be consumed, and any resource may be saved. IDA matches are income when disbursed (inflows of resources in a time frame), and welfare checks, if saved, are assets (resources moved through time). How then do IDAs differ from other transfer programs?

TANF transfers liquid cash; IDAs transfer illiquid home equity (for home purchase or repair), illiquid human capital (for post-secondary education or job training), illiquid business assets (for microenterprise), or illiquid account balances (for retirement). Illiquid resources can still be consumed, but the conversion costs are greater than for cash. Thus, people are more likely to save resources from IDAs than from TANF.[27] Standard means-tested transfer programs encourage resource use; IDAs encourage future resource use and current resource ownership.

Furthermore, means-tested transfer programs are designed to just barely support subsistence, and their institutional structure sends the message that resource transfers are to be consumed. In particular, means-tests for assets discourages saving resources from welfare checks.[28] Although this is at least partly a rational response to asset-tests, it may also be partly psychological. For example, some people may infer from the mere presence of an asset-test (or from the story of someone who saved and lost benefits) that saving is punished. They may then form a rule-of-thumb not to save, even though they might find, if they worked out the details, that saving would improve their well-being in the long term.

In contrast, IDA transfers are packaged in an institutional structure that suggests that long-term well-being depends on asset accumulation. As discussed above, financial education shifts world views that may underestimate the possibility and consequences of saving. Furthermore, once resources are deposited, people may simply forget that the resources may be consumed, or people may assign the resources to a "mental account" that is destined for long-term purposes (Moore *et al*., 2000; Thaler, 1990; Shefrin and Thaler, 1988). Most of all, the existence of IDAs suggests that the poor can and should save.

Why Not Assets?

Development and well-being in the long term depend on assets. All else constant, more resources are better than less, and few people would oppose asset accumulation. For public

[27] Although resources from IDA matches are likely to be saved, IDAs might not increase total asset accumulation because people might decumulate other forms of assets or increase debt in response to IDA incentives (Chapter 14). IDAs might even decrease total asset accumulation.

[28] Powers (1998) finds that asset-tests reduce saving both by people on welfare and by people close to being on welfare. Hubbard, Skinner, and Zeldes (1995) find that asset-tests may explain why many U.S. households hold no financial assets. Asset limits were relaxed in the 1990s, but it seems that few poor people realize this (Hogarth and Lee, 2000).

policy, however, not all else is constant, and the key question is not whether some assets are better than no assets. The question is how, if assets beget assets, policy might create institutions that the poor might use to start to build assets, and how to pay for these institutions.

Saving requires current sacrifice through less consumption and/or more work. Some people are so poor that, once they meet subsistence requirements, they have few resources available to save. This is why IDAs are voluntary and allow people to skip deposits in some months and to make unmatched withdrawals.

Although not always acknowledged, saving is risky. Future returns are unknown. For some people, death comes too soon, and for others, the future will not be what they expected. Although the United States is uncommonly safe, financial savings may be threatened by inflation, bank failures, or market declines. Human capital loses value in recessions, and most microenterprises close quickly. Homes are leveraged, undiversified investments that may depreciate.[29] Saving has a dark side; all owners enjoy ownership effects, but some will also suffer losses.

The debate on asset subsidies for the non-poor centers on whether they attract new savings. Likewise, IDAs are best if savings come from increased income or decreased consumption rather than from shifts of already-accumulated assets. The poor, of course, have less assets to shift, and IDAs send a strong institutional message that savings should be new. The jury, however, is still out, and even if a large share of IDA deposits are shifted, IDAs may still be worthwhile.

Some advocates for the poor worry that the development paradigm will squeeze out the subsistence paradigm; the fear is that people will save themselves to the point of harm. IDAs increase the return to saving and trust people to judge whether the reward is worth the sacrifice. IDAs are voluntary, and most participants probably will not save too much. Furthermore, IDAs aim not to replace subsidies for consumption but to complement them.

Subsidies for assets may have social benefits, but they definitely have social costs. A subsidy for one person is a tax for someone else. Beyond the cost of the match, program delivery incurs costs. In the absence of non-economic effects, subsidies distort markets. Of course, everything has costs; the question is whether costs exceed benefits.[30]

Like all anti-poverty policies, IDAs redistribute from the non-poor to the poor. Their explicit transfers expose them to attack; asset subsidies hidden in tax breaks (such as the more than $300 billion that go to the non-poor each year) encounter less flak. Also, some people view taxes as government theft and tax breaks not as subsidies but as reduced theft. In this view, subsidies for people who pay little taxes do not make sense. Absent efficiency concerns, however, greater equality improves social well-being (Atkinson, 1992).

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[29] Depreciation is more likely as the baby boom ages (Bernheim, 1995) and for people who buy old, low-cost homes or homes in low-income neighborhoods.

[30] The experimental-design component of ADD will measure these (Schreiner, 2000b; Sherraden, *et al.*, 1995).

Means-tested subsidies for assets expand welfare and, like all means-tested transfers, decrease work incentives for people who anticipate that they may receive means-tested transfers (Moffitt, 1986). Furthermore, like all phased-out transfers, reductions in match rates decrease work incentives for people after they start to receive means-tested transfers. While people have IDAs, however, work incentives may increase if people maintain consumption levels but increase saving.

Although IDAs have been free of scandals, fraud and abuse do happen, as in all programs. Several aspects of institutional design—such as annual match caps, financial education, direct disbursement of match funds to vendors, and wait periods on matched withdrawals—serve to deter abuse.

IDAs are not a panacea. They cannot replace cash transfers for subsistence; they are not costless; they do not attract only new savings; and they are not immune to abuse. They will not make the poor rich quickly. IDAs are one way to nudge some impoverished people toward a path that may, with time and effort, improve their long-term well-being. ADD and this report are among the first attempts to check how well IDAs do this.

The plan of the rest of the report is as follows. After an introduction to IDAs and ADD, we describe the characteristics of participants and programs. We then document outcomes in terms of enrollments, deposits, and withdrawals, as well as some measures of program costs. Multivariate regressions then look at the links between characteristics of programs and participants and two savings outcomes (the risk that a participant will leave an IDA program and the level of average monthly net deposits). Four chapters then look in-depth at the links between these savings outcomes and financial education, income, race/ethnicity, and match rates. We discuss whether IDA deposits come from new savings or shifted assets. Finally, we summarize the conclusions of the report and what they mean for policy, programs, and research.

2. Individual Development Accounts and the American Dream Demonstration

Individual Development Accounts

Individual Development Accounts (IDAs) are subsidized savings accounts. Unlike other subsidized savings accounts such as Individual Retirement Accounts (IRAs) or 401(k) plans, IDAs are targeted to the poor, provide subsidies through matches rather than through tax breaks, and require participants to attend financial education. Participants accrue matches as they save for purposes that build assets that increase long-term well-being and financial self-sufficiency. Examples of matched uses of withdrawals include home purchase, post-secondary education, and microenterprise. Accounts can be opened at birth and can remain open for a lifetime. Funds may come from public or private sources, and funding partnerships are common. IDAs are a conceptually simple community-development and public-policy tool that may be adapted to a wide range of applications and circumstances.

American Dream Demonstration

The first large-scale test of IDAs was started by the Corporation for Enterprise Development (CFED) in September 1997. The Downpayments on the American Dream Policy Demonstration—the "American Dream Demonstration" (ADD)—involves 13 host organizations[1] selected through a competitive process to design, implement, and run IDA programs. Table 2.1 contains a brief description of each host organization and of the groups targeted by their IDA programs. Appendix C has additional data on each host.

Enrollment in ADD began in July 1997 and was planned to end by December 31, 1999, although some participants enrolled after the deadline. As of June 30, 2000, ADD had 2,378 participants. For most participants, matches are possible only for deposits through December 31, 2001, although some participants have earlier or later time caps. Work on the evaluation of the 1997-2001 results will continue at least through 2003, and data from the experimental-design component will be collected through 2003 and analyzed after that.

ADD began with funds from 11 private foundations channeled through CFED. Since then, some host organizations have been awarded contracts through the Assets for Independence Act (AFIA) from the U.S. Department of Health and Human Services. As a result, funds for some participants in ADD come from both ADD and AFIA. Because AFIA funds came with design requirements that differed from those that were already in place for ADD,[2] records for IDA

[1] One host organization, CAPTC, has two IDA programs, so this report refers to 14 "IDA programs" and 13 "host organizations." A given program may have more than one "site," where different sites represent different funders or different IDA designs.

[2] IDA structure in the original sites was less restrictive than in the new sites. For example, the original sites allowed account ownership to be sole or joint, and they matched withdrawals for a

participants within each program are grouped into sites, with one site for accounts as designed originally and another site for accounts with the new designs required by AFIA. This report looks at data both from the original sites and from the new sites.[3]

wide range of uses. The new sites require that the program sign off on all withdrawals (matched or unmatched) and match only withdrawals for home purchase, post-secondary education, or microenterprise. Furthermore, the new sites require participants to be at or below 150 percent of the poverty line, not 200 percent as in the original sites. The new sites also require a six-month wait period between enrollment and matched withdrawals; some original sites had different wait periods. Finally, most of the new sites have a lifetime match-cap structure, but many of the original sites have an annual match-cap structure.

[3] In addition, some host organizations run IDA sites that are not part of ADD. This report does not analyze data from non-ADD sites.

Table 2.1 The 13 Host Organizations in ADD

Host Organization	Location	Type of Community	Type of Organization	Targeted Participants for IDAs
ADVOCAP	Fond du Lac, WI	Small town and rural area	Community action agency	Former AFDC/TANF recipients; working-poor people
Alternatives Federal Credit Union	Ithaca, NY	Small city and rural area	Community development credit union	Single parents; youth
Bay Area IDA Collaborative (EBALDC)	Oakland, CA	Urban	Collaborative of 13 community-based organizations	Low-income Asian Americans; African Americans; Hispanics
CAAB Corporation	Washington, DC	Urban	Collaborative of 8 community-based organizations	TANF recipients; youth; African Americans; Hispanics; Asian Americans
Central Texas Mutual Housing Association	Austin, TX	Urban	Not-for-profit housing organization	Rental property residents; youth
Central Vermont Community Action Council	Barre, VT	Small towns and rural areas	Community action agency and community development corporation	TANF recipients; youth
Community Action Project of Tulsa County	Tulsa, OK	Urban	Community-based anti-poverty organization	Program 1: Working families with children at or below 200% of poverty. Program 2: at or below 150% of poverty.
Heart of America Family Services	Kansas City, MO	Urban	Community-based family-services agency	Hispanics; African Americans
Human Solutions	Portland, OR	Urban	Not-for-profit housing organization	Rental property residents
MACED	Berea, KY	Small towns and rural areas	Association of community development organizations	African Americans; rental property residents; working poor people
Near Eastside IDA Program	Indianapolis, IN	Urban	Social-service organization / Community development credit union	Neighborhood residents; youth
Shorebank Corporation	Chicago, IL	Urban	Community development bank with not-for-profit affiliate	Rental property residents; Shorebank customers
Women's Self-Employment Project	Chicago, IL	Urban	Microenterprise-development organization	Low-income, self-employed women; public housing residents

3. Program and Administrative Characteristics

This chapter describes program and administrative characteristics in IDA programs in ADD.

Program Characteristics

Organizational Characteristics

Age of organization. The host organization houses the IDA program. All host organizations in ADD existed before ADD, and they all run programs in addition to IDAs. The mean age of hosts (as of the year 2000) was 20.93 years, with a low of 3 and a high of 35 (Table 3.1).

Age of program. The months between the opening of the first IDA account in a program and June 2000. The mean age of programs was 27.5 months, with a low of 17 and a high of 35.

Organizational size. Full-time-equivalent months by salaried employees in the host organization (not just in the IDA program) per month since the IDA program started. The mean size of the host was 67.01 (median 24.40), with a low of 0.02 and a high of 314.1.

General financial education required. All programs in ADD require general financial education. The mean requirement was 12.58 hours, with a low of 6 and a high of 45. Programs also offer asset-specific financial education. Chapter 10 discusses financial education further.

Account Structure

Time cap. The number of months after opening an account in which a participant may make matchable deposits. Although deposits after the time cap are not matchable, participants can still make matched withdrawals after the time cap. In ADD, the mean time cap was 32.36 months, with a low of 17 and a high of 50 (Table 3.1).

Total match cap. The limit on the amount of matchable deposits possible before the time cap. Participants can make deposits beyond the match cap, but these excess deposits are not matchable. The mean total match cap in ADD was $1,465.57, with a low of $240 and a high of $7,500. ADD has two types of match-cap structures, annual and lifetime.

In an *annual match-cap structure*, participants face a match cap in each participation-year. The total match cap is the sum of the annual match caps. For example, suppose an account has a 2-year time cap and a $500 annual match cap. In the first twelve months, up to $500 are matchable, and in the second twelve months, another $500 are matchable. Unused match eligibility is lost as each year passes. For example, if someone with a 2-year time cap and a $500 annual match cap deposits $200 in the first year and $900 in the second year, $200 is matchable in the first year, and $500 is matchable in the second year. The $300 of unused match eligibility in the first year is lost. Balances in excess of an annual match cap, however, are matchable in following years. For example, if someone with a 2-year time cap and a $500 annual match cap

Table 3.1 Program Characteristics				
	Mean	**Median**	**Minimum**	**Maximum**
Organizational Characteristics				
Age of Organization (years)	20.93	21.50	3.00	35.00
Age of Program (months)	27.50	28.00	17.00	35.00
Organizational Size (FTEs per month)	67.01	24.40	0.02	314.10
General Financial Education Required (hours)	12.58	10.00	6.00	45.00
Account Structure				
Time Cap (months)	32.36	35.00	17.00	50.00
Total Match Cap ($)	1,465.57	1,500.00	240.00	7,500.00
Monthly Savings Target ($)	42.97	41.67	8.64	208.33
Average Match Rate ($)	2.11	2.00	1.00	7.00
Wait Period (weeks)	18.13	24.00	0.00	52.00
Program Inputs per Participant-month (Averaged across Participants)				
Salaried Staff Hours	2.84	1.94	0.00	22.63
Volunteer Staff Hours	0.49	0.07	0.00	7.89
Partner Staff Hours	1.06	0.65	0.00	12.41
Total Staff Hours	4.39	4.01	0.00	29.56
Salary Expenses for IDA program ($)	46.31	36.91	0.00	307.93
Non-salary Expenses for IDA program ($)	24.07	14.54	0.00	197.37
Total IDA Expenses for IDA program ($)	70.38	66.56	0.00	631.25
Number of Marketing Activities	3.00	2.58	0.00	7.00
Participant Data				
Number of Participants	81.72	76.30	32.30	217.80

deposited $900 in the first year and $200 in the second year, then the $400 that was not matchable in the first year becomes matchable in the first month of the second year. Only $100 of the $200 deposited in the second year is then matchable.[1] In ADD, 56 percent of participants had an annual match-cap structure.

In a *lifetime match-cap structure*, all deposits before the time cap are matchable, up to the lifetime match cap. The total match cap equals the lifetime match cap. For example, if someone with a 2-year time cap and a $1,000 lifetime match cap deposits $200 in the first year and $900

[1] Time caps do not allow many participants with annual match-cap structures in ADD to complete a full twelve months in their final participation-year. For example, if the time cap is December 31, 2001, then people who enroll in June of 1999 will end their first participation-year on June 30, 2000 and their second participation-year on June 30, 2001. They will only complete six months of their third participation-year before the time cap. Some programs in ADD set the match cap for these last months equal to the annual match cap; other programs pro-rate.

in the second year, then $1,000 are matchable.[2] In ADD, 44 percent of participants had a lifetime match-cap structure.[3]

Monthly savings target. The total match cap divided by the time cap. The monthly savings target is the amount which, if saved each month and not removed in unmatched withdrawals, will produce net deposits equal to the total match cap in the last month before the time cap.[4] In ADD, the mean monthly savings target is $42.97, with a low of $8.64 and a high of $208.33.

Match rate. The number of dollars disbursed by the IDA program to a vendor for each dollar withdrawn in a matched withdrawal. The match rate may vary among participants in a given program, so the average match rate in Table 3.1 is taken not across programs but across participants. The mean (and median) is about 2:1, with a low of 1:1 and a high of 7:1.

Wait period. Weeks after enrollment before a matched withdrawal is allowed. In ADD, the mean across programs is 18.13 weeks, with a low of zero and a high of 52. The median is 24 weeks (six months).

Appendix C discusses details of the account structure at each ADD program. Chapters 8 and 9 discuss the association between elements of the account structure and saving behavior in ADD.

Program Inputs

Salaried-staff hours. Average hours worked by salaried employees of an IDA program in a month, per participant-month at the participant level.[5] Mean hours of salaried staff per participant-month was 2.84, with a low of zero and a high of 22.63 (Table 3.1).[6,7]

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[2] Some programs in ADD have rules meant to restrict large deposits just before the time cap.

[3] ADD has both annual and lifetime match-cap structures. Like current subsidized savings accounts such as IRAs and 401(k) plans, a broad IDA policy would probably have only an annual match-cap structure (and no time cap). An annual structure spreads out fiscal costs and may also discourage abuse; in a lifetime structure, someone could borrow or otherwise shift large amounts of assets into an IDA and quickly take advantage of an entire lifetime of match-eligibility with little new savings.

[4] ADD programs want participants to save the monthly savings target, and some explicitly ask them to do so.

[5] For example, suppose that in month 1 of a program, the number of staff hours is 10 and the number of participants is 2. In this first month, staff hours per participant is 5. Suppose further that in month 2, the number of staff hours remains at 10 but the number of participants increases to 4. In this second month, staff hours per participant is 2.5. If a given participant enrolled in the first month and dropped out in the second month, then average staff hours per participant-month for the participant would be the average of 5 and 2.5, or 3.75.

[6] This does not mean that the average participant in an average month worked directly with salaried IDA staff for 2.84 hours.

[7] For inputs, minima of zero occur because at least one program ran for at least one month without a type of input. For example, a program ran for a month without salaried employees, only volunteers. Maxima are high because, at the start of ADD, some programs had few participants but yet still had employees and expenses, and some programs provided financial

Volunteer-staff hours. Average hours worked by volunteers in an IDA program in a month, per participant-month at the participant level. The mean was 0.49, with a low of zero and a high of 7.89.

Partner-staff hours. Average hours worked by staff in a partner organization on matters related to IDAs in a month, per participant-month at the participant level. Mean hours were 1.06, with a low of zero and a high of 12.41.

Total staff hours. Average hours worked by salaried staff, volunteers, and staff of partner organizations in a month, per participant-month at the participant level. Mean total hours were 4.39, with a low of zero and a high of 29.56.

Salary expenses for IDA program. Salary expenses (with benefits) for an IDA program in a month, divided by the number of participants, and averaged across participant-months. Mean salary expenses were $46.31 per participant-month, with a low of zero and a high of $307.93.

Non-salary expenses for IDA program. Non-salary, non-match expenses for an IDA program in a month, divided by the number of participants, and averaged across participant-months. The mean was $24.07 per participant-month, with a low of zero and a high of $197.37.

Total expenses. The sum of salary and non-salary expenses in a month, divided by the number of participants, and averaged across participant-months. The mean was $70.38, with a low of zero and a high of $631.25.

Number of marketing activities. The number of types of marketing activities in a month by a program, divided by the number of months. The mean was 3, with a low of zero and a high of 7. The data record whether a type of activity took place, but they do not record its frequency.

Chapter 6 discusses inputs and costs in ADD, and Chapters 8 and 9 discuss the links between program inputs and saving behavior.

Participants

Number of participants. The sum of the number of participants at the end of each month for a given program, divided by the number of months. The mean number of participants per month is 81.72, with a low of 32.3 and a high of 217.8 (Table 3.1).

education to people prior to enrollment. If one of the handful of participants exited after a month or two, then the per-participant level of inputs per month for that participant would be very high.

Administrative Characteristics

Tables 3.2 through 3.7 present summaries of some administrative characteristics of the 14 ADD programs as of June 30, 2000. Thirteen host organizations submit data to CSD. One host organization sponsors two IDA programs; thus, the number of IDA programs in ADD is 14.

All 14 IDA programs in ADD were run by private, not-for-profit organizations. The most common type is a community development organization (6 programs, Table 3.2).

Table 3.2 Organizational Type

Organization Type	Number of Programs
Community Development Organization	6
Social-service Agency	2
Bank or Credit Union	2
Housing-development Organization	2
Collaborative	2

Table 3.3 shows that all programs in ADD matched home purchase, microenterprise, and post-secondary education. Job training, home repair, and retirement were also matchable uses.

Table 3.3 Matchable Uses

Use	Number of Programs
Home Purchase	14
Microenterprise	14
Post-secondary Education	14
Job Training or Technical Education	11
Home Repair or Remodeling	8
Retirement	4

In MIS IDA, programs list a single type of depository institution that holds IDA accounts, although some accounts in some programs are in more than one type of depository institution. The most common place listed was a bank or savings-and-loan institution (9 programs, Table 3.4). Five IDA programs listed a credit union (two IDA programs were run by credit unions).

Table 3.4 Type of Depository Institution

Type	Number of Programs
Bank or Savings-and-loan Institution	9
Credit Union	5

Table 3.5 Account Structure	
Account Ownership	**Number of Programs**
Only Individual	11
Only Host Organization	0
Both	3
Match Funds	
Kept in Separate Account	14
Mingled with Account of Participant	0
Periodicity of account statements	
Monthly	14
Quarterly[8]	0
Return on Account Balances	
Pays Interest	14
Does Not Pay Interest	0
Wait Period Required	
Yes	9
No	5
Penalties for Unmatched Withdrawals	
Yes	9
No	5
Match-cap Structure	
Annual	6
Lifetime	5
Both	3

At 11 programs, IDA accounts were held in the name of the participant; at three programs, accounts were held in the names of both the participant and of the host organization (Table 3.5).

All match funds were kept in a separate account in the name of the host. Participants did not receive match funds; checks for matches are made out to vendors.

Depository institutions sent monthly account statements to programs. The programs then entered or imported data on cash flows from the statements into MIS IDA. In turn, MIS IDA produced a monthly statement that was mailed to participants and that showed the matchable balance, the match that corresponds, and the matchable balance plus the match (and any excess balance).

IDA accounts in all 14 programs earned interest, sometimes above the standard passbook rate.

Six programs required a wait period between enrollment and matched withdrawals.

Nine programs stipulated penalties for unmatched withdrawals, but they did not enforce them consistently. All programs enforce an implicit penalty on unmatched withdrawals by not matching them. The loss of potential match dollars is a way to deter unmatched withdrawals and yet still allow participants to use their own funds as they judge best.

[8] Some participants at WSEP receive quarterly statements.

The match-cap structure sometimes varied among sites in a given program. Six programs have only annual match-cap structures, five programs have only lifetime match-cap structures, and three programs have both structures.

Through CFED, all ADD programs receive funds from 11 private foundations. Programs also received funds from public, for-profit, or individual sources (Table 3.6). The only change since June 30, 1999, is that four more programs received funds from public sources. IDAs are unique among policy proposals in that they invite both public and private funds.

Table 3.6 Types of Funding Partners

Types of Funding Partners	Number of Programs
Not-for-profit	14
Public	12
For-profit	9
Individual	2

All programs use face-to-face presentations to market IDAs to potential participants (Table 3.7). Most programs also use print-based marketing (newsletters, newspaper ads, and brochures). Since June 30, 1999, more programs have used lobbying and special committees to market the concept of IDAs to potential funders and partners.

Table 3.7 Types of Marketing Activities

Types of Marketing	Number of Programs
Face-to-face Presentation	14
Newsletter	12
Newspaper Ad	12
Brochure	13
Lobbying	11
Special Committee	11
Media	6
Telephone	3
Flyers	3
Other	4

4. Participant Characteristics

This chapter describes characteristics of the 2,378 participants in ADD as of June 30, 2000. It complements the description of the actual and intended use of matched withdrawals in Chapter 5, of the hours of financial education attended in Chapter 10, of income in Chapter 11, and of assets and liabilities in Chapter 14.

A *participant* is defined as an enrollee with at least one account statement in MIS IDA. This excludes enrollees who never opened an account and enrollees who opened an account but who did not have an account statement in MIS IDA by June 30, 2000. It includes enrollees who have account statements but who have exited without a matched withdrawal.

Participant characteristics are measured at enrollment.[1] In addition, some ADD programs update data that might change with time. This chapter uses the most recent data in MIS IDA because it has received the most thorough cleaning.

The characteristics of participants in ADD are defined and summarized below and in Table 4.1. Overall, participants mostly come from the "working poor" because most programs in ADD target this group. Among the "working poor", participants are disadvantaged in that they are disproportionately female, African-American, and never-married.

Participant Characteristics

Demographics

Gender. Female (80 percent) or male (20 percent).

Age. The average age at enrollment was 36, with a low of 13 and a high of 72. About 87 percent of participants were between 20 and 49 years of age.

Race/ethnicity. Whether the participant identified himself or herself as African-American (47 percent), Asian-American or Pacific-Islander (2 percent), Caucasian (37 percent), Latino or Hispanic (9 percent), Native American (3 percent), or "Other" (3 percent).

Residence. Whether the participant lived in an area with a population of 2,500 or more (87 percent) or with a population of less than 2,500 (13 percent).

[1] In this report, these and other descriptions of the characteristics of participants use the most recent data in MIS IDA. The regression analysis in Chapters 5, 8, and 9 use the participant characteristics that were recorded at enrollment.

Household Composition

Marital status. Never-married (49 percent), married (21 percent), divorced or separated (26 percent), or widowed (2 percent).[2]

Household type. Whether the household had one adult with children (44 percent, and 95 percent of these are single mothers with children), one adult without children (14 percent), two or more adults with children (31 percent), or two or more adults without children (9 percent).[3]

Children. Number of people 17 years of age or younger in the household. The average number of children was 1.7, and most households (76 percent) have at least one child.[4]

Adults. Number of people 18 years of age or older in the household. The average number of adults was 1.5, and 58 percent of households have only one adult.[5]

Multiple participants in household. Whether a participant was in a household that had at least one other IDA participant (6 percent).[6]

Education and Employment

Education. Whether the highest grade completed corresponded to less than a high-school diploma (15 percent), a high-school diploma or GED (24 percent), some college but no degree (37 percent), a 2-year college degree (6 percent), a college degree with 2-year or 4-year unspecified (8 percent), or a 4-year college degree or more (10 percent). Most participants (61 percent) attended some college.

Employment status. Whether employed full-time (58 percent), employed part-time (20 percent), unemployed (7 percent), not working (5 percent), a student but not working (5 percent), or a student and working (5 percent). *Not working* includes homemakers, the retired, and the disabled. *Unemployed* includes people who were laid-off and awaiting a call-back or who were seeking employment. Almost 90 percent of participants worked or were students.

Self-employed. Whether the participant had a business or self-employment income (19 percent).

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[2] Marital status is missing for 2 percent of participants who say that they are married but who report only one adult in the household.

[3] Household type is missing for the less than 1 percent of participants who report the receipt of child support but who do not report any children in the household.

[4] The number of children is missing for the less than 1 percent of participants who report the receipt of child support but who do not report any children in the household.

[5] The number of adults is missing for the 2 percent of participants who say that they are married but report one adult in the household.

[6] MIS IDA does not explicitly record cases of multiple participants in a household; we identified likely candidates by hand via a combination of last names, addresses, and phone numbers. IDAs are held by individuals, so there is nothing wrong with multiple accounts in a single household.

Financial

Income/poverty level. On average in ADD, household income divided by the family-size-adjusted poverty guideline was 111 percent (median 100 percent).[7] About 21 percent were under 50 percent of the poverty line, and 12 percent were over 200 percent of the poverty line. Chapter 11 discusses the association between income and saving behavior in ADD.

Welfare status. Whether the participant had formerly received AFDC/TANF (37 percent), or currently receives TANF (10 percent). All together, 38 percent of participants with non-missing data had received either AFDC or TANF at some point.

Received SSI/SSDI. Whether the participant received Supplemental Security Income or Supplemental Security Disability Insurance (10 percent).

Received food stamps. Whether the participant received food stamps (15 percent). All together, 50 percent of participants with non-missing data had received TANF, SSI/SSDI, and/or food stamps at enrollment or before.

Passbook savings account. Whether, in addition to the IDA, the participant had a passbook savings account (52 percent).

Checking account. Whether the participant had a checking account (69 percent). About 40 percent had both a passbook savings account and a checking account. About 80 percent had at least one of the two types of savings accounts, so 20 percent were "unbanked."

Direct deposit. Whether the participant used direct deposit into the IDA (5 percent). Data are missing for 15 percent of participants.

Health-insurance coverage. Whether the participant had private health insurance or Medicaid (51 percent). Data are missing for 24 percent of participants.

Life-insurance coverage. Whether the participant had life insurance (31 percent). Data are missing for 24 percent of participants.

Relationship with Host Organization or Partner Organizations

Employee of host organization. Whether a participant was an employee of the host (2 percent).

Previous relationship with host organization. Whether the participant had received services from the host before ADD (36 percent). Data are missing for 12 percent of participants.

Referred by partner organization. Whether the participant was referred to the IDA program by a partner organization (22 percent). Data are missing for 27 percent of participants. For participants without missing data, 62 percent had a prior relationship either with the host or with a partner organization.

[7] These data omit cases for which total income is missing.

Table 4.1 Participant Characteristics for ADD (N=2,378)

Demographics	
Gender	**%**
Female	80
Male	20
Age	
13 to 19	6
20s	27
30s	38
40s	22
50s	6
60 to 72	2
Race/Ethnicity	
African-American	47
Asian-American or Pacific Islander	2
Caucasian	37
Latino or Hispanic	9
Native-American	3
Other	3
Residence	
Population 2,500 or more	87
Population less than 2,500	13
Household Composition	
Marital Status	
Never-Married	49
Married	21
Divorced or Separated	26
Widowed	2
Missing	2
Household Type	
One Adult with Children	44
One Adult without Children	14
Two or more Adults with Children	31
Two or more Adults without Children	9
Missing	2
Children in Household	
0	24
1	25
2	26
3	14
4	7
5 or more	4

Household Composition *continued*	
Adults in Household	
1	58
2	32
3	6
4	1
5 or more	1
Missing	2
Multiple Participants in Household	
Yes	6
No	94
Education and Employment	
Education	
Did not Complete High School	15
Completed High School or GED	24
Attended College but No Degree	37
Completed 2-year Degree	6
Completed Unspecified Degree	8
Completed 4-year Degree or more	10
Employment	
Employed Full-time	58
Employed Part-time	20
Unemployed	7
Not Working	5
Student, not Working	5
Student, also Working	5
Self-employed	
Yes	19
No	80
Financial	
Income/Poverty (%)	
0 to 49	21
50 to 74	11
75 to 99	15
100 to 124	14
125 to 149	12
150 to 174	9
175 to 199	5
200 to 686	12
Missing	2

Financial *continued*	
Receipt of AFDC/TANF	
Formerly	37
Currently	10
Received SSI/SSDI	
Yes	10
No	77
Missing*	13
Received Food Stamps	
Yes	15
No	68
Missing*	17
Bank Account	
Passbook Savings Account	52
Checking	69
Both	40
Either	80
Direct Deposit to IDA Account	
Yes	5
No	81
Missing*	15
Health-Insurance Coverage	
Yes	51
No	25
Missing*	24
Life-Insurance Coverage	
Yes	31
No	45
Missing*	24
Relationship with Host or Partner Organization	
Employee of Host Organization	
Yes	2
No	98
Previous Relationship with Host	
Yes	36
No	53
Missing*	12
Referred by Partner Organization	
Yes	22
No	51
Missing*	27

*Missing values in the right-most column are due mostly to some early enrollees who were never asked questions that were added in later versions of MIS IDA. If less than 1 percent of cases were missing, then missing is not listed as a category.

ADD versus the General Low-income Population[8]

Differences in characteristics between ADD and the general low-income population depend largely on two factors. First, host organizations in ADD usually target people who work and who are at or below 200 percent of the poverty line. Within this target group, ADD participants probably reflect the populations already served by the host organizations, especially given that about two-thirds had a previous relationship with the host organization or were referred by a partner organization. These organizations include a wide range of community-development, social-service, financial-service, housing, and other organizations, all with a community-development or anti-poverty mission (Chapter 3 and Appendix C).

Second, ADD participants are self-selected; they themselves choose to participate. People who expect larger benefits from IDAs are more likely to choose to participate. Because people know their own characteristics and because these characteristics affect saving, the people who choose to participate in ADD differ systematically from the general low-income population and probably differ even from the overall populations served by the host organizations. This section highlights some key observed differences between ADD and the U.S. population at or below 200% of the income-poverty threshold.[9]

ADD had a greater percentage of females than the general low-income population:

Gender	ADD	General Low-Income
Female	80%	59%
Male	20%	41%

Compared to the general low-income population, ADD had fewer Caucasians, more African Americans, more Hispanics, and more Asian Americans, Native Americans, and "Others."

Race/Ethnicity	ADD	General Low-Income
African American	47%	16%
Caucasian	37%	64%
Hispanic	9%	16%
Asian American, Native American, Other	8%	4%

[8] This section is based on Sherraden *et al*. (2000).

[9] Comparison statistics use the Survey of Income and Program Participation (SIPP) from the U.S. Census Bureau. These data come from the ninth wave of the 1993 SIPP panel and refer to September 1995. The sample includes individuals 18-years-old and older in households with income at or below 200 percent of the family-size adjusted poverty threshold (not guideline). Annual income was computed as household income in September multiplied by 12. Employment status refers to the first week of September 1995. The "bank use" variable identifies individuals *living in households* that had a checking account or passbook savings account in the first quarter of 1995. The data are weighted by person-level weights provided by the Census Bureau. The steep decline in poverty since 1995 suggests that, all else constant, participants in ADD are probably more disadvantaged than the general population at or below 200 percent of the poverty line in 1995.

ADD had more people who had never been married and fewer people who were married:

Marital Status	ADD	General Low-Income
Never-married	49%	28%
Married	21%	42%
Widowed, divorced, or separated	28%	30%

The ADD population was more highly educated than the general low-income population:

Education	ADD	General Low-Income
Did not complete high school	15%	35%
High-school diploma or GED	24%	39%
Attended college but no degree	37%	18%
Graduated college (two-year or four-year)	24%	8%

ADD had a higher proportion of people who were employed:

Employment	ADD	General Low-Income
Employed full-time	58%	31%
Employed part-time	20%	11%
Unemployed	7%	6%
Not working or student	15%	52%

ADD had a greater proportion of people with a checking account and/or passbook savings account (in addition to their IDA):

Bank Use	ADD	General Low-Income
Checking and/or passbook savings	81%	67%
No bank account	19%	33%

Overall, perhaps the best way to describe the ADD population is that it was a "working poor" population as opposed to a general low-income population. This is by design—most programs in ADD target the "working poor," so a high proportion of the participants work. This is probably a large part of the explanation for the higher level of education in ADD and for the higher proportion of people who were banked.

In ADD, the higher proportion of women, African Americans, and never-marrieds probably reflects the populations served by the host organizations. These markers of disadvantage (female, African-American, and never-married) suggest that, among the "working-poor" population, somewhat more disadvantaged people are in ADD.

5. Enrollments, Deposits, and Withdrawals

This chapter presents data from ADD through June 30, 2000, on enrollments, deposits, unmatched withdrawals, matched withdrawals, and the uses of matched withdrawals. These aggregate outcomes matter not only because they suggest how people save in IDAs but also because they would inform efforts to expand access to IDAs. For example, financial intermediaries that might hold IDAs would want to know the likely number, frequency, and size of deposits and withdrawals. Likewise, new IDA programs can use the figures to plan and to set benchmarks.

As of June 30, 2000, ADD had enrolled 2,378 participants. Average monthly net deposits were $25.42, and 13 percent of participants had made matched withdrawals. About 37 percent of participants had made unmatched withdrawals from matchable balances.

Enrollments

In the first year of ADD, the pace of enrollment was slow, but it picked up to 70 to 90 enrollments per month after June 1998 (Figure 5.1). The pace peaked in the months before December 31, 1999 (the planned deadline for enrollment).

Figure 5.1 Enrollments in ADD (Monthly)

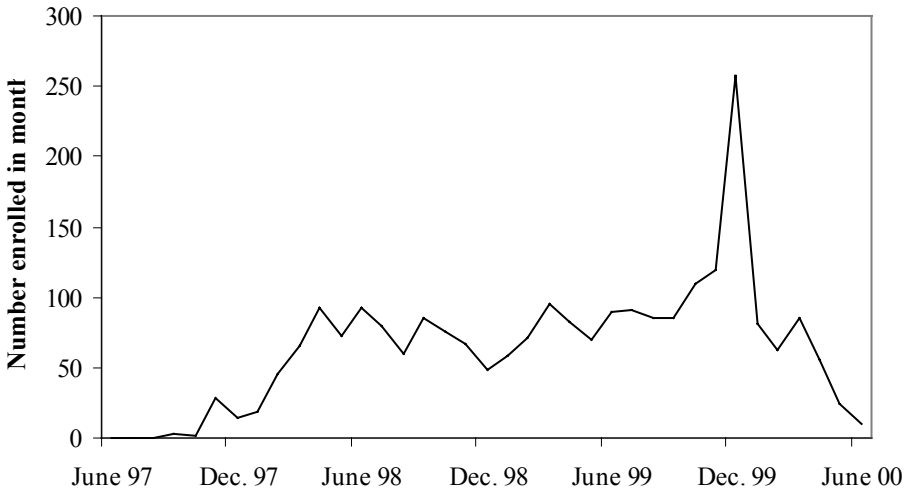
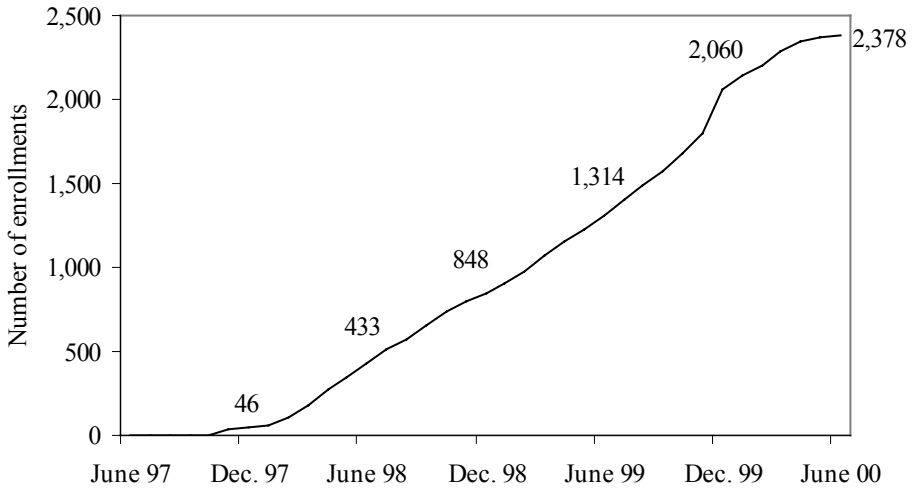


Figure 5.2 Enrollments in ADD (Cumulative)



In cumulative terms, ADD had 848 enrollments as of December 31, 1998 (Figure 5.2). By the planned deadline of December 31, 1999, ADD had 2,060 enrollees, 60 more than its goal. As of June 30, 2000, cumulative enrollment was 2,378.

Deposits

Net deposits in IDAs result from a number of types of cash flows, both deposits and withdrawals. Figure 5.3 depicts cumulative deposits and withdrawals in ADD through June 30, 2000.

Gross deposits are defined as cash flows into an IDA, including interest net of bank fees. As of June 30, 2000, cumulative gross deposits by the 2,378 participants in ADD were $1,312,643 (Figure 5.3 and Table 5.1). More than 99 percent of participants had made a deposit, and the gross deposit per participant was $552. The average length of participation was 13.3 months, and the average number of months per year with a deposit was 7.0 (deposit frequency was 58 percent). Gross deposits per month in all months were $41.43 (median $14.80). Excluding months without deposits, gross deposits per month were $70.90 (median $40.00).

Total unmatched withdrawals are defined as cash flows out of an IDA back to a participant that are not matched. As of June 30, 2000, cumulative unmatched withdrawals in ADD were $409,273 (Table 5.1).

Figure 5.3 Deposits and Withdrawals (Cumulative Dollars)

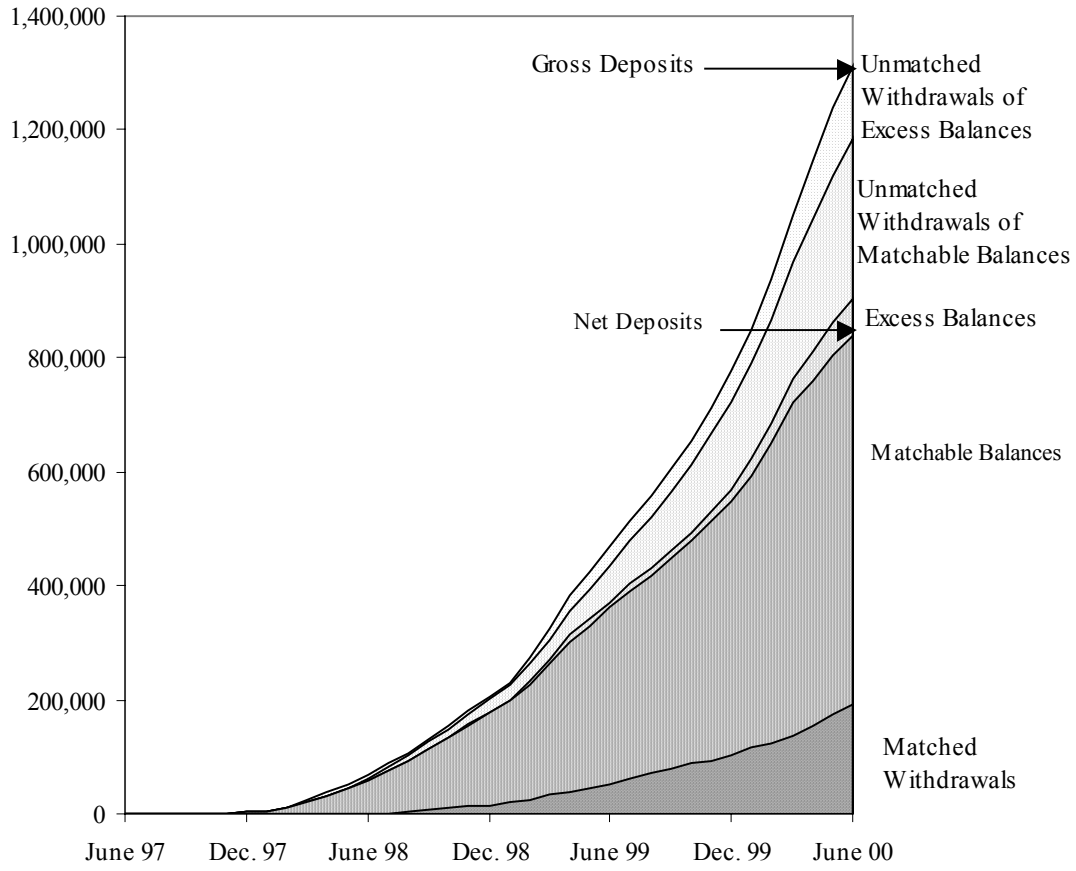


Table 5.1 Deposits, Withdrawals, and Matches (Cumulative Dollars)

Type of cash flow	Amount		Match	Amount plus Match
Gross deposits		1,312,643		
Unmatched withdrawals of excess deposits	126,799			
Unmatched withdrawals of matchable deposits	282,474			
Total unmatched withdrawals		(409,273)		
Excess balances		(64,927)		
Net deposits		838,443	1,644,508	2,482,951
Matchable balances	646,842		1,296,135	1,942,977
Matched withdrawals	191,601		348,373	539,974

Total unmatched withdrawals have two components: unmatched withdrawals of excess balances, and unmatched withdrawals of matchable balances.

Unmatched withdrawals of excess balances are defined as withdrawals of balances in excess of the match cap. There is no loss of a potential match because excess balances are not matchable. Through June 30, 2000, cumulative unmatched withdrawals of excess balances in ADD were $126,799 (Figure 5.3 and Table 5.1). About 9 percent of participants made, on average, 1.61 withdrawals of this type, and the average withdrawal was worth $362 (total $584).

Unmatched withdrawals of matchable balances are defined as withdrawals of deposits that could have been matched but were withdrawn for a non-matchable use. There is a loss of a potential match.[1] Through June 30, 2000, cumulative unmatched withdrawals of matchable balances in ADD were $282,474 (Figure 5.3 and Table 5.1). About 37 percent of participants made these withdrawals. This group averaged 2.9 withdrawals, each with an average value of $111 (total $320).

Excess balances are defined as balances in excess of the match cap.[2] As of June 30, 2000, excess balances in ADD were $64,927 (Figure 5.3 and Table 5.1). About 10.5 percent of participants had excess balances, and the average value for this group was $261.

Net deposits are defined as matchable balances, that is, gross deposits minus total unmatched withdrawals minus excess balances. As of June 30, 2000, cumulative net deposits in ADD were $838,443 (Figure 5.3 and Table 5.1). Average net deposits for all participants were $353.[3] The *average monthly net deposit*—defined as net deposits divided by months of participation—was $25.42 per participant, or 67 percent of the monthly savings target.[4]

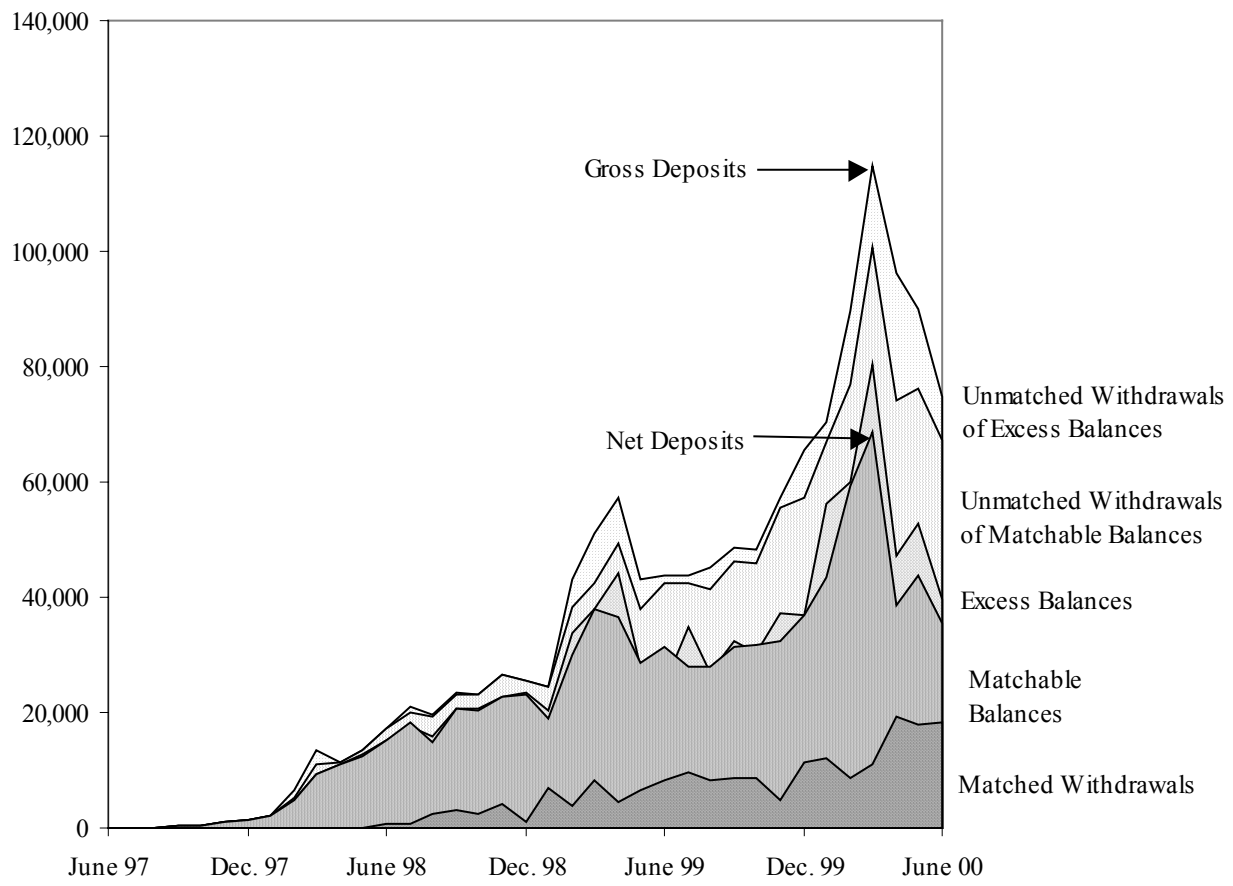
The average match rate per dollar of net deposits was 1.96:1, so the match that corresponded to net deposits was $1,644,508 (Table 5.1). If all net deposits were used in matched withdrawals, total asset accumulation would be $2,482,951. With exits included, this was $1,044 per participant; with exits excluded, it was $1,245 per participant.[5]

Net deposits have two components: match-eligible balances, and matched withdrawals.

Match-eligible balances are defined as balances under the match cap (adjusted for previous matched withdrawals) that may be matched. In ADD as of June 30, 2000, the match-eligible balance was $646,842 (Figure 5.3 and Table 5.1). The average match rate per dollar of these

[1] Of course, future deposits before the time cap may use the newly released match eligibility.
[2] For participants with annual match-cap structures, the total match cap increases with each year of participation, so excess balances in month 12 or 24 may become matchable in month 13 or 25.
[3] For the 82 percent of participants with positive net deposits, the average was $429.
[4] For those with positive net deposits, average monthly net deposit per participant was $30.90 (82 percent of the monthly savings target). Their average deposit frequency was 63 percent.
[5] Participants will make more deposits and more unmatched withdrawals before the end of ADD, so this figure is not a good estimate of the asset accumulation that will take place in ADD.

Figure 5.4 Deposits and Withdrawals (Monthly Dollars)



balances was 2.00:1, so the potential match was $1,296,135, for a total potential asset accumulation of $1,942,977.

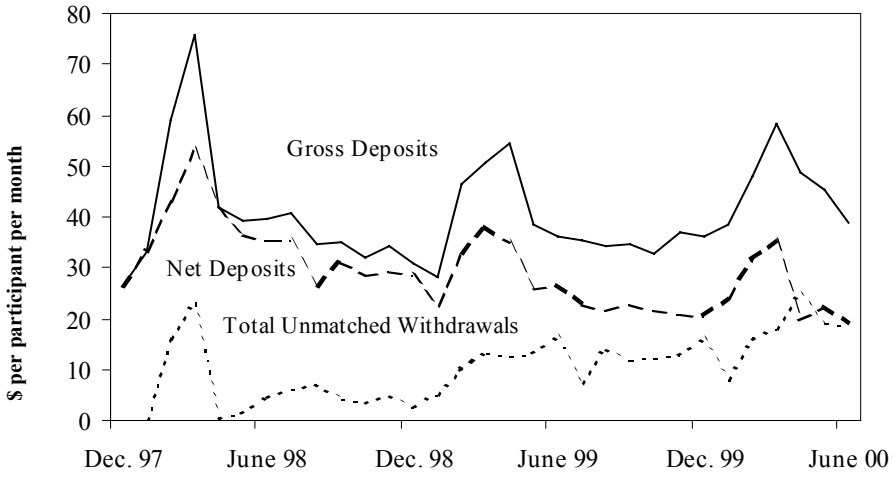
Matched withdrawals are defined as withdrawals for matchable uses. Cumulative matched withdrawals in ADD through June 30, 2000 were $191,601 (Figure 5.3 and Table 5.1). The average match rate per dollar of matched withdrawals was 1.82:1, so the match disbursed was $348,373. Cumulative actual asset accumulation through matched withdrawals was $539,974.

Seasonal Cash Flows

Cash flows varied by season (Figure 5.4). Net deposits increased in tax season, with a peak in March. Excess balances and unmatched withdrawals of all kinds were also higher in tax season. Perhaps some participants deposited into IDAs all or part of their tax refund and Earned Income Tax Credit.[6] Some theory and evidence (Beverly, Moore, and Schreiner, 2001; Beverly, Tescher, and Marzahl, 2000; Smeeding, 2000; Souleles, 1999) support this possibility.

[6] Some IDA programs in ADD explicitly encourage this saving technique.

Figure 5.5 Cash Flows per Participant by Month



The growth of cumulative figures due to growth in enrollment might confound the use of Figure 5.4 to detect seasonal patterns in cash flows. Figure 5.5 controls for this; for each month, it depicts per-participant gross deposits, net deposits, and total unmatched withdrawals. Gross deposits and net deposits increase markedly in February, March, and April. Total unmatched withdrawals do not spike in these months in the same way, although unmatched withdrawals do increase a month or two after tax season. Thus, deposits did increase in tax season, although some small share of the increase may have been removed as unmatched withdrawals a few months later.[7]

Matched Withdrawals

About 13 percent of participants in ADD had a matched withdrawal as of June 30, 2000 (Table 5.2). ADVOCAP had the highest percentage (40 percent); CAAB had the lowest (3 percent). Differences among programs are due at least in part to differences in participant characteristics, length of participation, and institutional structure. For example, matched withdrawals may be affected by the wait period, the time cap, the match cap, the match rate, and financial education.

As of June 30, 2000, the average participant with a matched withdrawal had 2.0 withdrawals with an average value of $304 (total $603, Table 5.2). Matches were $1,095 (average match rate 1.82:1), and average total asset accumulation in IDAs for matched uses was $1,698.

[7] Total unmatched withdrawals per participant per month have trended up, so it is possible that much of the above-average part of deposits in tax season are removed as unmatched withdrawals in the long term. We do not test here whether unmatched withdrawals are more likely by people who make unusually large deposits during tax season.

Table 5.2 Matched Withdrawals	
Item	**Value**
Number of Matched Withdrawals	631
Number of Participants with a Matched Withdrawal	318
Average Value of a Matched Withdrawal	$304
Percentage of Participants with a Matched Withdrawal	13
Number of Matched Withdrawals per Participant with a Matched Withdrawal	2.0
Value of Matched Withdrawals per Participant with a Matched Withdrawal	$603
Value of Matched Withdrawals plus Match per Participant with a Matched Withdrawal	$1,698

Matched withdrawals through time. The lower line in Figure 5.6 shows that the percentage of participants with a matched withdrawal increased with the length of participation at an increasing rate. For example, among participants who reached 12 months of participation before June 30, 2000, 9 percent had a matched withdrawal. Among participants who reached 24 months of participation, 27 percent had a matched withdrawal.[8]

The incidence of matched withdrawals increases as participation lengthens, probably because it takes time to build balances for a given planned use. Also, participants with annual (rather than lifetime) match-cap structures must wait to take full advantage of all of their match eligibility. Because their match eligibility increases with each year, they are probably more likely to wait longer to make matched withdrawals.

The lower line of Figure 5.7 shows the same pattern of increase at an increasing rate for the number of matched withdrawals per participant. The average participant had 0.16 matched withdrawals at 12 months and 0.60 at 24 months. As time passes and balances grow, people are more likely to take more matched withdrawals.

Together, Figures 5.6 and 5.7 suggest that the 9 percent of participants who had a matched withdrawal by month 12 averaged 1.8 withdrawals. By month 24, the 27 percent of participants with a matched withdrawal average 2.2 matched withdrawals.

Uses of matched withdrawals. Matches are restricted to withdrawals used to purchase certain assets. All ADD programs match for home purchase, post-secondary education, and microenterprise. Some also match for home repair, retirement, or job training. Some non-ADD IDA programs match purchases of cars or computers, but no ADD programs do.[9]

[8] Although ADD had run for almost three years by June 2000, the average length of participation was 13.3 months. The likelihood of a matched withdrawal by a given month in Figure 5.6 considers only participants who had participated at least that long. For example, only participants with at least 24 months of participation contribute to the figure for 24 months. Percentages after 24 months are not reported because few participants had that much experience, and their performance is not likely to have been representative of ADD as a whole.

[9] Some ADD participants used microenterprise withdrawals to buy a computer. In general, matched withdrawals for microenterprise encompass a wide range of items.

Figure 5.6 Percentage of Participants with a Matched or Unmatched Withdrawal Through Time

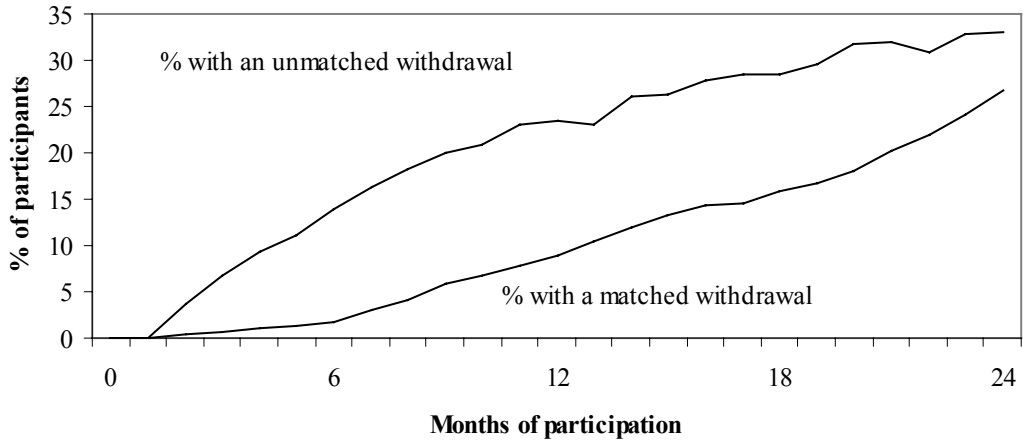


Figure 5.7 Number of Matched or Unmatched Withdrawals per Participant Through Time

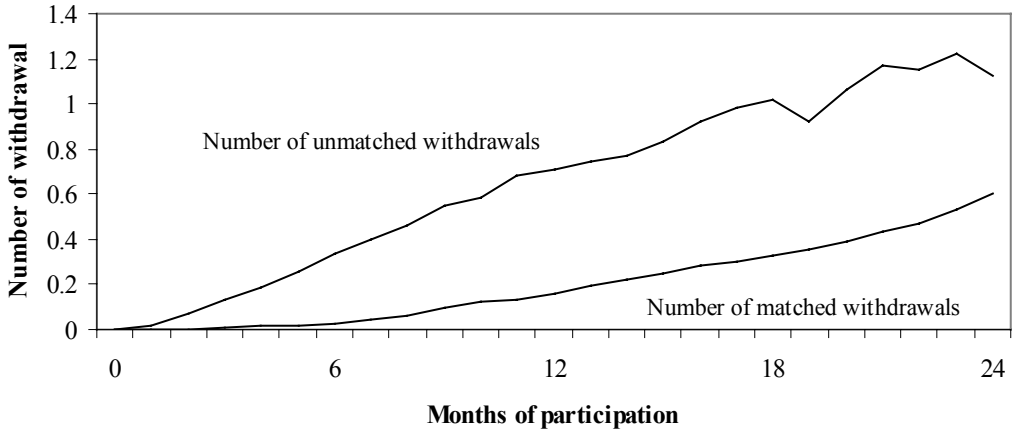


Table 5.3 Distribution of Intended Use of Matched Withdrawals for Participants without a Matched Withdrawal	
Use	**Participants (%)**
Home Purchase	57
Post-secondary Ed.	15
Microenterprise	18
Home Repair	4
Retirement	4
Job Training	2

Intended uses. As of June 30, 2000, 87 percent of ADD participants had not made a matched withdrawal. Of these, 57 percent reported that they intend to buy a home (Table 5.3). About 15 percent intend to use their IDA for post-secondary education, and 18 percent intend to spend on microenterprise. About 10 percent plan for home repair, retirement, or job training. The three matched uses proposed in Sherraden (1991) comprise 90 percent of intended uses.[10]

Actual uses. As of June 30, 2000, 13 percent of participants in ADD had a matched withdrawal. About 90 percent were for home purchase, post-secondary education, microenterprise, or home repair (Table 5.4). About 10 percent were for retirement or job training.

Compared to the distribution of participants by intended use, the distribution of participants by actual use shifts away from home purchase and toward post-secondary education, microenterprise, and home repair. Home purchase is a one-time event that requires a large lump-sum for a downpayment. Thus, it probably takes longer to build a sufficient balance. In contrast, purchases for post-secondary education, microenterprise, and home repair are possible with smaller sums, and so withdrawals can be useful even early in participation. This explains why the share of the number of participants for a matched use differs from the share of the number of withdrawals.

[10] Of course, actual use may differ from intended use, but data limitations prevent attempts to detect patterns in these changes. Also, the figures for intended use include participants who have exited without a matched withdrawal. Finally, the distribution of intended (and actual) uses in ADD reflects the missions and target groups of the host organizations; a broader IDA policy would probably have a different distribution of planned matched uses. For example, WSEP focuses on microenterprise, so a large share of its participants plan to use IDAs for microenterprise. Other host organizations, such as CTMHA, focus on housing.

Table 5.4 Distribution of Actual Use of Matched Withdrawals for Participants with Matched Withdrawals

Use	Participants (%)	Number of Withdrawals (%)	Value (%)	Value plus Match (%)
Home Purchase	24	18	31	33
Post-secondary Ed.	21	22	16	17
Microenterprise	24	30	20	22
Home Repair	20	20	18	17
Retirement	9	8	14	10
Job Training	3	2	1	1

Note: Participants with withdrawals for more than one type of use are counted once for each use.

Home purchase was 31 percent of the value of matched withdrawals (Table 5.4), with microenterprise 20 percent, home repair 18 percent, post-secondary education 16 percent, and retirement 14 percent. This and the distribution of the number of matched withdrawals suggests that withdrawals for home purchase and retirement are larger than for post-secondary education and microenterprise. Again, this probably reflects the lump-sum required as a downpayment on a home versus smaller, perhaps on-going purchases for microenterprise and post-secondary education.

Matched withdrawals per participant with a matched withdrawal. Table 5.5 shows that, on a per-participant basis, the largest matched withdrawals were for home purchase ($657) and retirement ($599). For homes, this may reflect lump sums for downpayments. For retirement, several factors may be at work. Asset shifts (Chapter 14) are one possibility; if someone already planned to make deposits in some other tax-advantaged account, then they could increase returns a lot if they put the money first in an IDA and then put the proceeds of a matched withdrawal in the tax-advantaged account. Matched withdrawals per participant for post-secondary education were $286, and for microenterprise they were $303. Withdrawals for home repair averaged $397, and those for job training averaged $182.[11]

Average match rates vary by use (Table 5.5). The rate is 2.0:1 for home purchase, 2.1:1 for post-secondary education, and 2.2:1 for microenterprise. The rate is 1.7:1 for home repair, 1.2 for retirement, and 1.8 for job training. These patterns probably reflect idiosyncracies among ADD programs more than any consistent logic that assigns different match rates to different uses.

[11] As ADD progresses, balances will probably grow, so matched withdrawals per participant—regardless of use—will also increase. This is true both for large, one-time uses and for smaller, possibly repeated uses. Thus, these figures will differ after ADD ends and all participants have made whatever matched withdrawals that they will make. Also, because ADD has time caps, these figures understate matched withdrawals in a broader program without time caps because some participants who will end ADD without a matched withdrawal would have had one, had ADD lasted long enough.

Table 5.5 Matched Withdrawals per Participant with a Matched Withdrawal				
Use	**Value ($)**	**Value plus Match ($)**	**Match Rate**	**# of Withdrawals**
Home Purchase	657	1,952	2.0	1.4
Post-secondary Ed.	286	885	2.1	1.9
Microenterprise	303	970	2.2	2.2
Home Repair	397	1,059	1.7	1.9
Retirement	599	1,301	1.2	1.6
Job Training	182	511	1.8	1.5

Note: This table excludes one matched withdrawal used for the purpose "other."

On average, participants who buy homes have fewer withdrawals (1.4, Table 5.5) than those who make withdrawals for post-secondary education (1.9), microenterprise (2.2), home repair (1.9), or retirement (1.6). This reflects the one-time nature of home purchase and the possibly repeated nature of the other uses. The differences probably will widen with time, because home buyers will not buy another home, but others will continue to make matched withdrawals for their uses.

Unmatched Withdrawals

As of June 30, 2000, 40 percent of participants had unmatched withdrawals (3.05 withdrawals per participant with an unmatched withdrawal). The average unmatched withdrawal was worth $141 ($431 per participant with an unmatched withdrawal).[12] Total unmatched withdrawals in ADD were $409,273 (Table 5.6).

Total unmatched withdrawals are all funds withdrawn but not matched. This includes funds withdrawn and not matched upon exit from ADD, balances left in an account upon exit (when withdrawn, these funds will not be matched), and funds withdrawn but not matched during participation. On average, participants with unmatched withdrawals had gross deposits of $760 and withdrawals of $431 (57 percent of gross deposits).[13]

Total unmatched withdrawals have two components: unmatched withdrawals of excess balances, and unmatched withdrawals of matchable balances.

Unmatched withdrawals of excess balances are withdrawals of balances in excess of the match cap. There is no loss of a potential match because the balances are not matchable. In ADD through June 30, 2000, cumulative withdrawals of excess balances were $126,799 (Table 5.6). About 9 percent of participants had this type of withdrawal, and this group averaged 1.6

[12] MACED had the lowest percentage of participants with unmatched withdrawals (5 percent); CAPTC Small-scale had the highest (64 percent).

[13] Do exits leave IDAs because they deposit too little or because they withdraw too much? For exits, gross deposits (and unmatched withdrawals from matchable balances) average $175. In contrast, unmatched withdrawals from matchable balances for non-exits who had such a withdrawal averaged $429. This evidence is far from conclusive (because unmatched withdrawals may depend on the length of participation and because non-exits participate longer than exits), but it suggests that people exit because they deposit too little.

Table 5.6 Unmatched Withdrawals			
Item	Total	From Excess Balances	From Matchable Balances
Value ($)	409,273	126,799	282,474
Number	2,896	350	2,546
Percentage of Participants with a Withdrawal	40	9	37
Average Amount Withdrawn	141	362	111
Withdrawals per Participant with a Withdrawal	3.05	1.6	2.9
Value per Participant with a Withdrawal ($)	431	584	320

withdrawals, with the average withdrawal worth $362 ($584 total). Withdrawals from excess balances were 31 percent of the value of total unmatched withdrawals.

From the perspective of subsidized savings, withdrawals of excess balances are not a deep concern. In many cases, they probably happen because people park funds in IDAs that they never intend to withdraw for matchable uses. Programs and financial institutions, however, do care about these withdrawals, if only because the additional transactions increase administrative costs.[14] From a development perspective, these withdrawals might matter if they are likely to be consumed rather than converted to another asset.

Unmatched withdrawals of matchable balances are defined as cash flows out of an IDA that could have been matched if used for a matchable purchase. There is a loss of potential match funds. In ADD through June 30, 2000, cumulative withdrawals of this type were $282,474 (Table 5.6). About 37 percent of participants had this type of unmatched withdrawal, and they averaged 2.9 withdrawals with an average value of $111 ($320 per participant with an unmatched withdrawal). Withdrawals from matchable balances are 69 percent of the value of total unmatched withdrawals.

Unmatched withdrawals from matchable balances were frequent and large; 37 percent of participants have made them in an average of 13.3 months of participation. Without these withdrawals and with all else constant, average AMND would increase 35 percent (from $25.42 to $34.30). Given the average match rate of 2:1, the average unmatched withdrawal of $111 cost $222 in lost potential matches.

From the point of view of a subsidized savings program that aims to improve long-term well-being, unmatched withdrawals of matchable balances are a concern. They suggest that participants forego a high rate of return (and the loss of future ownership of an asset) in exchange for cash that is likely used for current consumption.[15]

[14] At this point, we know little about these costs or about the potential profitability of IDAs.

[15] Some unknown share of unmatched withdrawals from matchable balances are due to people being kicked out of IDA programs because they did not save enough to fulfill program rules. Some unknown share of unmatched withdrawals may also be replaced before the end of ADD; participants with annual match caps can make deposits in excess of the annual cap in the current year to the extent to which they have made (in the current year) unmatched withdrawals of matchable balances from deposits in previous years.

Chapter 1 argues that the structure of IDAs offers strong incentives to make deposits and to maintain them for use in a matchable purchase. If this is true, then why are unmatched withdrawals from matchable balances so common? The data do not reveal the answer, but several explanations are possible. First, some participants may be very close to subsistence and have highly variable income and/or highly variable subsistence expenses. If income drops (or expenses spike, for example, due to job loss or illness), then the short-term need may outweigh the long-term cost of unmatched withdrawals.[16] Second, some participants may be short-sighted or unwise; to the detriment of their long-term well-being, they may make unmatched withdrawals in response to short-term consumption opportunities.[17]

Replacement of unmatched withdrawals from matchable balances. Do people who make unmatched withdrawals from matchable balances replace them, so that net deposits do not decrease in the long term? Regression results (available on request) suggest that gross deposits after an unmatched withdrawal are $10 to $30 higher than otherwise. Thus, there is some replacement, but it is incomplete; compared to other participants, participants with unmatched withdrawals from matchable balances have lower average monthly net deposits ($14.55 versus $31.84), lower average net deposits as a percentage of the pro-rated match cap (40 percent versus 84 percent), and lower average savings rates (1.5 percent versus 3.1 percent).[18]

Unmatched withdrawals and policy. Should IDA programs discourage unmatched withdrawals? If participants expect that they will fail to resist when tempted by short-term consumption opportunities, then IDA programs would do them a favor to restrict unmatched withdrawals. This would allow enrollees to commit to protect themselves from their own short-sightedness. Beverly, Moore, and Schreiner (2001), Shefrin and Thaler (1988), and Maital (1986) describe why people—poor or non-poor—are often short-sighted. Moore *et al*. (2001) report that some participants in ADD seem to appreciate the formal and informal institutional restrictions on unmatched withdrawals because they believe that the restrictions protect against moments of weakness. Third, people may not be aware of ways to resolve their problems without resorting to an unmatched withdrawal.

On the other hand, if unmatched withdrawals from matchable balances are tightly restricted and if some participants expect that they may want to make unmatched withdrawals in an emergency, then they may choose not to enroll in an IDA program, or they may choose to wait to make deposits until the time-cap deadline. That way, if they do suffer a shock, they will avoid the transaction costs of an unmatched withdrawal. Results in Schreiner *et al*. (2000) lead to the speculation that this might be the case for some participants in ADD. If restrictions on withdrawals lead people to save outside of IDAs until a time-cap deadline, however, then net

[16] Even if participants themselves do not suffer shocks, members of a social network may ask for help (and cause unmatched withdrawals) if they suffer shocks (Chiteji and Hamilton, 2000).

[17] Participants who graduate (Chapter 8) sometimes made unmatched withdrawals from matchable balances left over in their accounts after a matched purchase. As of June 30, 2000, such cases were 3 percent of the value of unmatched withdrawals from matchable balances. For comparison, exited participants had 19 percent, and active participants had 78 percent.

[18] Of course, this simple analysis does not reveal the extent to which the factors that lead to low net deposits also cause unmatched withdrawals, nor the extent to which the factors that cause unmatched withdrawals lead to low net deposits.

deposits may decline because this cash is more likely to be spent, regardless of emergencies or restrictions on withdrawals (Beverly and Sherraden, 1999; Bernheim, 1997; Caskey, 1997; Thaler, 1990).

For the poor, emergencies are a fact of life. One of the few ways that IDAs might do harm would be to put the cash of the poor out of reach. At the same time, some constraints on withdrawals may help some people to maintain deposits. The current institutional structure for IDAs in ADD, with informal sanctions for unmatched withdrawals from matchable balances but no formal restrictions, does not go to either extreme and may capture some of the benefits of both.

Unmatched withdrawals from matchable balances through time. The upper line of Figure 5.6 shows that the percentage of participants with an unmatched withdrawal from matchable balances increased with the length of participation at a decreasing rate. For example, 23 percent had an unmatched withdrawal after 12 months, but 33 percent had one after 24 months.

The upper line of Figure 5.7 shows a similar pattern (increase at a decreasing rate) for the average number of unmatched withdrawals of matchable balances per participant. Participants averaged 0.70 of these withdrawals by the 12th month and 1.13 by the 24th month. Together, Figures 5.6 and 5.7 suggest that the 23 percent of participants with this type of unmatched withdrawal by month 12 averaged 3.0 withdrawals. By month 24, the 33 percent of participants with these withdrawals averaged 3.4 withdrawals. Perhaps some new participants try to save but soon find that they need the cash for some other purpose. As participants gain experience, unmatched withdrawals slow down. Still, unmatched withdrawals of matchable balances continue due to people who have small, left-over balances or due to emergencies that strike participants after the first few months. It may also be that participants who are unlikely to make unmatched withdrawals from matchable balances tend to participate for a longer time. Or, perhaps participants who by chance make early unmatched withdrawals become discouraged and exit sooner. Whatever the causes, the risk of an unmatched withdrawal is higher for participants in the first few months, and lower for participants who reach later months.[19]

Participant and Program Characteristics and Unmatched Withdrawals of Matchable Balances

Knowledge of the factors linked with unmatched withdrawals of matchable balances may help to improve program design. It may also help to identify participants who, because they are at-risk of unmatched withdrawals, might benefit from extra attention from staff. To this end, we analyze how a wide range of program and participant characteristics were associated with whether a participant had an unmatched withdrawal of matchable balances.

[19] This is not to say that longer participation causes fewer unmatched withdrawals. Few unmatched withdrawals may sustain participation, or maybe they both cause each other.

Regression Model

A regression model estimates the sign, size, and statistical significance of the association between an outcome (the presence of an unmatched withdrawal from matchable balances, the dependent variable) and characteristics assumed to cause the outcome (the independent variables).[20] Estimates of associations from regression are usually closer to the true associations than are estimates from tabular comparisons because regressions control for correlations among independent variables.

The dependent variable is dichotomous (someone either has made a matched withdrawal or has not made one), so a probit model is used (Kennedy, 1998). The model includes a large number of control variables: 9 institutional characteristics, and 27 participant characteristics.[21] Chapter 8 discusses the regression technique further.

The probit regression results are not presented here to save space, but they are available on request. The independent variables are the same as in the regression in Chapter 8, but the dependent variable here is the presence of an unmatched withdrawal from matchable balances.

Program Characteristics

Match rate. Given that higher match rates increase the opportunity cost to participants of unmatched withdrawals of matchable balances,[22] it is not a surprise that higher rates were linked with less risk of unmatched withdrawals. For example, with other factors in the model constant, the likelihood of an unmatched withdrawal was 12.3 percentage points less with a match rate of 4:1 to 7:1 than with a match rate of 1:1 (84-percent confidence). This is a large effect; the change would reduce predicted risk from 40 percent to 27 percent. A 2:1 match rate—compared with a match rate of 4:1 to 7:1—was associated with an increase in risk of 11.3 percentage points (84-percent confidence). Estimated risk for a match rate of 3:1 is 6.9 percentage points higher than for a match rate of 4:1 to 7:1, but the difference is not statistically significant.[23]

Match caps. A higher match cap (and thus a higher monthly savings target) is linked with a large, statistically significant decrease in the risk of unmatched withdrawals. A $5 increase in

[20] Of course, regression does not control for characteristics omitted from the model, and all regressions omit some characteristics that influence the outcome. As in Chapters 8 and 9, the regression here uses at-enrollment data, although descriptions of participant characteristics in other chapters use the most recent data.

[21] Characteristics were selected if they were in MIS IDA, were expected to influence the outcome, had sufficient variation, and were unlikely to be caused by outcome.

[22] Participants in 401(k) plans do not face a similar opportunity cost; they keep their matches even if they take a hardship withdrawal of their own deposits, except if they leave a job before they are fully vested.

[23] Some programs have a single match rate (and/or a single match cap) for all their participants, but some programs have—within a single program—different groups of participants with different match rates (and/or different match caps). The estimated effects are derived from those programs where the match rate (or the match cap) varies among groups of participants.

the monthly savings target reduces the predicted risk of an unmatched withdrawal by 1.4 percentage points. This may be partly an institutional effect, if a higher match cap leads participants to believe that greater effort to maintain deposits is worthwhile. It may also be partly an economic effect, if unmatched withdrawals may lead to being kicked out, because the opportunity cost of being kicked out is higher as the match cap is higher.

Match-cap structure. Compared with an annual match-cap structure, a lifetime structure is linked with a decrease in the risk of unmatched withdrawals from matchable balances of 13.4 percentage points.[24] This is a huge effect; this element of institutional structure can change the likelihood of unmatched withdrawals by one-fourth.[25] We do not know for certain why this would be, but three speculative explanations are possible. First, people with annual match caps must wait longer to take advantage of their full match-eligibility. The longer wait increases the likelihood of an emergency that would require an unmatched withdrawal. Second, people with annual match caps lose match eligibility if they do not save up to the match cap in each year. This loss could lead to discouragement, exit, and/or unmatched withdrawals. Third, people with annual structures may push themselves to deposit as much as they can before the end of a participation-year so as not to lose any eligibility. They may thus make some deposits that they cannot afford and that soon become unmatched withdrawals.[26] In contrast, participants with lifetime structures do not lose match-eligibility if they do not make deposits each year, so they can wait to make deposits until they know that they will not have to make an unmatched withdrawal.[27]

Program inputs. The links between program inputs per participant-month (hours of volunteer staff, hours of partner staff, and dollars of salary and non-salary expense, averaged across all months of participation for each participant) were not statistically different from zero. The only program input with a statistically significant link was hours of salary staff; an additional dollar increased the risk of unmatched withdrawals by 6.8 percentage points. These results are a puzzle; institutional and economic theory both suggest that more program inputs in terms of hours (or higher quality hours) from staff should decrease the risk of unmatched withdrawals.

Unobserved program characteristics. Unobserved factors[28] correlated with a given program were also correlated with the risk of unmatched withdrawals from matchable balances. The

[24] The link is statistically significant with 96-percent confidence.

[25] Unfortunately, this finding is policy irrelevant—at least for large, publicly funded IDA programs—because annual match-cap structures are inevitable.

[26] Although no instances have been observed, participants in ADD can circumvent the limits of an annual match-cap structure with deposits late in the participation-year up to the match cap, followed by unmatched withdrawals early in the next year. For example, with a $500 annual match-cap structure, a deposit of $500 in month 12 followed by an unmatched withdrawal of $500 in month 13 would leave the person eligible for matches on deposits of up to $1,000 by the end of month 24. Given the high returns in IDAs, even cash-strapped people might choose to finance such a scheme with short-term loans from pawn shops, check-cashing outlets, or friends.

[27] Results in Chapters 8 and 9 are consistent with these last two points; people in annual structures are more likely to exit, but, if they do not exit, they have higher AMND.

[28] All unmeasured factors not in MIS IDA and/or in the regression model are “unobserved”.

effects were large and statistically significant; unmatched withdrawals may depend on institutional elements omitted from the regression.[29]

We do know something about some program characteristics omitted from the regression due to lack of quantitative data or insufficient variation. For example, formal rules for unmatched withdrawals vary widely across programs. Participants in some programs may withdraw funds at will. In other programs, unmatched withdrawals require a signature from the program, and requests for the signature trigger counseling from staff. In still other programs, participants make withdrawals at will but receive gentle phone calls from staff in subsequent months. To avoid these calls, participants may try to avoid unmatched withdrawals. Finally, the rules in some programs make unmatched withdrawals grounds for dismissal.

Programs do not consistently enforce formal sanctions for unmatched withdrawals from matchable balances. Qualitative inspection of the regression results does not suggest a strong link between the likelihood of an unmatched withdrawal and the presence of formal sanctions.

In sum, rules meant to discourage unmatched withdrawals may or may not be effective; the nature of the data from ADD preclude strong statements about the exact size of possible effects.

Participant Characteristics

Demographics. All else constant, the risk of an unmatched withdrawal from matchable balances had no statistically significant link with gender, residence, the number of adults or children in the household, or the number of IDA participants in the household. Risk increased at a rate of 0.62 percentage points per year until 40 years of age, after which additional years had no effect. Widowed people were 9 percentage points more likely to make unmatched withdrawals than married people, and people who never married or who were divorced or separated were about 5 percentage points less likely to take an unmatched withdrawal than married people.

With regard to race/ethnicity, the likelihood of an unmatched withdrawal from matchable balances was statistically the same (with other factors in the model constant) for African Americans, Native Americans, and Caucasians. Compared with these three groups, Hispanics, Asian Americans and "Other" were 12 to 17 percentage points less at-risk, and the differences were statistically significant.[30] AMND was about $8 lower for African-Americans and for Native Americans than for Caucasians (Chapter 12); the results here suggest that this difference was probably not due to a higher risk of unmatched withdrawals.

Education and employment. People who completed high school or who attended college but did not get a degree were more at-risk of an unmatched withdrawal than people with any other education status. The result that people who did not complete high school are nonetheless good

[29] Unobserved participant characteristics that vary between programs may also matter. Both sources of unobserved systematic correlation are probably present to some degree.

[30] As discussed in Chapter 12, race/ethnicity is likely correlated with a wide range of unobserved factors that are also correlated with the risk of unmatched withdrawals, so these associations should not be attributed to inherent differences between groups.

IDA savers appears in several analyses in this report. We do not have a good explanation for it unless it is related to links between lack of education, EITC payments, and IDA deposits.[31]

Employment status had no statistically significant effect on the risk of an unmatched withdrawal. Likewise, the self-employed were no more likely to have an unmatched withdrawal than were the non-self-employed.

Compared with other participants, employees of a host organization who were also IDA participants we about 15 percentage points more likely to have had an unmatched withdrawal. This is a surprise, because employees should be subject to greater institutional forces that encourage the maintenance of balances. Perhaps IDA staff convince fellow employees to enroll, but the employees never commit themselves on their own to IDAs. Perhaps for similar reasons, people referred to IDAs by partner organizations also were more at-risk of unmatched withdrawals.[32]

Income and public assistance. None of the measures of income or of receipt of public assistance had statistically significant links with the risk of an unmatched withdrawal from matchable balances. This is consistent with the speculation in Chapter 11 that the effects of institutional factors are both greater than the effects of income and are stronger for the very poor.

Assets, liabilities, and insurance. Compared with non-owners, owners were much less likely to make unmatched withdrawals.

For example, an additional $100 in a passbook account was linked with a decrease in risk of 0.23 percentage points.[33] Ownership of a checking account—regardless of balance—was linked with a decrease in risk of 11 percentage points; furthermore, each $100 of additional balance was linked with a decrease of 0.5 percentage points. Home ownership was linked with a very large reduction (almost 13 percentage points), and car ownership is linked with a 6.8-percentage-point reduction. The total measured value of assets had no effect, and liabilities also had no effect, perhaps because both assets and liabilities contain measurement error.

Asset ownership may be correlated with reduced unmatched withdrawals for several reasons. First, ownership may proxy for unobserved skills in financial management and resource allocation that reduce the need to make unmatched withdrawals. Second, ownership may proxy for unobserved preferences for saving (or future orientation) that increase the mental cost of unmatched withdrawals. Third, ownership signals the presence of resources that, in case of emergency, might be used instead of unmatched withdrawals. Fourth, ownership may have a

[31] People who did not complete high school may earn less and get larger EITC checks. If so, and if participants save more, dollar-for-dollar, from EITC than from other sources, then low education may proxy for this link between IDAs and EITC.

[32] It is also possible that referrals were more likely than non-referrals to receive some IDA services (such as financial education) from the partner organization rather than from the IDA program itself. If so, and if the IDA program provided better services, then this might explain the correlation observed in the data.

[33] Mere ownership of a passbook savings account had no statistical effect on risk.

wide range of psychological, social, and political effects (Chapter 1) that decrease the need to draw down assets to cope with an emergency.

Health insurance (including Medicaid) was linked with an 8-percentage-point increase in unmatched withdrawals. This is a puzzle because health insurance should dampen the financial shock of illness and thus reduce the need for unmatched withdrawals. People with life insurance, however, were 7 percentage points less at-risk (77-percent confidence). Perhaps life insurance is correlated with unobserved factors—such as future orientation—that also decrease the risk of unmatched withdrawals. This, however, is speculative.

Other factors. A previous relationship with the host organization had no statistically significant association with the risk of an unmatched withdrawal from matchable balances. This seems odd because the institutional connection would be expected to increase success in IDAs. It is consistent, however, with the observed higher risk for participants who are also employees of the host organizations. It also fits the result that participants referred by partner organizations were 12 percentage points more likely than people without an institutional referral to have unmatched withdrawals. Perhaps people who are nudged to join an IDA program do not do as well as those who choose to come on their own.

Finally, people who use direct deposit to an IDA account had the same risk of an unmatched withdrawal as people who do not use this institutional pre-commitment mechanism. Also, people with more than one IDA were 33 percentage points more likely to make an unmatched withdrawal.

Summary

A summary of the key points in this chapter follows.

- As of June 30, 2000, ADD had 2,378 participants.
- Average AMND was $25.42, an average of 67 percent of the monthly savings target. At this rate and with an average time cap of 33 months and with an average match rate of 2:1, the typical participant in ADD will save about $840 and accumulate about $2,500.
- Deposits peaked in tax season, probably because of tax refunds and EITC payments.
- As of June 30, 2000, 13 percent of participants had made matched withdrawals. The average participant with a matched withdrawal had 2.0 withdrawals of $304 each (total $603).
- Of participants who had not made a matched withdrawal, 57 percent planned for home purchase, 15 percent for post-secondary education, and 18 percent for microenterprise.
- Unmatched withdrawals were surprisingly frequent and large. The 37 percent of participants with an unmatched withdrawal from matchable balances averaged 2.9 withdrawals of $111 each (total $320). In the absence of unmatched withdrawals, average monthly net deposits would have been 35 percent higher. The average unmatched withdrawal cost $222 in lost

potential matches. The presence of these withdrawals, in spite of their high opportunity costs, may reflect the difficulty of saving, even within the supportive structure of IDAs, for people who, due to their closeness to subsistence, have frequent emergencies.

- In a regression, higher match rates and higher monthly savings targets were linked with lower risk of an unmatched withdrawals from matchable balances.

- The risk of an unmatched withdrawal had no statistically significant link with gender, income, or the receipt of public assistance.

- The risk of an unmatched withdrawal was lower for owners of homes, cars, and bank accounts.

6. Inputs and Costs

The social worth of IDAs depends on their benefits and costs. Measurement of benefits must wait for data from the experimental-design component of ADD. Even without knowledge of benefits, however, knowledge of costs is still useful.

This chapter discusses inputs and costs and what they may mean for IDA policy.[1] In ADD, program costs (without matches) were $70.38 per participant-month ($2.77 per dollar of net deposits). Although data are imperfect (and the biases push measured costs up) and although costs may decrease as programs grow and learn, these figures highlight the importance of continued commitment to efficiency and the importance of research on the effectiveness of different elements of the bundle of services in IDAs.

Why Measure Costs?

Wise allocation of scarce resources requires some knowledge of costs. All resources have opportunity costs; a dollar used in an IDA is removed (at least implicitly) from some other use. What matters is not that IDAs have positive net benefits for participants nor that IDAs have positive net benefits for society as a whole. Rather, what matters is that the social net benefits due to the use of resources in IDAs exceed the social net benefits of those resources in their best alternative use.[2]

The measurement of the benefits of IDAs awaits data from the experimental-design component.[3] In the meantime, cost measurement can inform policy and program choices. Cost measurement sets a benchmark for performance and may prompt greater efforts to improve efficiency (Schreiner and Yaron, forthcoming; Devarajan, Squire, and Suthiwart-Narueput, 1997).

Policy debate sometimes lacks an explicit concern for costs.[4] CSD, however, has supported careful cost assessment for IDAs. For CSD in its role as an evaluator, cost assessment is essential for informed judgements.[5]

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[1] This chapter draws on Schreiner (2000b) and Sherraden (2000).

[2] Governments may be concerned more with fiscal impact than with social impact. Of course, fiscal impacts matter, but only inasmuch as they affect social impacts.

[3] Clones *et al*. (1995) presents a *pro forma* benefit-cost analysis for IDAs. Schreiner (2000b) describes the design of the financial benefit-cost analysis for ADD.

[4] Proponents of policies have incentives to over-report benefits and under-report costs. For example, most literature on IDAs ignores costs and focuses on potential positive impacts and testimonials from successful participants. Of course, the measurement of benefits is extremely difficult—much more difficult than the measurement of costs—especially because many important benefits are subtle, long-term, non-financial, and diffuse. For example, the most important impact of IDAs may be to shift the asset-policy paradigm from exclusion to inclusion (Sherraden, 1991). This potential benefit, however, is not amenable to quantitative measurement.

Inputs and Costs in ADD

Inputs and productivity. *Productivity* is defined as inputs per output. Inputs differ from costs in that inputs are not in financial terms. An example of an input is an hour of work by salaried staff of an IDA program.[6] MIS IDA records inputs in terms of hours worked by salaried staff of the IDA program, by staff of partner organizations, and by volunteers.

Examples of outputs for IDAs include enrollments, participant-months, or dollars of net deposits. Although outcomes and benefits derive from outputs, outcomes are not outputs, and outputs are not benefits. For example, the outcome of a participant-month (and the benefit of an outcome) varies across participant-months.

Like most processes, IDAs produce a bundle of outputs (for example, asset accumulation with financial knowledge). The units of *enrollments* or *participant-months* capture the aspects of this bundle better than narrower units such as *dollars of net deposits.*

Inputs in ADD. Salaried staff worked 2.84 hours per participant-month. Production also used partner staff (0.49 hours per participant-month) and volunteers (1.06 hours). In total for ADD, the average participant-month used 4.39 hours of all types of staff.

Productivity does not tell the whole story because production uses more than one type of input and because inputs are substitutable. For example, an IDA program might improve productivity in terms of salaried staff hours per participant-month if it replaced lower-quality, lower-paid staff with volunteers or with higher-quality, higher-paid staff.

Costs and efficiency. *Efficiency* is defined as costs per output. *Absolute efficiency* means minimum costs for a given output; *relative efficiency* means lower costs than an alternative.

Efficiency tells a more complete story than productivity because efficiency converts inputs in different units to financial values in a single unit. For example, this helps to check whether it takes more resources to produce a given output with many hours by lower-quality, lower-paid staff or with fewer hours by higher-quality, higher-paid staff.

Costs in ADD. In addition to salaries, MIS IDA records non-salary expenses such as consultant fees, rent or mortgage, equipment, utilities, supplies, travel, and miscellaneous. These data put costs in ADD at $70.38 per participant-month ($46.31 in salary expenses, and $24.07 in non-salary expenses). With an average length of participation of 13.3 months, each enrollment costs

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Two other papers on IDAs discuss costs. Sherraden (1991) assumes that program costs will be low and focuses on costs to the government for transfers of match funds. For society as a whole, however, matches are not costs. Clones *et al*. (1995) assume that program costs will be about 10 percent of matches. In ADD so far, however, program costs exceed matches.

[5] Sherraden (2000, p. 2) says that "In the short term, cost data can be discomfiting, but ultimately knowledge of costs leads to better policies and programs."

[6] The cost of this input is the wage paid to the worker.

about $940.[7] Given AMND of $25.42, each dollar of net deposits costs $2.77. For comparison, a detailed assessment at the experimental-design program in ADD found costs of $84 per participant-month, $506 per enrollment, and $2.31 per dollar of net deposits (Schreiner, 2000a).[8]

With a 2:1 match, total cash outlays in IDAs in ADD by society as a whole were thus roughly $6 per $1 of net deposits ($1 savings, $2 match, and $3 program expenses). This is $2 of total outlays per $1 of asset accumulation.

Are costs in ADD high or low? We have no good benchmark against which to judge whether costs in ADD are high or low. The ultimate criterion is whether benefits exceed costs, but we have not measured benefits yet. Furthermore, we do not know how low costs can go; the possible efficiency of an IDA program is unknown. IDAs are young, and although some current practices are better than others, best practices continue to evolve.

We do know that these short-term cost estimates for ADD overstate long-term costs. Programs in ADD were among the first IDA programs in the world, and they incurred large start-up costs to do things that they (and perhaps other IDA programs) will build on in the future. For example, they had to establish relationships with banks and funders, and they had to develop financial-education materials, sometimes in more than one language (Sherraden *et al*., 1999).[9] Time and growth—both of individual programs and of the IDA field—should reduce these costs.

ADD does suggest that costs decrease with time. Program expenses (salary and non-salary) per participant-month through June 30, 1999, were $117.58; in the next 12 months, costs averaged $43.06. Likewise, costs per dollar of net deposits through June 30, 1999, were $3.66, but they were $2.20 for the next 12 months.[10] Costs in ADD decreased through time.[11]

Cost data are biased upwards to some unknown extent because they do not exclude the cost to programs of participation in the evaluation of ADD. For example, some programs used large

[7] Of course, this figure depends on the length of participation.

[8] This excludes costs borne voluntarily by private entities (Schreiner, 1997). These cost figures exclude displacement costs, non-financial costs, and all indirect costs. Schreiner (2000a) and Sherraden (2000) discuss cost measurement at the experimental-design program further.

[9] Because the number of IDA programs has exploded since ADD started and because programs in ADD were among the first IDA programs, staff at ADD programs often did work that directly helped other IDA programs or the field as a whole. Examples included involvement in federal and state policy development, technical assistance to other IDA programs, and occasional media attention. Our data on inputs and costs do not adjust for this, and this imparts an upward bias to the cost estimates.

[10] AMND as of June 30, 1999, was $33.24. In the next 12 months, it was $20.89. This sharp decline fits the $7.43 decrease (Chapter 7) in AMND from June 30, 1999 to June 30, 2000. For the average over the lifetime of ADD to fall more than $7 in one year, AMND in that year had to fall by even more than $7.

[11] We do not know how much more costs may decrease in the future.

amounts of resources to update participant socio-economic data.[12] Data cleaning also consumed staff time, as did semi-annual ADD conferences.

In general, the data on costs and inputs for ADD are measured with a large amount of error.[13] In particular, host organizations in ADD did not track their IDA programs as distinct cost centers, and we had no way to do cross-checks. MIS IDA asked programs to provide data on inputs and costs used for IDAs, but the programs themselves had to figure out how to allocate staff time and expenses across multiple programs. Some programs allocated some costs to IDAs that should have been allocated elsewhere, and this imparts an upward bias to cost estimates.

The number of participant-months is understated. Some programs—in particular CAPTC—provide financial education before enrollment. The costs of these classes are included here, but the outputs are not.

Some programs in ADD are very small (for example, MACED, ADVOCAP, Heart of America, and Alternatives FCU all have less than 100 participants). It is difficult for these programs to take advantage of economies of scale. A broad, permanent IDA policy would likely work through a few large organizations rather than through many small ones.

Most programs have costs within $10 of the ADD average, but the range is wide. The least-costly program (Alternatives FCU) spent $31.50 per participant-month through June 30, 2000, and most-costly program spent $126.09. Cost structures in ADD vary widely across programs, and there are cost structures below the average of $70.38 per participant-month.

IDAs versus cash transfers. Rather than spend $70.38 per month on program expenses to produce $25.42 in net deposits, why not send each participant a check for $70.38 and dispense with the IDA program and the need to save? For several reasons, the comparison is not this straightforward. First, IDAs require some saving effort from participants. Thus, IDAs are self-targeted to those people able and willing to sacrifice today for a better tomorrow. Cash transfers are not as precisely targeted, and cash transfers also have non-trivial administration costs.

Second, IDAs delay cash disbursement for matches, and this may prompt participants to think about how best to use their expected matches. IDA participants may think about their resources in ways that cash-transfer recipients do not, and this may lead to non-economic changes in patterns of thought and behavior (Chapter 1).

Third, IDAs attempt to restrict the use of transfers to the purchase of assets that generally improve both individual and social well-being in the long term. In fact, it might be said that IDAs attempt to transfer not cash but rather homes, human capital, and microenterprises.

[12] The cost assessment of the experimental-design program (Schreiner, 2000a) adjusted for costs due to evaluation, but we have no way to do this for the MIS IDA data.

[13] Costs and inputs in this report omit MACED because large changes in its costs through time signalled inaccuracies. The figures also omit the two collaboratives (CAAB and EBALDC) because they could not be expected to gather accurate data from all of their member organizations (CAAB and EBALDC).

Fourth, IDAs are coupled with financial education that attempts to transfer knowledge and world views conducive to long-term wealth and well-being.

Fifth and finally, social support and encouragement from IDA staff and from peers seem to help people to save (Moore *et al*., 2001).

In short, IDAs are not just savings accounts; they are a bundle of services and institutional structures designed to make it easier for the poor to save and accumulate assets. Thus, they are difficult to compare directly to cash transfers.

Discussion

A concern for costs need not be a call to cut services. Efficiency is defined for a given level of service. Cuts in services can curtail costs, but they need not increase efficiency and may even decrease it. What matters for policy is that costs are explicit, and what matters for programs is that there are benchmarks against which to track progress.

IDAs are a complex package of services, constraints, and opportunities; the benefits of participation are not yet measured and so cannot be compared with the costs discussed here. Furthermore, although some inefficiencies are inevitable, measured costs are biased upwards for a variety of reasons. Even without these biases, however, IDAs would be costly. Even if costs fell to $1 per dollar of net deposits (a decrease of more than 50 percent), it would be difficult for funders to support a long, broad IDA program with the current bundle of services and decentralized structure, even if social benefits exceed costs.[14]

Qualitative evidence from the evaluation of ADD suggests that participants highly value close contact with staff. A key challenge for IDA programs is to provide such labor-intensive (and costly) services efficiently. The tension between intensive services and the types of cost structures that would allow broad access to IDAs may lead to two tiers of IDA designs, the first with broad access, simple services, and lower costs, and the second with targeted access, intensive services, and higher costs (Sherraden, 2000).

[14] For example, federal support would likely follow terms similar to those of the Assets for Independence Act. AFIA allows 15 percent of its grants to go for program expenses; 85 percent must go to matches. Thus, if AFIA expected to be the sole funder of a program, then it would presume a ratio of matches to program expenses of about 5.7:1; the ratio in ADD is much smaller. ADD programs receive $25,000 each year through CFED for program costs. Like AFIA programs, ADD programs make up the shortfall between costs and funds from CFED and/or AFIA with funds from other sources.

7. Savings Outcomes

Saving and asset accumulation in IDAs are built up from several elements. Deposits and interest increase balances; fees and withdrawals (matched or unmatched) decrease balances. Match rates affect total accumulation, and income affects the level of resources available to be saved.

No single number captures everything about each element. We define six measures to summarize the combined effects of different elements on savings outcomes in ADD:

- Net deposits were, for the average participant, $353.
- Net deposits plus match per participant was $1,054.
- Average monthly net deposits (AMND) per participant were $25.42.
- Deposit frequency per participant was 58 percent (7 months per year).
- Net deposits as a percentage of the pro-rated match cap per participant were 67 percent.
- The savings rate for the average participant was 2.2 percent.

Net Deposits

Net deposits are defined as deposits plus interest (net of fees) minus unmatched withdrawals. The measure includes matched withdrawals, but it excludes deposits in excess of the match cap or after the time cap. Excess deposits, late deposits, and unmatched withdrawals from matchable balances are savings in an IDA account. They cannot be matched, however, so they are not counted as net deposits.[1]

Net deposits measure assets accumulated in an IDA up to a point in time. Greater net deposits imply greater asset accumulation. The measure does not account, however, for differences in the length of participation, match caps, time caps, or the timing of cash flows. The definition of net deposits also ignores the possibility of future unmatched withdrawals from current balances.

The box on the next page illustrates savings outcomes (including net deposits) for a hypothetical IDA.

[1] For the same reason, net deposits are zero for participants who exit without a matched withdrawal, even if their account has a balance on exit.

Savings Outcomes for a Hypothetical IDA

To illustrate the measures of savings outcomes, Table 7.1 shows cash flows for a hypothetical IDA account. Figure 7.1 depicts the evolution of the balance.

The example participant opened the account on January 1. The match rate was 2:1, the match-cap structure was annual, the annual match cap was $300, the time cap was 12 months, the total match cap was $300, and there were no fees. The first deposit of $100 was on February 1. On March 1, $1.00 of interest (a monthly rate of 1 percent) was credited. (The unrealistically high interest rate of one percent per month is used here only for illustration. The hypothetical example is not meant to represent the typical experience in ADD in any way.) On April 1, there was an unmatched withdrawal of $25 and an interest credit of $1.01. On May 1, the participant deposited $50, and $0.77 in interest was credited. Finally, on June 1, five months after the account was opened, interest of $1.28 was credited, and the participant closed the account with a matched withdrawal of $129.06.

In this example, net deposits were $129.06. This is the sum of deposits ($100 + $50 = $150) and interest ($1.00 + $1.01 + $0.77 + $1.28 = $4.06), minus unmatched withdrawals ($25).

Table 7.1 Cash Flows in a Hypothetical IDA in Dollars

Date	Deposit	Interest	Matched withdrawal	Unmatched withdrawal	Balance
Jan. 1	0.00	0.00	0.00	0.00	0.00
Feb. 1	100.00	0.00	0.00	0.00	100.00
March 1	0.00	1.00	0.00	0.00	101.00
April 1	0.00	1.01	0.00	25.00	77.01
May 1	50.00	0.77	0.00	0.00	127.78
June 1	0.00	1.28	129.06	0.00	0.00
Total	150.00	4.06	129.06	25.00	N/A

Monthly interest is 1 percent, the match rate is 2:1, the total match cap is $300, and the time cap is 12 months.

Figure 7.1 Evolution of the Balance of a Hypothetical IDA

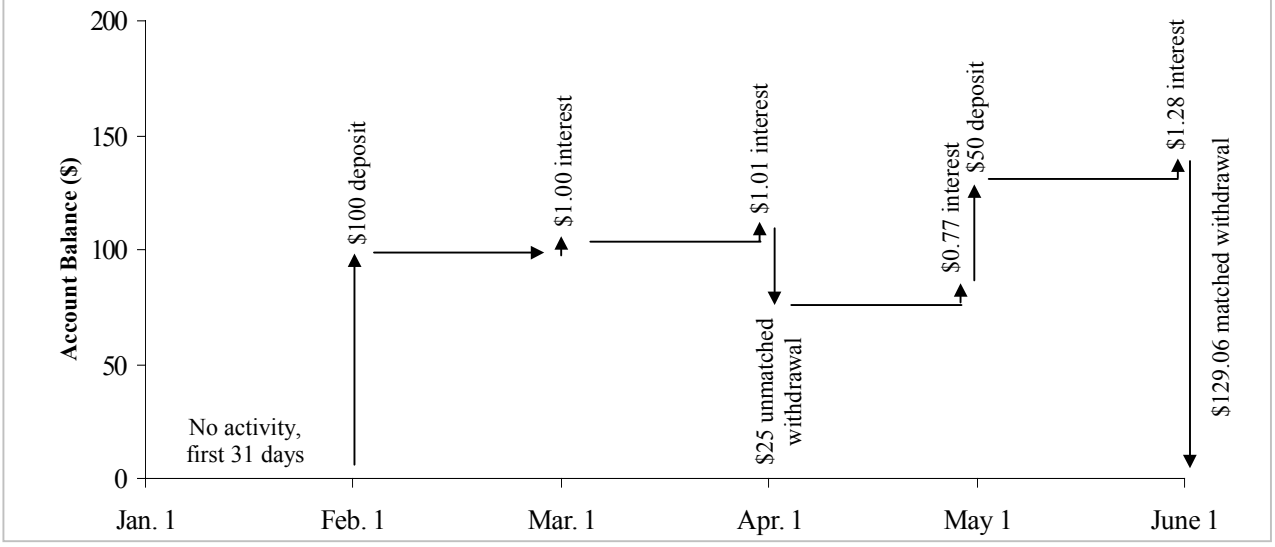

Table 7.2 Average Net Deposits by Program					
Program	**N**	**Mean ($)**	**Median ($)**	**Min. ($)**	**Max. ($)**
ADVOCAP	82	518	499	0	1,000
CAAB	153	357	166	0	2,799
CVCAC	155	384	289	0	1,309
Near Eastside	191	171	91	0	660
Heart of America	91	483	447	0	1,134
Human Solutions	122	379	299	0	1,500
MACED	58	194	229	0	360
CAPTC Small-scale	161	728	514	0	2,250
Shorebank	205	205	100	0	1,000
WSEP	235	143	101	0	600
Alternatives FCU	93	604	619	0	1,500
CTMHA	128	408	223	0	3,000
EBALDC	245	416	410	0	1,920
CAPTC Large-scale	459	315	131	-3	1,500
All ADD	2,378	353	195	-3	3,000

Table 7.2 shows average, median, minimum, and maximum net deposits for ADD as a whole and for each of the 14 programs as of June 30, 2000. (The order of the programs is arbitrary.) About 16 percent of participants had exited without a matched withdrawal (and so had zero net deposits), and 1.6 percent had zero net deposits but had not exited.[2]

For ADD as a whole, average net deposits were $353. The median was $195.[3] The smallest net deposit was -$3 (some participants overdrew their accounts), and the largest net deposit was $3,000. The average ranged from $143 (WSEP) to $728 (CAPTC Small-scale); the median ranged from $91 (Near Eastside) to $619 (Alternatives FCU).

This analysis does not control for differences across programs (for example, participant or institutional characteristics, or start date), so cross-program comparisons are inappropriate. In fact, net deposits is not a very useful measure because it does not control for length of participation; all else constant, participants who started sooner will have higher net deposits.

Net Deposits plus Match

Net deposits plus match is defined as net deposits plus the corresponding match.[4] Net deposits includes any previous matched withdrawals. This measure tells the asset accumulation that would take place through IDAs if all net deposits were removed in matched withdrawals.

[2] All of these cases had made deposits but then had removed them in unmatched withdrawals.
[3] The median has the same number of participants above it as below it.
[4] Of course, some current balances may eventually be removed as unmatched withdrawals.

Table 7.3 Net Deposits plus Match by Program					
Program	**N**	**Mean ($)**	**Median ($)**	**Min. ($)**	**Max. ($)**
ADVOCAP	82	1,553	1,497	0	3,000
CAAB	149	1,513	764	0	8,396
CVCAC	155	997	844	0	3,871
Near Eastside	189	710	402	0	2,638
Heart of America	90	1,466	1,491	0	3,403
Human Solutions	122	758	598	0	3,000
MACED	49	1,462	1,910	30	2,520
CAPTC Small-scale	161	1,704	1,273	0	6,750
Shorebank	204	514	222	0	2,000
WSEP	234	497	353	0	3,000
Alternatives FCU	93	2,416	2,476	0	5,998
CTMHA	128	1,232	668	0	9,000
EBALDC	241	1,249	1,231	0	5,760
CAPTC Large-scale	458	800	331	-8	4,500
All ADD	2,355	1,054	607	-8	9,000

Like net deposits, the measure of net deposits plus match has some drawbacks. It does not control for length of participation, and it depends on the match rate, which is not an outcome of participant behavior but rather an element of the institutional structure set by the program.

Example: Net Deposits plus Match

In the hypothetical example, net deposits were $129.06, and the match rate was 2:1. Net deposits plus match were thus $387.18, found as $129.06 + 2·$129.06.

For ADD as a whole, average net deposits plus match were $1,054 (median $607, Table 7.3).[5] Ranges across programs are wide, but cross-program comparisons are not meaningful.

Average Monthly Net Deposit

Average monthly net deposit (AMND) is defined as net deposits per month of participation for a participant. AMND is the key measure of savings outcomes in this report. Unlike net deposits, AMND controls for the length of time that a participant has had the opportunity to save. All else constant, greater AMND implies greater asset accumulation.

Example: Average Monthly Net Deposit

The example participant was in the IDA program for 5 months. Net deposits were $129.06, so the average monthly net deposit for this example participant was $25.81, found as $129.06 / 5.

[5] The figure here differs from the $1,055 figure in Chapter 5 because the figure here excludes a few participants with missing match rates.

Table 7.4 Average Monthly Net Deposit by Program					
Program	**N**	**Mean ($)**	**Median ($)**	**Min. ($)**	**Max. ($)**
ADVOCAP	82	46.43	40.63	0.00	250.00
CAAB	153	33.34	23.54	0.00	250.00
CVCAC	155	22.58	24.16	0.00	62.50
Near Eastside	191	13.22	7.00	0.00	62.50
Heart of America	91	19.46	21.29	0.00	36.03
Human Solutions	122	22.44	20.03	0.00	76.92
MACED	58	10.50	13.73	0.00	16.05
CAPTC Small-scale	161	28.72	21.53	0.00	125.56
Shorebank	205	15.30	7.36	0.00	71.43
WSEP	235	13.19	12.62	0.00	100.00
Alternatives FCU	93	29.63	34.69	0.00	55.54
CTMHA	128	26.35	18.71	0.00	142.86
EBALDC	245	34.00	31.58	0.00	213.33
CAPTC Large-scale	459	32.85	20.01	-0.22	187.50
All ADD	2,378	25.42	17.96	-0.22	250.00

For ADD as a whole as of June 30, 2000, average AMND was $25.42 (median $17.96, Table 7.4). Thus, a year of participation produced net deposits of $305.04. If these patterns hold, then the average participant in ADD—with an average match rate of 2:1 and an average time cap of 33 months—will deposit about $840 and accumulate about $2,500.

Average AMND ranged from $10.50 (MACED) to $46.43 (ADVOCAP). The median ranged from $7.00 (Near Eastside) to $40.63 (ADVOCAP). As usual, cross-program comparisons mean little unless they control for cross-program differences. The regression in Chapter 9 does this.

Sherraden *et al*. (2000) reported AMND as of June 30, 1999 as $32.85.[6] What caused AMND to fall to $25.42 (a change of –$7.43) as of June 30, 2000? Changes in AMND stem from changes in four factors: changes in observed characteristics for new enrollees, changes in unobserved characteristics for new enrollees, changes in average length of participation for all participants, and changes in non-participant unobserved factors.

Regression results in Chapters 8 and 9 imply that shifts in observed characteristics for post-June 1999 enrollees decrease average AMND for all of ADD by $5.43. For example, new enrollees were more likely to have debt (a factor that decreases AMND) than were pre-June 1999 enrollees. Also, enrollees in new ADD sites funded in part under the Assets for Independence

[6] They report average AMND as $33.29, but they do not exclude ineligibles, and they do not subtract bank fees, excess deposits, or balances left in accounts at exit. Their data also include some months for 30 people who exited before June 30, 1999 but were not marked as such by the program until after June 30, 1999. Their data also omit 38 participants who opened an account before June 30, 1999 but were not entered in MIS IDA until later. (The current data set may also omit some participants for these same reasons.) On net, refinements to data and formulae change average AMND as of June 30, 1999 to $32.85 (a change of $0.44).

Table 7.5 Factors in the Decrease in AMND in the Year After June 30, 1999	
Factor that Changed	**Effect ($ of Ave. AMND)**
Observed characteristics for post-June 1999 enrollees	–5.43
Unobserved characteristics for post-June 1999 enrollees	–1.19
Average length of participation for all participants	–2.33
Non-participant unobserved factors	+1.52
Total Change in Average AMND	–7.43

Act—all of which started after June, 1999—had an income/poverty cap of 150 percent, whereas the original ADD sites had a cap of 200 percent (Chapter 2).

Regression results also imply that a shift in unobserved participant characteristics decreased AMND by $1.19. Enrollees after June 1999 were predisposed to save less. The push to meet ADD enrollment targets before the end of 1999 may have loosened the enrollment process, admitting savers who were less-able and less-committed in unobserved ways.

In the year after June 30, 1999, average months of participation increased from 8.9 to 13.3. Because AMND varies with length of participation (Chapters 8 and 9), the increase in the experience of participants in the 12 months after June 30, 1999, decreased AMND by $2.33.

In sum, these three effects decreased AMND by $8.95. These three effects plus the effect of changes in non-participant unobserved characteristics is the total decrease of $7.43, so changes in non-participant unobserved factors increased AMND by $1.52 (Table 7.5). Non-participant unobserved factors include unobserved program characteristics (such as learning by staff) and factors outside of participants and programs (such as the strong economy).

Deposit Frequency

Deposit frequency is defined as the number of months with a deposit divided by the number of months of participation. It shows how steadily a participant saves through time. A participant with a deposit each month has a deposit frequency of 100 percent. As a participant misses months, the measure gets smaller; someone with no deposits at all has a frequency of zero. Deposits of accrued interest are ignored; if not, frequency would be 100 percent for most participants.

Example: Deposit Frequency

The example participant made deposits in 2 of 5 months, so deposit frequency was 40 percent.

For ADD as a whole, mean deposit frequency was 58 percent (median 57 percent, Table 7.6); the typical IDA participant made a deposit in seven of twelve months. Frequency declined after June 30, 1999, when the mean was 66 percent (median 70 percent).

The highest mean frequency was 77 percent (Alternatives FCU and CAPTC Large-scale); the lowest is 36 percent (Shorebank).

Table 7.6 Deposit Frequency by Program (Months with a Deposit/Months of Participation)					
Program	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
ADVOCAP	82	57	56	7	100
CAAB	153	50	44	5	100
CVCAC	155	51	50	0	100
Near Eastside	191	53	50	0	100
Heart of America	91	64	68	13	100
Human Solutions	122	56	53	10	100
MACED	58	48	46	17	100
CAPTC Small-scale	161	68	74	7	100
Shorebank	205	36	30	6	100
WSEP	235	49	50	0	100
Alternatives FCU	93	77	79	25	100
CTMHA	128	49	49	5	100
EBALDC	245	52	50	8	100
CAPTC Large-scale	459	77	83	6	100
All ADD	2,378	58	57	0	100

Greater deposit frequency may lead to higher AMND; Chapter 9 suggests that a move from the 25th percentile in frequency (33 percent) to the 75th percentile (83 percent) was linked to an increase in AMND of $21.50. This is not a strong result, however, because saving may cause frequency, even if frequency also causes saving.

Net Deposits as a Percentage of the Pro-rated Match Cap

Net deposits as a percentage of the pro-rated match cap is defined as the ratio of the average monthly net deposits to the monthly savings target. The *monthly savings target* is the total match cap divided by the time cap, that is, the amount that, if deposited each month and not removed as an unmatched withdrawal, would lead to net deposits equal to the lifetime match cap in the month of the time cap.

The measure of net deposits as a percentage of the pro-rated match cap indicates the closeness of actual saving behavior to that which would take full advantage of match incentives. A measure of 100 percent indicates that a participant is on track to use all match eligibility. Measures above 100 percent are possible if deposits are on a pace to exceed the total match cap or if a participant has an annual match-cap structure and has deposited more than would be matched if participation were to end after the current participation-year.

For ADD as a whole, net deposits were, on average, 67 percent of the pro-rated match cap (median 49 percent, Table 7.7). That is, the average participant saved 67 cents for every dollar of match eligibility. The low was 46 percent (CAPTC Small-scale), and the high is 148 percent (EBALDC).

Table 7.7 Net Deposit as a Percentage of the Pro-rated Match Cap by Program

Program	N	Mean (%)	Median (%)	Min. (%)	Max. (%)
ADVOCAP	82	111	98	0	600
CAAB	153	72	50	0	600
CVCAC	155	48	43	0	203
Near Eastside	191	63	32	0	325
Heart of America	91	57	62	0	104
Human Solutions	122	54	48	0	185
MACED	58	70	92	0	107
CAPTC Small-scale	161	46	34	0	201
Shorebank	205	55	24	0	243
WSEP	235	54	50	0	480
Alternatives FCU	93	71	83	0	133
CTMHA	128	49	41	0	185
EBALDC	245	148	168	0	511
CAPTC Large-scale	459	53	32	0	300
All ADD	2,378	67	49	0	600

Example: Net Deposits as a Percentage of the Pro-rated Match Cap

For the example participant, the monthly savings target is $25, found as the match cap of $300 divided by the time cap of twelve months. Because the average monthly net deposit was $25.81, the proportion of savings goal was 103 percent, found as $25.81 / $25. The participant was slightly ahead of the pace required to use all match eligibility before the 12-month time cap.

One of the strongest hypotheses of institutional theory for IDAs is that higher savings targets (that is, higher match caps) will cause higher saving because participants change caps into targets in their minds. Indeed, results in Chapter 9 suggest that a dollar increase in the match cap was linked to a $0.36 increase in AMND.

This result, however, should be taken with a grain of salt. First, the test does not distinguish between psychological versus economic effects of a higher savings target. For example, if a participant, given a match rate, wants to save more than the savings target, then an increase in the target would be accompanied by an increase in net deposits. But the change in the target does not cause the change in deposits; it merely relaxes a constraint that had been binding.[7] Second, some programs may have set the match cap—and thus the savings target—based partly on their expectations about how much participants would save. For example, programs that expected lower savings might have set lower targets. If expectations were at least somewhat correct, then

[7] To control for this economic effect would require two models. The first model would look at "desired" net deposits, observed only when match caps do not bind. The model would then be used to estimate desired net deposits when the match cap does bind. The second model would link desired net deposits to variation in the match cap across participants, other factors held constant. The effect probably would be greater than zero but less than the $0.36 found here.

Table 7.8 Savings Rate by Program					
Program	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
ADVOCAP	82	3.1	2.5	0.0	18
CAAB	153	2.5	1.5	0.0	36
CVCAC	151	2.6	2.0	0.0	18
Near Eastside	191	1.4	0.7	0.0	12
Heart of America	84	1.5	1.3	0.0	5
Human Solutions	121	2.2	1.1	0.0	68
MACED	55	1.3	1.0	0.0	15
CAPTC Small-scale	158	2.1	1.3	0.0	24
Shorebank	204	1.5	0.5	0.0	71
WSEP	230	1.2	0.8	0.0	11
Alternatives FCU	87	2.9	2.2	0.0	36
CTMHA	128	1.8	1.1	0.0	9
EBALDC	241	3.7	2.4	0.0	107
CAPTC Large-scale	436	2.7	1.5	0.0	60
All ADD	2,321	2.2	1.3	0.0	107

higher targets were assigned to people who would have saved more anyway, so higher targets would (falsely) seem to cause higher deposits. Third, some programs may change the match cap in response to observed deposit behavior. This induces interdependence between the match cap and net deposits. Fourth, some participants may not have known their savings targets; the data cannot say much about the effects of targets if participants did not know the targets in the first place. Because some sources of future funds are uncertain, some programs have not yet established total match caps for all of their participants.

The Savings Rate

The savings rate is defined as the ratio of the average monthly net deposit to gross monthly household income. It measures the rate at which inflows of resources are converted into IDA deposits.

Example: Savings Rate

If the example participant had monthly household income of $1,250, then net deposits as a percentage of income would be about 2.1 percent, found as $25.81 / $1,250.

For ADD as a whole, the average savings rate was 2.2 percent (median 1.3 percent, Table 7.8). The lowest rate was 1.2 percent (WSEP), and the highest was 3.7 percent (EBALDC). Chapter 11 discusses the relationship between net deposits and income.

8. Exits

Exits are participants who leave a program without having taken a matched withdrawal. Exits have zero net deposits in IDAs; balances are removed as unmatched withdrawals or become unmatchable once the participant leaves the program.[1]

Exits matter for IDA policy because they are costly; programs lose their investment in participants, and participants lose potential match funds. Participants may also become discouraged with saving in general. How common is exit, and what institutional and participant characteristics are associated with it?

In the context of ADD, answers might serve three purposes. First, they set a benchmark and give programs an idea of the rate of exit that they can expect through time. Second, they suggest how institutional features are linked with exit; programs might then fine-tune these features. Third, they suggest how participant characteristics are linked with exit; programs might then target extra help to the participants who are most at-risk.

This chapter discusses the concept of *exit*, exit in ADD, and links between exit and the characteristics of programs and participants. About 16 percent of enrollees in ADD had exited as of June 30, 2000. The cumulative risk of exit was 11 percent in the first 12 months and 16 percent in the first 24 months. Among program characteristics, higher match rates and higher match caps were linked with a reduced risk of exit. Among participant characteristics, the risk of exit was about the same for African Americans, Asian Americans, Caucasians, and Hispanics, and income and receipt of public assistance were not correlated with the risk of exit. Owners of checking accounts and owners of cars had a lower risk of exit, and debtors had a higher risk. Finally, participants who used direct deposit with their IDA had a lower risk of exit.

Exit in Subsidized-savings Programs

We know little about exit (by the poor or non-poor) from subsidized-savings programs. In IRAs or 401(k) plans, *exit* might be seen as withdrawals of all balances before retirement. Although some people in 401(k) plans take hardship withdrawals or loans, complete exit is rare, except for those who do not rollover their account balance when they switch jobs.[2]

[1] Exits still saved and maintained assets for a time, but they also dissaved or became ineligible for matches, so net IDA deposits are zero.

[2] See Bassett, Fleming, and Rodrigues (1998); Chang (1996); and Poterba, Venti, and Wise (1995). Samwick and Skinner (1996) report that about half of the $50 billion pre-retirement distributions in 1990 from defined contribution plans was not rolled into subsidized accounts. They surmise that the other $25 billion was consumed or converted into consumer durables (especially houses). Because aggregate personal saving in 1990 was about $175 billion, the potential reduction in saving due to this type of exit is large.

When access to subsidized savings is permanent—as for IRAs and 401(k) plans—then the concept of *exit* is not very useful. People with zero balances could just as well be seen as inactive or at-rest. Likewise, if access to IDAs were permanent, then exit would not be relevant.

From the perspective of long-term improvement in the well-being of the poor, the best IDA policy would involve permanent access (Schreiner *et al*., 2000). Then the poor could save in IDAs at their own pace; access would not depend on minimum deposits in a limited time frame. Permanent access would also increase the sums that people could accumulate, and this could only boost the developmental impact of IDAs.

As it is, access to IDAs is not permanent, and so exit is possible. There are time caps because funds are limited; the private sources and public programs that provide funds have not committed to permanent support. In practice, the only possible source of permanent funds for a broad IDA program is the government.

Exits, Graduates, Actives, Kick-outs, and Ineligibles[3]

Definitions

Exits are defined as people who leave an IDA program without having taken a matched withdrawal.[4] For exits, net deposits are zero by definition. In ADD as of June 30, 2000, 16 percent of enrollees had exited.

Graduates are defined as participants who leave an IDA program sometime after having taken a matched withdrawal. Graduates have positive net deposits. In ADD as of June 30, 2000, about one-fourth of the 13 percent of participants with a matched withdrawal (3 percent of enrollees) had graduated.

Actives are defined as people who have an IDA open. In ADD as of June 30, 2000, 81 percent of enrollees were active. About 98 percent of actives had positive net deposits (2 percent made deposits and removed all of them in unmatched withdrawals but yet did not exit).

Kick-outs break rules and are forced out of IDA programs.[5] Even if kick-outs save something and leave with a balance in their account, they have zero net deposits because they cannot make

[3] This section draws from Schreiner *et al*. (2000) and Schreiner (2000c).
[4] Exits might also be called *drop-outs*.
[5] For example, kick-outs might miss classes, fail to meet a minimum deposit frequency, exceed a maximum number of unmatched withdrawals, or fail to save a minimum amount. Most programs in ADD state that they will kick participants out for at least one of these reasons, and, although the programs do not enforce their rules consistently, they have kicked some people out. These rules intend to encourage frequent deposits, to discourage unmatched withdrawals, and to free up funds for people who follow the rules. With enough time, however, kick-outs might have fulfilled requirements and made small deposits and matched withdrawals; once kicked-out, they cannot succeed in IDAs.

matched withdrawals. An unknown share of participants treated as exits in this report are kick-outs.

Ineligibles open an IDA and then leave because it was discovered that they failed to meet eligibility requirements. In the analysis of ADD here, people who died or who moved are also counted as ineligible because they left for reasons unrelated to saving behavior. Ineligibles have zero net deposits by constraint; the 68 known ineligibles in ADD are excluded from the 2,378 participants analyzed in this report.

Exits and IDA Design

The original proposal for IDAs calls for accounts for all, opened at birth, with greater subsidies for the poor (Sherraden, 1991). Everyone is always a participant; just as people are not "on" or "off" IRAs, people would not be "on" or "off" IDAs. Even people with zero balances or no recent deposits would have an IDA. Of course, not everyone would use their IDA at all times, but if the goal is long-term development, then permanent incentives to build assets are better than time-limited ones.

IDAs in ADD have time caps because funds are limited in time and amount. Prudence dictates that programs reserve funds for each participant equal to the match rate multiplied by the lifetime match cap. This creates an incentive to count as exited those participants who fail to make deposits, who fail to fulfill other requirements in a set time frame, or who tell programs that they want to quit. Once such participants are exited, funds reserved for them are freed for others. Furthermore, exits do not get support from staff, so exits reduce program costs. Although permanent access to IDAs is best for long-term development, funds for ADD are non-permanent, so participants who leave without matched withdrawals are viewed as exited rather than as inactive or at-rest.

Data Issues

Exits leave ADD, and some programs (but not all) also allow them to return.[6] Kick-outs break rules and leave ADD. Of course, in a program without deadlines (other than that requirements must be met before a matched withdrawal), some kick-outs would likely have remained.

The source of the constraints that lead to the termination of participation—whether on the side of the participant or on the side of the program—matters because we ask about participant behavior. If program constraints force participants to leave, then the data say little about saving behavior by participants. Of course, we also ask about the effects of institutions on participant behavior, and some institutional rules can be seen as constraints. If there are data on constraints—as there

[6] In ADD through June 30, 2000, 8 participants had exited and then returned. It is likely that some programs in ADD do not allow return after exit, so ADD reveals little about the potential for return by people who withdraw all their balances.

are, for example, for the match cap and the time cap—then the analysis can attempt to distinguish between constraints imposed inside and outside the IDA program.[7]

In the case of exit, the data do not always distinguish the source of constraints. We know that the status of most exits, graduates, and kick-outs resulted from constraints outside the IDA program, but we also know that some were the result of some constraints inside the IDA program. The data may also confuse some ineligibles with kick-outs. We believe that this matters for only a small share of cases, although we do not know exactly how perfect knowledge of exit status would affect the nature and precision of the results in this report.

Furthermore, exit status in ADD is censored; some people active on June 30, 2000, will exit later. Because very few accounts have yet to be opened in ADD and because more people will exit as time passes (and few will return), the likelihood of exit over the whole course of ADD will probably be much higher than the rate observed as of June 30, 2000.[8] The results here thus pertain only to ADD so far. They are probably not good predictors of exit by the end of ADD; they are certainly not good predictors for a permanent program.

Finally, weaknesses of the data mean that the results in this chapter are less precise, more tentative, and less relevant for a broad IDA policy than it might seem at first glance. Furthermore—and perhaps more important—the extent of the imprecision is unknown, although we do not expect it to greatly affect the broad shape of the results here.

Exits in ADD

About 16 percent of enrollees in ADD had exited as of June 30, 2000. Deposit frequency for exits (33 percent) was about half that of non-exits (62 percent). Average AMND for non-exits was $30.30; because exits removed all their deposits in unmatched withdrawals, average AMND for exits was zero by definition. On average, matchable deposits were higher for non-exits ($420) than for exits ($174).

How does the risk of exit change as the length of participation increases? The monthly risk of exit increases from almost zero in the first month to 1.6 percent in month 6 (Figure 8.1).[9] That is, 1.6 percent of participants who reach month 6 exit in month 6. Risk averages about 1 percent per month for months 7 through 17, after which it falls to an average of about 0.25 percent for months 18 to 24. The cumulative risk of exit is 11 percent in the first 12 months, 14 percent in the first 18 months, and 16 percent in the first 24 months.

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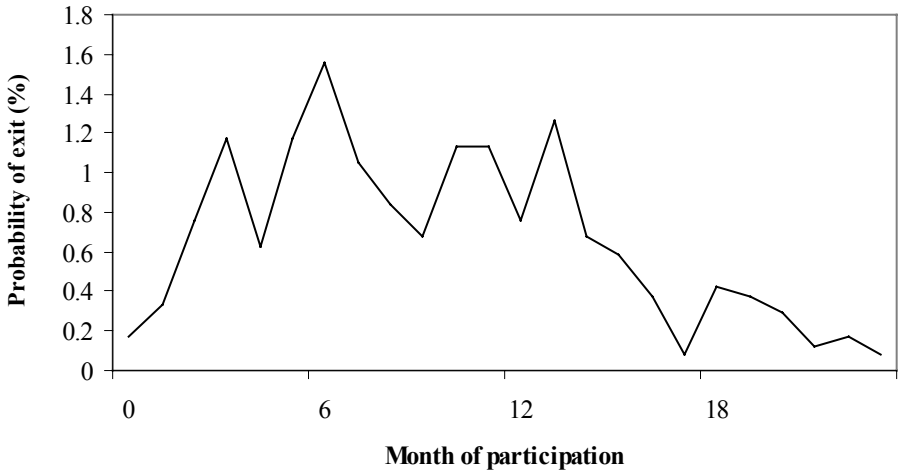
[7] Of course, programs created rules based in part on how they expected participants to behave. Also, as ADD has progressed, some programs have changed rules in light of observed behavior. Both of these factors weaken how well the data can distinguish between the effects of participant constraints versus institutional constraints.

[8] There are other data issues beyond censoring. For example, some exits may be listed as active even after they stop making deposits if they keep their account open but do not tell the program that they want to quit. Likewise, some people who broke rules may not be kicked out yet.

[9] A Kaplan-Meier hazard function, Figure 8.1 controls for censoring (Kiefer, 1988).

Figure 8.1 Probability of Exit in a Given Month of Participation



Exit, Institutional Characteristics, and Participant Characteristics

How are institutional and participant characteristics associated with exit? The results below may help programs to adjust institutional design and to target support.

Regression Model

Regression estimates the sign (direction), size, and statistical significance of the association between an outcome (exit, the dependent variable) and characteristics assumed to cause the outcome (the independent variables).[10] Estimates of associations from regression are usually closer to the true association than are estimates from bivariate comparisons because regressions control for correlations among independent variables in the model.

The dependent variable (non-exit) is dichotomous (unity for non-exits, zero for exits), so a probit model is used (Kennedy, 1998). Because the probit estimates do not have a direct interpretation, we convert them to units of percentage points (one percentage point is 1/100, or 0.01) of change in the predicted risk of non-exit given a unit change in an independent variable.[11] If the estimated change linked to a unit increase in an independent variable is positive, then the likelihood of non-exit increases (decreases in the likelihood of exit). Negative estimates imply decreases in the likelihood of non-exit (increases in the likelihood of exit).

[10] Of course, regression does not control for characteristics omitted from the model, and all regressions omit some characteristics that influence the outcome.

[11] The percentage-point changes are computed at the means of the independent variables. Standard errors are computed with the delta method (Greene, 1993).

The probit model includes an unusually large number of control variables: 9 institutional characteristics, and 27 participant characteristics.[12] Because some characteristics are categorical and because some continuous characteristics are specified as piece-wise linear splines (Suits, Mason, and Chan, 1978), 99 parameters are estimated.[13]

Tables 8.1 through 8.8 contain the means of the characteristics in the model, the estimated percentage-point changes in the likelihood of non-exit given a unit increase in a given characteristic, and the p-value of the estimated change.[14] Although these results are in 8 tables, they all come from one regression.

The model uses 2,338 observations (40 were omitted due to missing values) and had a good fit. It was statistically different from a model with only an intercept with 99-percent confidence. In comparisons between pairs in which one was an exit and one a non-exit, the predicted likelihood of non-exit was higher for the non-exit than for the exit more than 95 percent of the time.[15]

Institutional Characteristics

The estimates of the associations between institutional characteristics and non-exit presented below are less precise than they might appear. Institutional designs were not randomly assigned to programs in ADD; rather, each program made its own rules, and staff probably molded designs based at least in part on how they expected participants to behave. If staff were at least partly correct, then not only does program design cause participant behavior but also participant behavior causes program design. The model assumes one-way causation from design to behavior, so two-way causation leads to bias.[16]

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[12] Characteristics were selected if they were in MIS IDA, were expected to influence exit, had sufficient variation, and were unlikely to be caused by exit. The regression analysis here and in Chapters 5 and 9 use the at-enrollment data on participant characteristics. The descriptions elsewhere use the most recent data.

[13] All but 12 participants have missing values for at least one of 22 characteristics in the model. The standard practice that omits participants with any missing characteristics would make regression impossible. Instead, we use a set of dummy variables to cleanse the estimates of the effects of missing values (Orme and Reis, 1991). If a characteristic is not missing, then the "missing" dummy that corresponds to the characteristic is set to zero. If the characteristic is missing, then the "missing" dummy is set to unity and the characteristic is set to zero. The estimate for the characteristic reflects only non-missing values. Like other simple treatments of missing data, this assumes that being missing is not correlated with the outcome. This is unlikely for exits in ADD because missing data is most common for people who exited and then could not be contacted during data-cleaning. We have not adjusted for this source of bias of unknown magnitude. The coefficients of the "missing" dummies are available on request.

[14] Appendix B discusses p-values and statistical significance.

[15] Used at enrollment, this model would identify high-risk cases very well (Hand, 1994).

[16] Some programs have a single match rate (or a single match cap) for all participants, but some programs have—within a single program—different groups of participants with different match rates (or different match caps). The estimated effects for these two institutional features are based on those programs where the features vary among groups of participants.

Table 8.1 Institutional Characteristics and Exit			
Institutional Characteristics	**Mean**	**Change in % points**	**p-value**
Match rate			
1:1	0.24	-4.7	0.01
2:1	0.51	-3.7	0.01
3:1	0.14	-1.6	0.14
4:1 to 7:1	0.06		
Match cap			
Monthly savings target	43	0.05	0.01
Match-cap structure			
Annual	0.56		
Lifetime	0.44	1.0	0.27
Program inputs per participant per month			
Salaried IDA staff (hours)	2.8	-1.2	0.07
Partner staff (hours)	0.5	0.88	0.16
Volunteer staff (hours)	1.1	-0.06	0.90
Salary expense ($)	46	0.02	0.62
Non-salary expense ($)	24	0.00	1.00

Means taken over only non-missing observations.

Note: Means for variables in the tables of regression results are taken across only non-missing cases and so may not match means in Tables 3.1 and 4.1

Match rate. Higher match rates were linked with lower exit. The column "Change in % points" in Table 8.1 shows the change in the likelihood of non-exit for a given match rate relative to the likelihood with match rates of 4:1 to 7:1. For example, a match rate of 1:1 was associated with a 4.7-percentage-point decrease—compared to match rates of 4:1 to 7:1—in the likelihood of non-exit. The p-value is 0.01, so the link is statistically significant with 99-percent confidence. Likewise, compared with 4:1 to 7:1, a match rate of 2:1 was linked with a 3.7-percentage-point decrease (99-percent confidence), and a match rate of 3:1 was linked with a 1.6-percentage-point decrease (86-percent confidence).[17]

Given a rate of exit in ADD of 16 percent, these are large effects. They are likely understated because some programs probably set higher match rates if they expect their participants to save little (which is likely correlated with exit). Chapter 13 discusses match rates further.

[17] We have not tested whether the seeming 1-percentage-point increase in the likelihood of non-exit associated with a change in the match rate from 1:1 to 2:1 (or the 2.1-percentage-point increase associated with a change from 2:1 to 3:1) are statistically significant.

Monthly savings target. The *monthly savings target* is defined as the amount which, if saved each month and not removed in unmatched withdrawals, would produce net deposits equal to the total match cap in the last month before the time cap.

A higher monthly savings target was associated with a higher likelihood of non-exit with 99-percent confidence (Table 8.1). A dollar increase implies a decrease in the likelihood of exit of 0.05 percentage points (a $10 increase would be linked to a decrease of 0.5 percentage points.)

The two-way causation between institutional features and behavior probably means that this association is overstated. If programs assign high targets to people who would save more regardless of the target, then high savers will have high targets and low savers will have low targets. Even if the target had no effect on saving, the regression would detect a positive (and spurious) correlation with saving (and thus with non-exit).

A central tenant of institutional theory for IDAs is that people save more (and are perhaps less likely to exit) if they are expected to save more. The results here seem to support this, although two-way causation probably explains at least some of the positive association.

Match-cap structure. About 56 percent of participants had an *annual match-cap structure* with a match cap each participation-year (Table 8.1). The rest had a *lifetime match-cap structure* with a single match cap for the length of participation.

Participants with a lifetime match-cap structure were 1 percentage point less likely to exit than those with an annual structure, but the level of confidence is not very high (73 percent).

Financial education. The regression omits financial education due to two-way causation. For example, more education should increase saving and decrease exit (Chapter 10). Attendance, however, takes place through time, so even if education has no link with exit, people who exit will attend fewer hours than non-exits if only because they exit sooner and so have fewer opportunities to attend. This would induce a spurious correlation between education and exit.

Program inputs. Observed program inputs include hours by salaried staff of the IDA program, hours by staff at partner organizations, and hours by volunteers. Other measures of inputs are salary expenses and non-salary expenses. Both institutional and economic theory—as well as evidence from the qualitative components of the evaluation of ADD (Moore *et al*., 2001)—suggest that staff may help motivate participants to reach their savings goals.

An additional hour of IDA staff time is associated with an increase in the risk of exit of 1.2 percentage points (93-percent confidence, Table 8.1). An additional hour from partner organizations is associated with a decrease in the risk of exit of 0.88 percentage points (84-percent confidence). An additional hour from volunteers had no statistically significant association.

Why would more hours by IDA staff per participant increase exit? Although we do not know, we can offer two speculative possibilities. First, data on inputs are measured with error (Chapter 6).

Second, inputs may respond to participant behavior. If programs add salaried staff when exit rates are high, it might induce a spurious negative correlation between IDA staff hours and exit.

Additional program inputs per participant per month in terms of salary expense or non-salary expense were not associated with a statistically significant change in the risk of exit (Table 8.1). Greater inputs should decrease exit, so the lack of an association is a bit of a surprise.

Unobserved factors correlated with a given program or site. Although the regression includes a wide range of measures of institutional characteristics, it cannot control for all of them. The regression controls for the possible effects on exit of unobserved factors correlated with a given program or site.[18] For example, the strictness of rule enforcement is unobserved. All else constant, a strict program might have higher exit (due to kick-outs), but the model does not control for strictness directly.

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 linked with a statistically significant, 11-percentage-point increase in the risk of exit (Table 8.2). Most of pair-wise comparisons are large and statistically significant.[19] For example, participants at the ADD/AFIA site at CVCAC are 4 percentage points more likely to exit than participants at CAPTC Large-scale (the reference point at zero) but 11 percentage points less likely to exit than participants at CAPTC Small-scale. Participants at the ADD/AFIA WSEP site were 23 percentage points more likely to exit than those at CAPTC Large-scale.

In a sense, these estimates summarize what we do not know. For example, exit at CAPTC Small-scale is 1 percentage point more likely—factors in the model constant—than exit at MACED. We know that this is due to omitted factors correlated both with exit and with the specific program, but we do not know what those omitted factors are. Some omitted factors are institutional (for example, wait period, strictness with rules, and quality of staff). Some omitted factors pertain to participants; for example, people at one site may have more experience saving and thus be less likely to exit. Some omitted factors go beyond programs and participants; for example, home prices vary by region and may affect the usefulness of IDAs for home purchase and thus the risk of exit. Likewise, unemployment varies by region and may affect precautionary motives to save.

[18] Participant characteristics may also vary in systematic-but-unobserved ways that are correlated both with a given program and with exit. For example, if a given program targets people who have declared bankruptcy, if bankruptcy constricts access to loans, and if constricted access to loans increases exit because debt cannot buffer shocks (or because IDA balances are seized by creditors), then exit at this program will be more likely than elsewhere. The estimates in Table 8.2 reflect the effects of such unobserved participant characteristics as well as the effects of unobserved program characteristics.

[19] We have not tested pair-wise comparisons with programs other than CAPTC Large-scale.

Table 8.2 Unobserved Factors Linked with Programs and Exit			
Program or program/site dummies	**Mean**	**Change in % points**	**p-value**
CAPTC Large-scale	0.19		
CVCAC (ADD/AFIA)	0.02	-4	0.12
Human Solutions	0.05	-11	0.01
CAAB (ADD/AFIA)	0.03	-13	0.01
CVCAC	0.07	-13	0.01
EBALDC	0.10	-13	0.01
Heart of America	0.04	-14	0.01
Shorebank	0.09	-14	0.01
MACED	0.02	-14	0.01
CAPTC Small-scale	0.07	-15	0.01
ADVOCAP	0.03	-15	0.01
CTMHA	0.05	-15	0.01
Alternatives FCU	0.04	-16	0.01
CAAB	0.04	-17	0.01
Near Eastside	0.08	-19	0.01
WSEP (ADD/AFIA)	0.04	-22	0.01
WSEP	0.06	-23	0.01
Other			
Participants who may get extra 1:1 match	0.01		

Participant Demographics

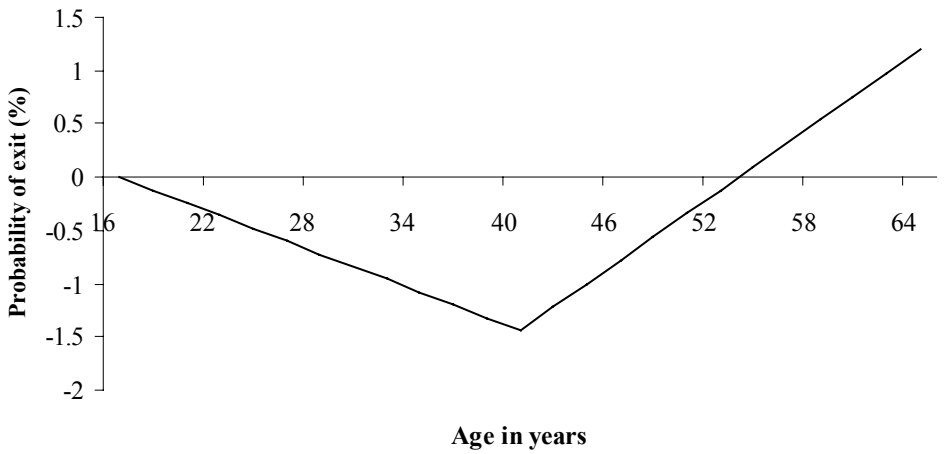
This section describes associations between exit and participant demographics (Table 8.3). Similar to the program estimates just discussed, some unknown share of these estimates captures links between exit and unobserved factors correlated with participant demographics. As such, the characteristics are viewed more as controls than as causes. For example, gender and race/ethnicity are included not to test for genetic predisposition to save in IDAs but rather to control the possible correlation of gender and race/ethnicity with unobserved, omitted factors produced in the social context.

Gender. Females were just as likely to exit as males (Table 8.3).

Age. Until age 40, additional years were linked with an increase in the likelihood of exit of 0.06 percentage points (95-percent confidence, Table 8.3 and Figure 8.2). After 40, each year was linked with a decrease in risk of 0.11 percentage points (93-percent confidence). A 65-year-old is 2.6 percentage points less likely to exit than a 40-year-old.

We do not know what causes this pattern. The up-turn at age 40 may partly reflect "hump-saving" in anticipation of retirement. It may also reflect changes in resources available to save as children age and as households accumulate non-financial assets such as cars, houses, and other consumer durables.

Figure 8.2 Age and Likelihood of Non-exit



Location of residence. Participants in areas with populations of less than 2,500 were 2.5 percentage points less likely to exit (Table 8.3).[20] The estimate is statistically significant and surprisingly large, given that rural residents may face higher transaction costs to make deposits and attend classes. Perhaps if their neighbors know that they have an IDA, then rural residents may receive greater peer support (or peer pressure) to save.

Marital status. Compared with those who never married, people who married or who divorced or separated are 0.83 to 0.9 percentage points less likely to exit (Table 8.3). People who were widowed have about the same likelihood of exit as people who never married.

Number of adults and children. The number of adults and the number of children have no statistically significant association with the risk of exit (Table 8.3).

Number of ADD participants in a household. Participants in a household that probably had another participant had the same risk of exit as others (Table 8.3).[21]

Race/ethnicity. The risk of exit was statistically the same for African Americans, Asian Americans, Caucasians, and Hispanics (Table 8.3). This suggests that the large differences in gross AMND among these groups (Chapter 12) were not due to differences in the risk of exit.

Compared to Caucasians, Native Americans were 2.5 percentage points more at-risk of exit. "Other" was 4 percentage points less at-risk.

[20] Most rural residents are in CVCAC, MACED, WSEP, and Alternatives FCU.
[21] This figure excludes households in CTMHA if multiple accounts were purely administrative.

Table 8.3 Participant Demographics and Exit			
Participant Demographics	**Mean**	**Change in % points**	**p-value**
Gender			
Male	0.20		
Female	0.80	0.05	0.92
Age (spline)	36		
0 to 40 years	33	-0.06	0.05
40 years or more	2	0.11	0.07
Location of residence			
Population 2,500 or more	0.87		
Population less than 2,500	0.13	2.5	0.02
Marital status			
Widowed	0.02	-0.12	0.94
Divorced or separated	0.27	0.9	0.11
Never-married	0.51		
Married	0.20	0.83	0.19
Household composition	3.2		
Adults (18 or older)	1.5	-0.19	0.51
Children (17 or younger)	1.7	0.15	0.28
Participants in a houshold			
One	0.94		
More than one	0.06	-0.17	0.81
Race/ethnicity			
Native American	0.03	-2.5	0.06
African-American	0.47	-0.13	0.81
Caucasian	0.37		
Hispanic	0.09	0.2	0.82
Asian-American	0.02	1.5	0.40
Other	0.03	4.0	0.02

Means taken over only non-missing observations.

Race/ethnicity is a control variable. It reflects how unobserved factors produced in the social context and that vary systematically with race/ethnicity are associated with exit; they do not reflect the effects of race/ethnicity *per se* on exit. If the model could control for all factors that affect exit, then exit and race/ethnicity would have no estimated association.

Education and Employment

Education. More education might be linked to more saving (and less risk of exit) either because education increases financial sophistication and/or future orientation or because education—itself saving in the form of human capital—reveals future orientation.

Table 8.4 Education, Employment Status, and Exit			
Education and Employment Status	**Mean**	**Change in % points**	**p-value**
Education	1.00		
Did not graduate from high school	0.15		
Completed high school or earned GED	0.26	-0.8	0.18
Attended college but did not graduate	0.37	-0.8	0.18
Graduated from 2-year college	0.03		
Graduated college (2-year/4-year unspecified)	0.11	-0.7	0.34
Graduated from 4-year college	0.07	0.2	0.85
Employment	1.00		
Unemployed	0.05		
Employed, full-time (> 35 hours per week)	0.58	-0.16	0.84
Employed, part-time (< 35 hours per week)	0.24	0.62	0.44
Not working (homemakers, retired, disabled)	0.04	0.25	0.82
Student, not working	0.06	0.6	0.51
Student, also working	0.03	0.21	0.86
Employee of IDA host organization			
No	0.98		
Yes	0.02	-0.09	0.94
Self-employment in microenterprise			
None	0.80		
Active	0.07	1.3	0.29
Inactive	0.14	-0.07	0.91

Compared to people who did not complete high school or who had a 2-year college degree,[22] people who completed high school or who attended college but did not graduate were 0.8 percentage points more likely to exit (82-percent confidence, Table 8.4). College graduates (with 4-year degrees or with unspecified degrees) were just as likely to exit as people who did not complete high school or who had 2-year college degrees. In sum, education was not strongly linked with risk of exit in ADD. This unlikely result is probably due to the amalgamation of those with 2-year degrees those who did not complete high school in the base for comparison.

Employment. Because wages provide resources to save or to buffer shocks, employment may decrease the risk of exit through increased deposits or through decreased need to make unmatched withdrawals. Employment and exit, however, had no statistically significant association (Table 8.4). We are not sure why this would be.[23]
Participants who worked for host organizations in ADD had about the same likelihood of exit as others (Table 8.4).

[22] For technical reasons—no participants with 2-year college degrees had exited as of June 30, 2000—these two groups together must be the base for comparison.
[23] The p-values in Table 8.4 are for the comparisons of a given employment status with the unemployed. We have not tested for significant differences for other pairs.

About 20 percent of participants in ADD reported that they owned a business and were self-employed, and the other 80 percent were not self-employed (Table 8.4). Of the self-employed about one-third reported income from self-employment and are called "active"; the other two-thirds are "inactive."

Self-employment often comes with volatile income and expenses and thus might cause greater emergency withdrawals and higher exit. The self-employed, however, may have more motivation to save, both because they expect volatile cash flows and because, unlike the non-self-employed, they can invest in business assets. It turns out that, on net, self-employment has no statistically significant link with exit.

Receipt of Public Assistance and Income

The regression controls for receipt of TANF or AFDC before enrollment, TANF at enrollment, SSI/SSDI at enrollment, or food stamps at enrollment. None of these factors had a strong association with exit, although people who received food stamps were 1 percentage point less likely to exit (77-percent confidence), and people who received TANF at enrollment were 0.76 percentage points more likely to exit (73-percent confidence, Table 8.5). On the whole, exit is not strongly linked with public assistance. Although this does not necessarily mean that IDAs are a good way to help people who receive public assistance, it does mean participants in ADD who received public assistance were no more likely to exit than others.

The average participant in ADD reported monthly household income at enrollment of $1,474. Of this, $1,229 (83 percent) came from "recurrent" sources (wages, retirement benefits, and public assistance), and $253 (17 percent) came from "intermittent" sources (self-employment, child support, gifts, investments, and "other"). Regardless of the source, the level of income has no statistically significant link with the risk of exit (Table 8.5). This is consistent with the broad message of Chapter 11 that income matters little for the level of saving in ADD.

Table 8.5 Public Assistance, Income, and Exit			
Assistance and Income	**Mean**	**Change in % points**	**p-value**
Receipt of public assistance			
TANF or AFDC never	0.62		
TANF or AFDC formerly	0.38	0.09	0.86
TANF currently	0.10	-0.76	0.27
No SSI/SSDI	0.89		
Receives SSI/SSDI	0.11	-0.10	0.91
No food stamps	0.79		
Receives food stamps	0.21	1.0	0.23
Household income ($100/month)			
Recurrent income (spline)	11.4		
0 to $799	4.8	0.00	1.00
$800 or more	6.6	-0.05	0.62
Intermittent income	2.2	0.02	0.74

Means taken over only non-missing observations.

Assets, Liabilities, and Insurance

Liquid assets. Besides cash, liquid assets include balances in passbook savings accounts and in checking accounts. The mere presence of an account may signal some level of financial sophistication or future orientation. Furthermore, the balance in an account can be shifted into IDAs or used to buffer shocks.[24] Thus, people with passbook and/or checking accounts are expected to save more and exit less.

The presence of a passbook savings account had no statistically significant association with exit (Table 8.6). The average balance was $250 ($505 for those with a positive balance).[25] An additional $100 was associated with an increase in the risk of exit of 0.04 percentage points (82-percent confidence). This negative effect is unexpected, but it is small.[26] Exit had but weak links with passbook savings.

More than passbook savings, checking accounts mark a greater integration with formal financial services (Hogarth and Lee, 2000; Dunham, 2000). The average balance in checking accounts for participants in ADD was $231 ($366 for those with a positive balance). The presence of an account was associated with a decrease of 0.6 percentage points in the risk of exit (78-percent

[24] Chapter 14 discusses the share of IDA deposits from new saving versus shifted assets.
[25] Participants were asked to report individual (not household) assets and liabilities.
[26] Furthermore, asset values (in MIS IDA or in any survey) are measured with error. The data on the presence or absence of an account, however, are probably accurate.

Table 8.6 Assets, Liabilities, Insurance, and Exit			
Assets, Liabilities and Insurance	**Mean**	**Change in % points**	**p-value**
Liquid assets			
No passbook savings account	0.48		
Owned passbook savings account	0.52	0.23	0.59
Balance in passbook savings account ($100s)	2.36	-0.04	0.18
No checking account	0.34		
Owned checking account	0.66	0.6	0.22
Balance in checking account ($100s)	2.11	0.09	0.20
Illiquid assets			
Renter	0.85		
Home owner	0.15	0.41	0.68
No car	0.37		
Car owner	0.63	1.1	0.05
Value of illiquid assets ($100s)	112	0.000	0.99
Liabilities			
No debt	0.35		
Some debt	0.65	-0.8	0.09
Value of liabilities ($100s)	89	0.000	0.99
Insurance coverage			
No health insurance	0.34		
Had health insurance	0.66	-0.36	0.65
No life insurance	0.68		
Had life insurance	0.32	1.5	0.14

Means taken over only non-missing observations.

confidence). Furthermore, an additional $100 was associated with a decrease in the likelihood of exit of 0.09 percentage points (80-percent confidence). Although the links are not particularly large or strong, they suggest that people with checking accounts were less likely to exit from ADD.

Illiquid assets. Other than human capital, home and cars are the chief illiquid assets of the poor. Like the presence of liquid assets, the presence of illiquid assets may proxy for unobserved factors linked with higher savings. For example, people who saved to buy a house or car in the past are probably likely to save more in IDAs than others. Illiquid assets are more difficult than liquid assets to shift into IDAs; few people would sell their cars or homes to get cash for IDA

deposits.[27] On average, total illiquid assets (home, car, land or rental property, business assets, and investments) for participants were $11,222 (16,991 for those with non-zero illiquid assets).

The risk of exit for home owners was not statistically different from the risk for renters (Table 8.6). Compared with others, car owners were 1.1 percentage points less likely to exit (95-percent confidence), perhaps because they could drive to make deposits. An increase in the value of illiquid assets did not have a statistically significant association with the risk of exit.[28] In sum, the data mildly suggest that people who already own assets are also less likely to exit.

Liabilities. Debt requires debt service; all else constant, debtors have less resources available to save and so may exit more.[29] MIS IDA recorded home mortgages, car loans, business debt, mortgages on land or rental property, loans from family or friends, student loans, credit-card debt, and unpaid household or medical bills. On average, total liabilities were $8,940 ($12,947 for those with non-zero debt).

Like the value of assets, the value of liabilities is measured with error, and this may explain the lack of association between exit and the value of total liabilities. Even if people do not know exactly how much they owe, however, they probably know whether they owe something. Participants who reported some debt were, all else constant, 0.8 percentage points more likely to exit (91-percent confidence, Table 8.6).

Enrollment Characteristics

The regression includes some factors related to enrollment and length of participation. They are best seen as controls rather than causes.

Previous relationship with the host organization. On the one hand, the presence of a previous relationship might proxy for unobserved characteristics that would increase the risk of exit. On the other hand, the host is likely to refer those participants whom it expects are most likely to succeed.[30] The association between exit and a previous relationship with the host turns out to be statistically insignificant (Table 8.7).

Referred by a partner organization. Even more than people related to the host, people referred by partner organizations were probably expected to do well in IDAs. On the other hand, the use of social services may proxy for unobserved factors linked with exit. People referred by partners were 1 percentage point more likely to exit (87-percent confidence, Table 8.7).

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[27] Participants may still make implicit shifts from resources that would have been used for maintenance or for additional investment in illiquid assets (Chapter 14).
[28] Values are subject to more measurement error than is ownership.
[29] Of course, debt service requires that income exceeds consumption, but this type of saving does not increase balances in IDAs.
[30] Of course, not all people in ADD with a previous relationship with the host were referred by the host, but some were.

Table 8.7 Enrollment Characteristics and Exit

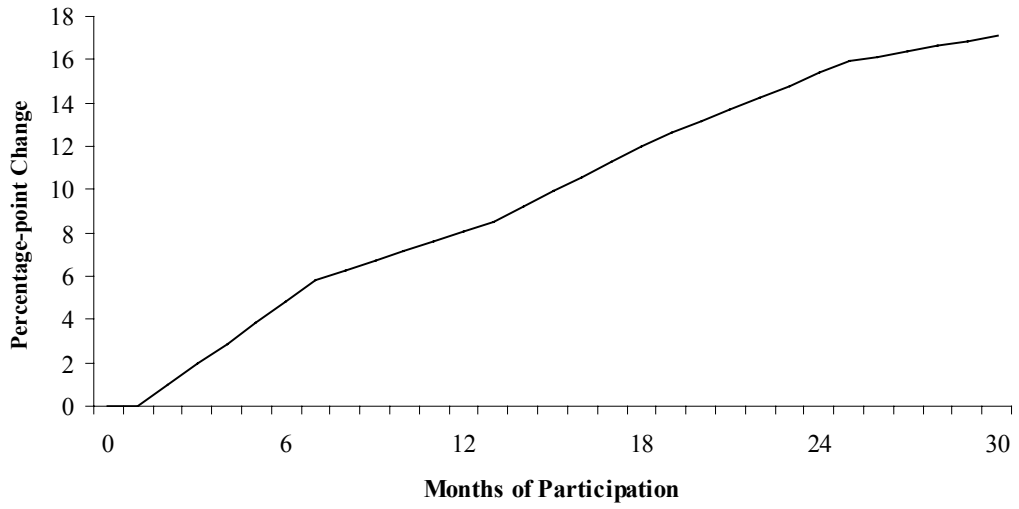
Enrollment Characteristics	Mean	Change in % points	p-value
Previous relationship with host organization			
No	0.59		
Yes	0.41	-0.34	0.53
Referred by partner organization			
No	0.70		
Yes	0.30	-1.0	0.13
Date of enrollment			
Before June 30, 1999	0.58		
After June 30, 1999	0.42	6.4	0.01
Length of participation (months)	13.3		
1 to 6	5.7	1.0	0.01
7 to 12	3.8	0.45	0.02
13 to 18	2.2	0.7	0.01
19 to 24	1.2	0.54	0.02
24 or more	0.4	0.24	0.47

Date of enrollment. The enrollment goal for ADD was 2,000 participants, and the planned deadline was December 31, 1999. In the last few months of 1999, the pace of enrollment quickened to meet this goal. In addition, some sites set up after September 1999 had a tighter cap on income (150 percent of poverty) than the original sites (200 percent of poverty). Furthermore, the people who expected the most success may have enrolled first. Thus, compared to pre-June 1999 enrollees, post-June 1999 enrollees may have been lower savers.

The model controls for shifts in unobserved characteristics after June 1999; post-June 1999 enrollees were 6.4 percentage points less likely to exit (99-percent confidence, Table 8.7). This surprising result occurs even though we control for length of participation, which is shorter on average for later enrollees. We cannot explain it, although some exits from this late cohort may not have been inactive long enough as of June 30, 2000, for programs to recognize them as exits.

Length of participation. Like the bivariate analysis in Figure 8.1, the regression suggests that the likelihood of non-exit increased with months of participation, mostly at a decreasing rate. The estimated association was statistically significant (Figure 8.3 and Table 8.7). Length of participation should be viewed not as a cause but as a control. As time passes, exit may slow because savers have greater potential matches to lose. Survivor bias also plays a role; participants unlikely to exit, regardless of length of participation, are also likely to have participated the longest as of June 30, 2000. It is also possible that the likelihood of exit decreases with time because participants become more hopeful of success as they go longer without exiting and build larger balances.

Figure 8.3 Length of Participation and Likelihood of Exit



Characteristics Determined after Enrollment

The regression controls for several factors determined after enrollment. Although these factors may influence saving, saving may also influence them. This possible two-way causation suggests that they be viewed more as controls than as causes.

Number of IDA accounts. For administrative reasons, some participants at CTMHA have more than one IDA account. The analysis aggregates these into a single account. These people are 4.6 percentage points more likely to exit than others (98-percent confidence, Table 8.8).

Direct deposit. Institutional theory suggests that direct deposit may increase savings because it removes the need to make recurrent choices to save (Beverly, Moore, and Schreiner, 2001; Beverly and Sherraden, 1999; Bernheim, 1997; Caskey, 1997; Thaler, 1990). Direct deposit was linked with a decrease in the risk of exit of 2.7 percentage points (83-percent confidence, Table 8.8).

Table 8.8 Characteristics Determined after Enrollment and Exit

Characteristics	Mean	Change in % points	p-value
Number of accounts			
One	0.99		
More than one	0.01	-4.6	0.02
Use of direct deposit to IDA account			
No	0.95		
Yes	0.05	2.7	0.17

Summary: Exit and Characteristics of Participants and Programs

About 16 percent of enrollees in ADD had exited as of June 30, 2000. The monthly risk of exit peaks in month 6 at 1.6 percent, and it runs at 1 percent per month for about a year thereafter.

We highlight key results from a regression that controls for observed factors.

- Higher match rates were associated with a reduced risk of exit.
- Higher match caps were associated with a reduced risk of exit.
- Program inputs did not have a clear, consistent link with the risk of exit.
- Unobserved factors linked with a given program were highly correlated with the risk of exit.
- The risk of exit was statistically the same for African Americans, Asian Americans, Caucasians, and Hispanics.
- Education and employment had no clear links with the risk of exit.
- Receipt of public assistance was not correlated with the risk of exit.
- The risk of exit was not associated with the level of income.
- Ownership of checking accounts and cars was linked with a lower risk of exit, and debt was linked with higher risk.
- Home ownership, passbook-account ownership, and insurance coverage had no association with the risk of exit.
- Participants who used direct deposit with their IDA had a lower risk of exit.

9. Institutional Characteristics, Participant Characteristics, and Net Deposits

Average monthly net deposits (AMND) are defined as net deposits divided by months of participation.[1] AMND is the key outcome measure in this report; greater AMND implies greater saving and asset accumulation in IDAs.

For institutional characteristics in ADD, we find that the match rate was not associated with AMND, more financial education (up to a point) was associated with higher AMND, and higher match caps were associated with higher AMND. For participant characteristics, we find that people who owned assets when they joined an IDA program had higher AMND, that race/ethnicity was correlated with unobserved factors that were also correlated with AMND, and that income and current receipt of public assistance were not associated with AMND.

Background

A basic question for asset-based policy is whether the poor can save and accumulate assets in IDAs (Sherraden, 1999a). ADD suggests that they can: as of June 30, 2000, mean AMND across participants was $25.42 (median $17.96). Net deposits per year were about $300. If this pattern holds, then the average participant—with an average match rate of 2:1 and an average time cap of 33 months—will deposit about $840 and accumulate about $2,500. The poor can save in IDAs.[2]

For policy, a subsequent question is *how* do the poor save? In particular, do savings depend only on preferences and economic incentives? If so, then policy should focus on monetary incentives such as match rates. Or do savings also depend on institutional structures? If so, then policy should also focus on, for example, financial education, awareness campaigns, and explicit expectations that all can save.

Moore *et al*. (2001) analyze saving strategies in a sample of participants in ADD. This chapter complements that work; it addresses the links between AMND and the characteristics of institutions and participants. The intent is to build knowledge that might guide attempts to fine-tune institutional designs and public policy.

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[1] *Net deposits* are gross deposits minus total unmatched withdrawals minus excess balances.

[2] This result is not trivial; the argument that the poor cannot save is common and sometimes blocks attempts to find ways to give the poor access to institutional saving structures. Of course, that the poor can save in IDAs does not necessarily mean that they save more with IDAs than without. Nor does it necessarily mean that IDAs improve well-being; tests for impact must wait for the second round of data from the experimental-design component of ADD. Even positive impacts would not necessarily mean that IDAs are worthwhile; that would require that benefits (financial and non-financial) exceed costs. The evaluation of ADD will offer a judgement on whether IDAs are worthwhile (Schreiner, 2000b).

Analysis Strategy

Given length of participation, AMND depends on deposits net of withdrawals. In turn, net deposits depend on a host of factors. The analysis strategy here is to control for many of these factors through multivariate regression.

Some factors influence net deposits but are not influenced by net deposits. For example, AMND does not affect age, but age may affect AMND. Other factors both influence net deposits and are influenced by them. For example, programs may adjust staff in response to saving by participants, and participant saving may respond to inputs from staff. Such two-way causation can bias estimates of associations between characteristics and AMND; below, we point out when this might happen, and, when possible, we speculate about the likely nature of the bias.[3]

Although the regression includes an unusually large number of controls (11 institutional characteristics and 31 participant characteristics), no regression can control for everything.[4] Unobserved factors omitted from the model, if correlated with both observed factors in the model and with AMND, can impart a bias to the estimates for factors in the model. When possible, we control for unobserved factors correlated with observed factors such as the program or site, gender, race/ethnicity, or asset ownership. For example, the estimated link between gender and AMND reflects not gender *per se* but rather unobserved factors linked with gender.

Self-selection and non-exit. All exits have zero AMND by definition, so unobserved factors that influence exit may also influence AMND. Furthermore, the process that determines exit is probably distinct from the process that determines AMND, and it is probable that people with different likelihoods of exit (even if they have not exited as of June 30, 2000) also have systematically different levels of AMND.

We model exit and take the difference between predicted exit status and observed exit status as a proxy for unobserved factors that may influence AMND. This is the essence of the technique to control for self-selection known as the Heckman two-step (Heckman, 1979 and 1976; Greene, 1993). The first step is a probit regression on exit status for all participants, and the second step is a least-squares regression on AMND for non-exits with a variable to control for unobserved factors correlated both with exit and with AMND. Here, the Heckman two-step controls for self-selection into exit.[5] An advantage of the two-step model is that it allows a given characteristic to

[3] As in Chapters 5 and 8, the regression analysis here uses data on participant characteristics at-enrollment. Descriptive statistics use the most recent record.

[4] Control variables were selected if they were expected to influence AMND, appeared in MIS IDA, and had sufficient variation. With variables for missing data, for different attributes of a given characteristic, or for non-linear effects, 124 parameters are estimated. Chapter 8 discusses the controls for missing data.

[5] The data from ADD cannot address self-selection into participation. That is, among people eligible for ADD, those who chose to join probably expected greater net benefits than did those who did not choose to join. Thus, AMND for participants probably exceeds what it would be for non-participants, had they joined. The results here are still meaningful, but they pertain only to participants, not to eligibles.

influence exit differently than it influences AMND. Chapter 8 reports the first step, and this chapter reports the second step.

Model fit. The second-step least-squares regression includes 1,961 observations on AMND for non-exits as of June 30, 2000.[6] Adjusted R^2 was 0.41, so variation in observed factors explains 41 percent of the variation in AMND. For a cross-section savings regression, this is quite respectable. The hypothesis that the model as a whole is statistically insignificant is rejected with 99-percent confidence.[7]

AMND for Non-exits

Regression Results

Regression estimates the sign (positive or negative), size, and statistical significance of associations between an outcome (AMND) and characteristics assumed to influence the outcome. A regression estimate should approach the true association better than bivariate comparisons because regression controls for correlations with more than one characteristic.

Tables 9.1 to 9.8 contain the means of the characteristics in the model for non-exits, the estimated changes in AMND (in units of dollars of net deposits per month) given a unit increase in a given characteristic,[8] and the p-value of the estimated change.[9] Although the results are presented in 8 tables, they all come from one regression. The discussion here omits some caveats and explanations already made in Chapter 8.

Institutional Characteristics

The estimates of the associations between institutional characteristics and AMND presented below are less precise than they might appear because of possible two-way causation. Institutional designs were not randomly assigned to programs in ADD; rather, each program made its own rules, and staff probably based designs partly on expected participant behavior. If expectations were at least partly accurate, then not only does design cause behavior but also

[6] Thirty-four non-exits were omitted due to missing values.

[7] The correlation between prediction errors in the Heckman two-step is –0.14, and the p-value for the estimated coefficient on the Inverse Mills Ratio in the second step is 0.49. For this specification, the risk of exit was not correlated with the expected level of AMND.

[8] If a given factor is in only the second step, then estimates in Tables 9.1 to 9.8 are the predicted change in AMND for non-exits. Most factors are in both steps, however, so the change in AMND also depends on the change in the risk of exit due to the change in a given factor (Tables 8.1 to 8.8). LIMDEP 7.0 computes this total effect (Greene, 1995), but it crashes on this model with this data. The two-step model was estimated in SAS without estimates of the total effect.

[9] Appendix B discusses p-values and confidence levels. The p-values here are based on standard errors adjusted for heteroskedasticity.

behavior causes design. The model assumes one-way causation from design to behavior, so two-way causation would lead to bias.[10]

Match rate. None of the estimated associations between match rates and AMND were statistically significant (Table 9.1). This suggests that the match rate has no effect on AMND.[11] This may seem like a surprise, especially because Chapter 5 found that higher match rates are associated with decreased risk of unmatched withdrawals and because Chapter 8 found that higher match rates are associated with risk of exit. Research on 401(k) plans, however, commonly finds that increases in match rates (once past 0.25:1 or so) do not increase contributions and may even decrease them (Basset, Fleming, and Rodrigues, 1998; Kusko, Poterba, and Wilcox, 1994; Bernheim and Scholz, 1993).

How can this be? In IDAs, some participants and some programs may respond not to the match rate but to the match cap and/or to the maximum possible asset accumulation (Sherraden *et al*., 2000). Programs may set match rates so that total asset accumulation can reach a given goal. For example, staff at MACED did not expect their very poor participants to save much; they set a lifetime match cap of $360 with a match rate at 6:1, so participants can accumulate $2,520. Some participants at Near Eastside and WSEP can accumulate about the same amount, but they have a $600 match cap and a 3:1 match rate. In essence, programs may assign higher match rates if they expect their participants to save less, regardless of the match rate. This would dampen the estimated association between AMND and the match rate.

Furthermore, participants might "target save" in that, regardless of the match rate, they try to reach the match cap. This will also dampen estimates of the association of the match rate with AMND. They may also "target save" with a target below the match cap, in which case higher match rates will *decrease* AMND. Chapter 13 discusses match rates further.

Monthly savings target. The *monthly savings target* is defined as the amount which, if saved each month and not removed in unmatched withdrawals, would produce net deposits equal to the total match cap in the last month before the time cap. 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.

[10] Some programs have a single match rate (or a single match cap) for all participants, but some programs have—within a single program—different groups of participants with different match rates (or different match caps). The estimated effects for these two institutional features are based on those programs where they vary among groups of participants (Appendix C).

[11] Up through 3:1, the estimates increase with the match rate (0.8 for 1:1, 1.1 for 2:1, and 2.4 for 3:1). If these estimates were statistically significant (they are not), then it would suggest that AMND peaks with a match rate of 3:1.

Table 9.1 Institutional Characteristics and Net Deposits			
Institutional Characteristics	**Mean**	**Change in $**	**p-value**
Match rate			
1:1	0.26	0.8	0.83
2:1	0.51	1.1	0.77
3:1	0.12	2.4	0.48
4:1 to 7:1	0.06		
Match cap			
Monthly savings target	44	0.36	0.01
Match-cap structure			
Annual	0.56		
Lifetime	0.44	2.3	0.47
Hours of financial education	21.6		
General (spline)	10.5		
None	0.08	6.7	0.12
1 to 6	5.7	1.2	0.08
7 to 12	3.5	0.56	0.10
13 to 18	0.8	-0.70	0.14
19 or more	0.4	0.54	0.14
Asset-specific (spline)	11.1		
1 to 6	4.1	2.5	0.01
7 to 12	1.8	-1.8	0.01
13 to 18	0.9	0.29	0.74
19 or more	4.4	-0.12	0.20
Program inputs per participant per month			
Salaried IDA staff (hours)	2.7	-5.6	0.01
Partner staff (hours)	0.31	0.45	0.85
Volunteer staff (hours)	0.84	-4.2	0.01
Salary expense ($)	44	0.67	0.01
Non-salary expense ($)	22	-0.10	0.35

Means taken over only non-missing observations.

At least three forces may drive the result. First, institutional theory suggests that participants may change match caps into goals. Higher goals would lead to more effort and more savings. Second, AMND is censored for participants who save up to the match cap. This means that even if the match cap does not affect desired AMND, average observed AMND will be higher for participants with higher match caps. The regression would pick this up as a positive—but spurious—correlation between the match cap and AMND.[12] Third, programs may have assigned

[12] A crude way to control for censoring is to remove the 10 percent of cases at the match cap as of June 30, 2000. With only non-censored cases, the estimated association between the target

higher targets if they expected their participants would save more, regardless of the target. If so, then high savers tend to have high targets and low savers low targets. Even if the target *per se* does not affect saving, the regression would still detect a positive (and spurious) correlation between the target and AMND. Probably all three forces matter to some degree, but the importance of each is unknown. We can tackle censoring, but precise distinctions between institutional effects versus bias due to two-way causation are not possible with the data from ADD.

Match-cap structure. AMND did not have a statistically significant association with the match-cap structure, whether annual or lifetime (Table 9.1).

Financial education. All programs in ADD require financial education. Each additional hour in the range of 1 to 6 hours was associated with a $1.20 increase in AMND (Table 9.1); 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. From 13 to 18 hours, each hour was associated with a decrease in AMND of $0.70, and each hour above 19 was linked with an increase of $0.54. The estimates are statistically significant with at least 80-percent confidence.

For asset-specific financial education, 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. These are large effects. Hours after 12 did not have large, statistically significant effects.

In broad terms, AMND increases with financial education, but only up to a point. Chapter 10 discusses financial education further.

Program inputs. 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 9.1). An additional hour worked by staff at partner organizations had no statistically significant link with AMND.

Non-salary expenses had no statistically significant association with AMND (Table 9.1). Each dollar of program inputs per participant per month in terms of salary expense, however, was associated with an increase of AMND of $0.67 (99-percent confidence). This is a large effect. The question for policy is whether a dollar of administrative expense is worth $0.67 of deposits.

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and AMND falls from $0.36 to $0.22. Of course, most participants were not at a time cap (either annual or lifetime) as of June 30, 2000, so many for whom AMND would be censored at the time cap were not censored, much as many people who would put $2,000 in an IRA by April 15 of one year would not have done so as of October of the previous year. Given that people with lifetime match-cap structures may wait until the end of ADD to make their final deposits and given that about 30 percent of participants with an annual match-cap structure were at the match cap in their twelfth month, censoring may explain a large share of the observed link between the monthly savings target and 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, and time from partner organizations and expenses for salaries had no link with AMND. Only non-salary expense was linked with higher AMND. Three speculative explanations are possible. First, data on inputs (especially from partner organizations) are measured with error. Second, inputs may respond to participant behavior; if AMND is low, programs may add staff, inducing a spurious negative correlation between inputs and AMND. Third, it could just happen that programs that hired more and better-paid staff also had lower AMND.

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.[13]

These estimates suggest that unobserved factors correlated with AMND differ systematically across programs and sites. They are control variables, not tests for which program elicits the highest AMND. They do not mean that the ADD/AFIA site at CVCAC (where is AMND is $21 less than at CAPTC Large-scale, observed factors constant) causes its participants to have $51 less AMND than they would at the ADD/AFIA site of CAAB (where AMND is $30 more than at CAPTC Large-scale). The estimates do depend in part on unobserved program factors, but they also depend on unobserved participant factors and on unobserved factors beyond programs and participants. We do not know the omitted factors nor how much each one matters.

Participant Demographics

This section describes associations between AMND and participant demographics. These factors are best seen as controls rather than as causes; they proxy for unobserved factors correlated with both participant demographics and AMND.

Gender. Gender is included as a control variable, not because we want to test whether there is a genetic predisposition to save in IDAs that differs between men and women, but because gender is correlated with unobserved factors produced in the social context that may be correlated with AMND. It turns out that gender has no statistically significant effect (Table 9.3).

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

Table 9.2 Unobserved Factors Linked with Programs and Net Deposits			
Unobserved Factors	**Mean**	**Change in $**	**p-value**
Program or program/site dummies			
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
Other			
Participants who may get extra 1:1 match	0.02	1.5	0.78

Age. Up to 40, AMND increases by 10 cents for each year (72-percent confidence). After that, it decreases by 15 cents per year (80-percent confidence).

Location of residence. Residence might affect AMND through transaction costs of deposits and withdrawals. Residence, however, did not have a statistically significant link with AMND.

Marital status. Marital status might proxy for unobserved factors that affect saving. Marital status, however, had no statistically significant link with AMND.

Number of adults and children. Each adult was linked with a $2.10 increase in AMND (99-percent confidence, Table 9.3). With average AMND of $25.42, this is a large effect. The number of children did not have a statistically significant association with AMND.

Number of ADD participants in a household. In the absence of peer effects and with all else constant, total household savings would be constant and so per-participant AMND would be expected to decrease with each additional participant. Thus, an insignificant association, a significant positive association, or a significant negative association smaller than half of AMND may be seen as evidence of positive peer effects. On the other hand, households with unobserved factors that tend to increase saving may be more likely to have two participants. The regression did not find a statistically significant link between AMND and the number of participants in a household (Table 9.3). This suggests that household savings in IDAs are twice

Table 9.3 Participant Demographics and Net Deposits			
Participant Demographics	**Mean**	**Change in $**	**p-value**
Gender			
Male	0.20		
Female	0.80	-0.5	0.69
Age (spline)	36		
0 to 40 years	34	0.10	0.28
40 years or more	3	-0.15	0.20
Location of residence			
Population 2,500 or more	0.86		
Population less than 2,500	0.14	-1.4	0.54
Marital status			
Widowed	0.02	-2.5	0.49
Divorced or separated	0.28	-0.35	0.79
Never-married	0.49		
Married	0.21	0.44	0.79
Household composition	3.2		
Adults (18 or older)	1.5	2.1	0.01
Children (17 or younger)	1.7	0.32	0.42
Participants in a houshold			
One	0.94		
More than one	0.06	-0.31	0.89
Race/ethnicity			
Native American	0.03	-4.9	0.11
African-American	0.46	-3.4	0.02
Caucasian	0.38		
Other	0.03	0.66	0.83
Hispanic	0.09	2.9	0.18
Asian-American	0.02	7.3	0.04

Means taken over only non-missing observations.

as high with two participants as with one and is consistent with strong peer effects and/or with strong unobserved factors.

Race/ethnicity. Like gender, we control for race/ethnicity because of its correlation with unobserved factors produced in the social context that may be correlated with AMND. Chapter 12 discusses race/ethnicity and saving further.

Compared with Caucasians and with other factors in the model constant, AMND was $4.90 less for Native Americans (89-percent confidence, Table 9.3) and $3.40 less for African Americans (98-percent confidence). The difference in AMND between Caucasians and "Other" was not

statistically significant. Observed factors constant, Hispanics saved $2.90 more than Caucasians (83-percent confidence), and Asian Americans saved $7.30 more (96-percent confidence).[14]

It would be wrong to infer from these estimates that race/ethnicity *per se* affects saving. There is no gene for saving, although social processes—sometimes through centuries—have led to strong correlations between race/ethnicity and unobserved factors that affect saving. In a perfect model that included all factors that influence AMND, race/ethnicity would have no link with saving.

Education and Employment

Education. More education (and thus more human capital) might be linked with higher AMND either because education increases financial sophistication and future orientation and/or because education serves as a proxy for these unobserved factors.

Table 9.4 Education, Employment Status, and Net Deposits

Education and Employment Status	Mean	Change in $	p-value
Education	1.00		
Did not graduate from high school	0.14		
Completed high school or earned GED	0.24	-2.9	0.09
Attended college but did not graduate	0.38	-1.0	0.56
Graduated from 2-year college	0.04	-6.0	0.06
Graduated college (2-year/4-year unspecified)	0.11	-1.1	0.61
Graduated from 4-year college	0.08	2.7	0.24
Employment	1.00		
Unemployed	0.05		
Employed, full-time (> 35 hours per week)	0.60	2.6	0.31
Employed, part-time (< 35 hours per week)	0.24	2.0	0.44
Not working (homemakers, retired, diasabled)	0.04	2.7	0.42
Student, not working	0.05	4.1	0.21
Student, also working	0.03	5.8	0.13
Employee of IDA host org.			
No	0.97		
Yes	0.03	-3.9	0.22
Self-employment in microenterprise			
None	0.78		
Active	0.08	-4.0	0.09
Inactive	0.14	-0.3	0.83

People with a 4-year college degree saved more than others (76-percent confidence, Table 9.4), but the rest of the results are puzzling. They suggest that people with a 2-year college degree and people who completed high school saved less than people with less education (people who

[14] We did not test statistical significance for pair-wise comparisons beyond Caucasians.

did not complete high school and people who attended college but did not graduate). People who graduated college (2-year/4-year unspecified) saved about as much as people who did not complete high school or who attended college but did not graduate.

We do not know why people who did not finish high school would save more than people who did finish high school or more than people with 2-year college degrees.[15]

Employment. Because wages might be saved, employment may increase AMND. Compared to the unemployed and with other observed factors constant, non-student employment did not have statistically significant associations with AMND, although all the coefficients are positive (Table 9.4). Students save more than the unemployed, $4.10 if the student did not work (79-percent confidence) and $5.80 if the student did work (87-percent confidence).[16] We do not know why AMND does not vary much across employment groups nor why students save more.

AMND was $3.90 less for participants who also work for a host organization (78-percent confidence, Table 9.4). This is a puzzle; perhaps they joined to please co-workers but did not strongly commit themselves to make the sacrifices required to save, or perhaps they are more disadvantaged than the average participant in ADD in unobserved ways.

The "actively" self-employed (those who report both business ownership and self-employment income) had AMND of $4.00 less than the non-self-employed (91-percent confidence, Table 9.4). Again, we do not know why. The volatility of self-employment income and expenses might lead to erratic deposits or greater emergency withdrawals, but, if people anticipate these emergencies and plan for them and if IDAs are not too illiquid, then this volatility should prompt greater deposits. Furthermore, compared to the non-self-employed, the self-employed have one more type of asset that they could possibly save for (business assets).

The difference in AMND for the non-self-employed and for the "inactive" self-employed (those who report business ownership but not self-employment income) is statistically insignificant.

Public Assistance and Income

Receipt of TANF or AFDC before enrollment was linked with $1.60 less AMND (81-percent confidence), but receipt of public assistance at enrollment—whether TANF, SSI/SSDI, or food stamps—had no statistically significant link (Table 9.5). Other factors in the model constant, current receipt of welfare is uncorrelated with unobserved factors that reduce saving.[17]

[15] Perhaps people who did not complete high school get larger EITC payments, and perhaps this increases their deposits. People with 2-year degrees might save less because of student debt.
[16] We did not test comparisons for pairs of groups that did not include the unemployed.
[17] Perhaps former recipients save less because they are unaware of relaxed asset limits.

Table 9.5 Public Assistance, Income, and Net Deposits			
Public Assistance and Income	**Mean**	**Change in $**	**p-value**
Receipt of public assistance			
TANF or AFDC never	0.61		
TANF or AFDC formerly	0.39	-1.6	0.19
TANF currently	0.10	0.3	0.90
No SSI/SSDI	0.89		
Receives SSI/SSDI	0.11	-1.0	0.67
No food stamps	0.79		
Receives food stamps	0.21	0.78	0.68
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.

The level of intermittent income—but not the level of recurrent income—had a statistically significant association with AMND; each $100 of intermittent income was linked to $0.32 more AMND (96-percent confidence, Table 9.5).[18] With an average savings rate in ADD of 2.2 percent, this is a small effect. These results are consistent with the broad conclusion of Chapter 11 that income has little effect on saving behavior in ADD.

Assets, Liabilities, and Insurance

Liquid assets. Balances at enrollment in passbook savings accounts or in checking accounts may proxy for financial sophistication, future orientation, or other unobserved factors linked with saving success. Account balances may also be shifted into IDAs. For all these reasons, people who own an account when they start an IDA are likely to save more.

Ownership of a passbook savings account had no statistically significant link with AMND (Table 9.6). Each $100 of balances, however, was linked with an increase of $0.16 (98-percent

[18] Economic theory predicts that savings are more likely from unexpected income (and dissavings from unexpected income shortfalls) than from expected flows (*e.g.*, Deaton, 1992b). We do not know, however, how well our definition of recurrent income corresponds with expected income nor how well our definition of intermittent income corresponds with surprise income. Furthermore, we measure resource inflows at one point in time; they may or may not vary through time. Even if what we call "intermittent" income is truly intermittent, then its level in a given month would not affect average AMND in a cross-section unless people did not expect it to be intermittent.

Table 9.6 Assets, Liabilities, Insurance, and Net Deposits

Assets, Liabilities, and Insurance	Mean	Change in $	p-value
Liquid assets			
No passbook savings account	0.46		
Owned passbook savings account	0.54	0.27	0.81
Balance in passbook savings account ($100s)	2.46	0.16	0.02
No checking account	0.30		
Owned checking account	0.70	4.0	0.01
Balance in checking account ($100s)	2.36	0.13	0.17
Illiquid assets			
Renter	0.83		
Home owner	0.17	3.8	0.09
No car	0.35		
Car owner	0.65	1.9	0.11
Value of illiquid assets ($100s)	126	-0.002	0.50
Liabilities			
No debt	0.33		
Some debt	0.67	-3.2	0.01
Value of liabilities ($100s)	100	0.0016	0.66
Insurance coverage			
No health insurance	0.33		
Had health insurance	0.67	-0.27	0.91
No life insurance	0.66		
Had life insurance	0.34	0.48	0.84

Means taken over only non-missing observations.

confidence, Table 9.6).[19] In a year, each $100 of passbook savings was linked with an increase in net deposits of $1.92.

Owners of checking accounts can bounce checks, so checking accounts require greater financial sophistication than passbook savings accounts (Caskey, 2000). Also, people with checking accounts can more easily make deposits by mail and avoid the transaction costs of a trip to the bank. A checking account may thus proxy for unobserved characteristics—such as having saved in the past or not ending each month broke—linked with saving success. Ownership was associated with an increase in AMND of $4.00 (99-percent confidence, Table 9.6). Furthermore,

[19] Data on asset values (in MIS IDA or in other data sets) are measured with error. The data on account ownership, however, are probably accurate.

each $100 of checking balances was linked with an increase in AMND of $0.13 (83-percent confidence). Together, these are large effects (16 percent of average AMND). The average participant with a checking account (and a balance of $366) made annual net deposits of about $50 more than a participant without a checking account. We have no way to know what part of this is due to shifted assets versus unobserved factors correlated with ownership.

Illiquid assets. Other than human capital, houses and cars are the chief illiquid assets of the poor. Like liquid assets, illiquid assets may proxy for unobserved factors correlated with higher saving. Illiquid assets, however, are more difficult than liquid assets to shift into IDAs.[20]

Other factors in the model constant, AMND was $3.80 higher for home owners than for renters (91-percent confidence, Table 9.6). Likewise, AMND was $1.90 higher for car owners (89-percent confidence). Compared with average AMND, these effects are large. In contrast, the value of illiquid assets was not associated with AMND.[21] In sum, ownership of a car or home was strongly linked with higher AMND, probably because it proxies for unobserved factors correlated with higher saving.

Liabilities. Requirements for debt service mean that, all else constant, debtors have less resources available to save. The presence of debt may also proxy for a lack of future orientation or for other unobserved characteristics linked with low savings. AMND was $3.20 lower for participants who reported some debt at enrollment (99-percent confidence, Table 9.6). This is a large effect. In contrast, the value of liabilities—which, like the value of assets, is always measured with error—has no statistically significant association with AMND.

To sum up, debtors save less in IDAs. Of course, debt service is a form of saving because it increases net worth and because it requires that income exceed consumption.

Insurance coverage. The presence of insurance may proxy for future orientation, financial sophistication, or other unobserved characteristics linked with higher saving.[22] On the other hand, premia (at least for life insurance) would reduce the amount of resources available to save. Neither health insurance (including coverage by Medicaid or Medicare) nor life insurance had a statistically significant link with AMND (Table 9.6).

Enrollment Characteristics

The regression includes some factors related to enrollment and the length of participation. They are best seen as controls rather than causes.

Previous relationship with the host organization. The receipt of services from the host may proxy for unobserved factors that impede saving. AMND was $1.80 lower for those with a previous relationship with the host (86-percent confidence, Table 9.7). This is a large effect.

[20] Implicit shifts are still possible from resources that would have been used for maintenance or for additional investment in illiquid assets (Chapter 14).
[21] Again, values are likely measured with more error than is ownership.
[22] Some people—especially the poor—also save in the form of cash-value life insurance.

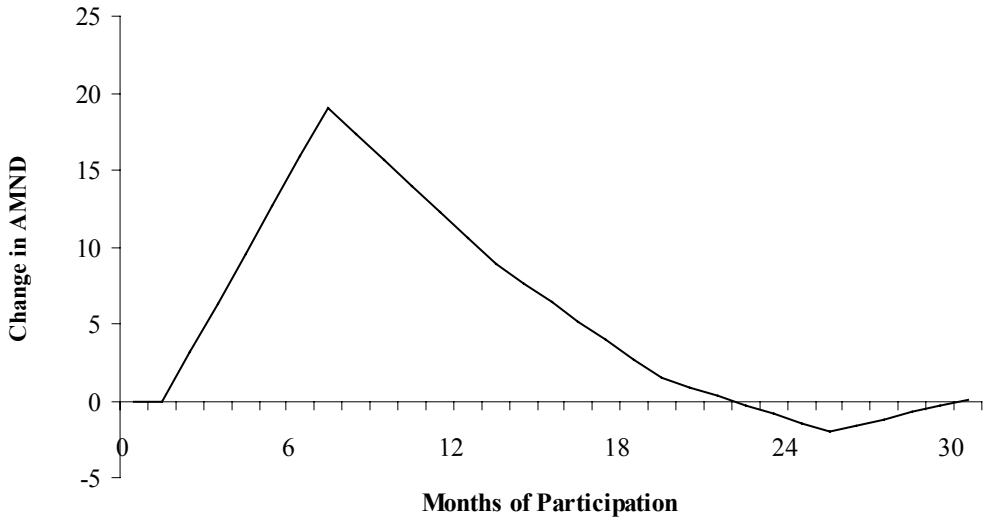
Table 9.7 Enrollment Characteristics and Net Deposits			
Enrollment Characteristics	**Mean**	**Change in $**	**p-value**
Previous relationship with host org.			
No	0.59		
Yes	0.41	-1.8	0.14
Referred by partner organization			
No	0.72		
Yes	0.28	-0.2	0.91
Date of enrollment			
Before June 30, 1999			
After June 30, 1999	0.46	-7.7	0.01
Length of participation (months)	13.8		
1 to 6	5.7	3.2	0.01
7 to 12	3.9	-1.7	0.01
13 to 18	2.4	-1.2	0.02
19 to 24	1.4	-0.6	0.20
24 or more	0.5	0.4	0.45

Referred by a partner organization. Like people with a previous relationship with the host, people referred by a partner organization have received some social services, and this may signal something about their unobserved characteristics. The association between being referred and AMND, however, was statistically insignificant (Table 9.7).

Date of enrollment. The push to meet enrollment targets seems to have caused a shift in observed and unobserved participant characteristics. Even with controls for the length of participation (which is shorter on average for later enrollees), AMND for post-June 1999 enrollees was $7.70 less than for pre-June 1999 enrollees (99-percent confidence, Table 9.7). This is a large effect. As speculated in Chapter 7, quicker enrollment, tighter income caps, and getting past the cream of potential participants may have driven this result.

Length of participation. AMND is strongly linked with the length of participation (Table 9.7, Figure 9.1), increasing by $3.20 per month in the first six months (99-percent confidence). In months 7 to 12, however, AMND decreases by $1.70 per month (99-percent confidence); in months 13 to 18, it decreases by $1.20 per month (98-percent confidence). The pattern of decreases at a decreasing rate continues in months 19 to 24 ($0.60 per month, 80-percent confidence). These are all large effects. After month 24, the change in AMND is not statistically significant.

Figure 9.1 Length of Participation and Net Deposits for Non-exits



Several explanations (not based on data from ADD) might be behind the surge and subsequent plunge in AMND. First, participants might fund IDA deposits from new savings from increased time and effort in household production or from reduced consumption. With time, they may get tired, and new savings may shrink. Second, new participants may shift some assets from cash, checking accounts, and passbook savings accounts into IDAs. In time, however, liquid assets to shift may dwindle. Third, participants may be more motivated at first as they learn about IDAs and attend classes. As the newness wears off, the spark may ebb. Furthermore, IDA staff may spend more time on new participants. Fourth, it is likely that some participants enroll at a high point in their financial lives (for example, after they receive a tax refund or an EITC payment). With time, deposits fall off as inflows regress to a more average state.

Characteristics Determined after Enrollment

The regression controls for several factors determined after enrollment. Although they may affect saving, saving may also affect them. They are more controls than causes.

Number of IDA accounts. Some participants at CTMHA have more than one account as a way to increase the match cap. AMND was $17.70 higher for them than for others (99-percent confidence, Table 9.8). The effects are there even though we control for the increase in the monthly savings target due to the multiple accounts. Perhaps the presence of multiple accounts has an institutional effect that serves to increase savings.

Direct deposit. Institutional theory suggests that direct deposit may increase savings because it removes the need to make recurrent choices to save (Beverly, Moore, and Schreiner, 2001; Beverly and Sherraden, 1999; Bernheim, 1997; Caskey, 1997; Thaler, 1990). The estimated

Table 9.8 Characteristics Determined after Enrollment and Net Deposits			
Characteristics	**Mean**	**Change in $**	**p-value**
Number of accounts			
One	0.99		
More than one	0.01	17.7	0.01
Use of direct deposit to IDA account			
No	0.94		
Yes	0.06	-1.9	0.39
Deposit frequency			
Share of months with a deposit	0.62	43	0.01
Planned or actual use of matched withdrawal			
Job training	0.02	-15.5	0.06
Microenterprise	0.07	-6.3	0.41
Home repair	0.20	-5.9	0.43
Post-secondary ed.	0.52	-4.5	0.54
Home purchase	0.16	-3.4	0.64
Retirement	0.05	-1.7	0.83
Number of types of uses of matched withdrawals			
One	0.99		
More than one	0.01	17	0.07
Actual use differs from intended use			
No	0.98		
Yes	0.02	9.1	0.01

association between direct deposit and AMND was negative and large ($1.90), but it is not statistically significant (Table 9.8). The small number of people with direct deposit (5 percent of participants) might explain the statistical insignificance, but not the negative association.

Deposit frequency. *Deposit frequency* is defined as the number of months with a deposit divided by the number of months of participation. We suspect that high saving causes frequent saving, in part because making a deposit has transaction costs and because high savers are more likely in more months to have deposits large enough to make these costs worthwhile. We also suspect that frequent saving causes high saving. In months when saving is more difficult, the person who wants to be a frequent depositor is more likely than otherwise to make a greater effort. In the long term, people who set a savings target and then consume the residual are likely—because they will make a greater effort to save in difficult months—to save more than people who set a consumption target and then save the residual. Furthermore, frequent deposits may be a pre-commitment device that puts cash out of reach.

A unit increase in deposit frequency was associated with a $43 increase in AMND (99-percent confidence, Table 9.8). The measure of deposit frequency, however, ranges between zero (no deposits) and unity (a deposit each month), so a unit change is not relevant. Compared to someone with deposit frequency in the 25th percentile (33 percent), predicted AMND for

someone in the 75th percentile (83 percent) would be about $21.50 higher. This is a large effect,[23] although we cannot untangle each side of the two-way causation.

Planned or actual use of matched withdrawals. People who plan to save to buy a house may save more, all else constant, than people who plan to save for home repair. Thus, planned use may affect saving. Also, some participants enroll without a clear goal for their matched use. If they find that they save a lot, then they may make a larger purchase; if they save less, then they may make a smaller purchase. Thus, saving affects actual use.

The only use with a statistically significant association with AMND was job training (94-percent confidence, Table 9.8). The 2 percent of participants with this use saved $15.50 less than others.[24]

Number of types of uses of matched withdrawals. About 1 percent of participants in ADD made matched withdrawals for more than one type of use. AMND was $17.00 higher for them than for others (93-percent confidence, Table 9.8). Probably, high savings led to multiple types of uses, not the reverse. Most cases involved uses for which small amounts can still be useful (home repair, post-secondary education, or microenterprise). Participants with multiple uses that included home purchase typically had home repair as their second use.

Actual use differs from intended use. AMND was $9.10 higher for people whose actual use differed from their intended use (99-percent confidence, Table 9.8). Probably these people set a low goal for themselves and then, when they found that they could save more, switched from a use that required less accumulation to one that required more accumulation.

Summary

The following are key links between AMND and characteristics of programs and participants:

- The match rate was not associated with AMND.
- Higher match caps were associated with higher AMND, but we cannot disentangle the forces of institutional factors, censored data, and two-way causation.
- Up to a point, more hours of financial education were linked to higher AMND.
- The program was correlated with unobserved factors that were also correlated with AMND.
- Race/ethnicity was correlated with unobserved factors that were also correlated with AMND.
- Income and current receipt of public assistance were not associated with AMND.
- Asset ownership was linked with higher AMND, and debt was linked with lower AMND.
- AMND increased in the first six months of participation, but decreased in the next 12.
- Deposit frequency was positively correlated with AMND.

[23] Even just a deposit in one more month per year would increase AMND by $3.60.
[24] Participants with more than one actual use were counted once for each use.

10. Financial Education

IDAs aimed at the poor differ in two main ways from subsidized savings accounts such as IRAs or 401(k) plans aimed at the non-poor. First, IDA subsidies come exclusively through matches rather than tax breaks. Second, IDAs come bundled with mandatory financial education. Indeed, all programs in ADD require participants to complete some financial education.

Does financial education increase savings and asset accumulation? Beverly and Sherraden (1999) say that "the extent to which an individual understands the process and benefits of asset accumulation is likely to affect her willingness to save (p. 464)." This chapter discusses background and evidence from studies outside of ADD, reports on the hours of financial education attended by ADD participants, and describes evidence of links between savings outcomes and hours of education in ADD. We find that financial education (up to a point) did improve savings outcomes.

Background

Financial education aims to increase awareness of saving as a wise choice and to strengthen future orientation. It conveys the rules of IDAs and practical techniques for how to save. Some classes discuss how to purchase or manage a large asset. All classes may provide, as a by-product, an opportunity for participants to give and to receive peer support.

Financial Education in General

Awareness. The goal of financial education is to make people more aware of choices that they might make and of the probabilities of possible consequences. For example, financial education might highlight that one can choose to make a budget and then choose to treat monthly deposits as if they were bills. It might then point out that frequent deposits are more likely to lead to high asset accumulation than infrequent deposits.

When it comes to saving, people in general—and the poor in particular—probably lack complete knowledge of choices, chances, and consequences (Bernheim, 1994). The benefits of saving are long-term, but the costs are short-term. Furthermore, the links between current sacrifice and future gain are abstract, subtle, and difficult to discern or imagine; even the non-poor, whose current wealth is ultimately due to saving by someone (perhaps in prior generations) or gifts from Nature, may not see these links. Of course, the poor have even fewer opportunities to see how saving might affect long-term well-being. Financial education might move subjective world views closer to objective reality with discussion, for example, of the long-term costs faced by home owners versus renters or of the long-term effects of post-secondary education on wages. An important part of financial education deals with the rules for means-tested public assistance. For decades, low asset limits sent a message that the poor should not or could not save. Recent changes in welfare law greatly relaxed asset limits on public assistance—and explicitly exempted IDA balances from means-tests in some states—but many poor people seem to be unaware of the changes (Hogarth and Lee, 2000).

All of this points to the importance of institutions as ways to highlight saving as a choice with positive outcomes and of ways to remove the constant need to choose to save. If institutions are in place, then financial education may have a role to help convince people to use them.[1] Thus, non-profit organizations, for-profit firms, and the government offer financial education in the belief that it helps people to acquire the knowledge of how saving is connected with future financial well-being.[2]

Experience from 401(k) plans. Evidence from research on 401(k) plans suggests that financial education increases saving. In 401(k) plans, financial education may consist of seminars, newsletters, and/or interactive materials covering topics such as attributes of the plan, investments and asset allocation, and planning for retirement. More frequent corporate-sponsored retirement seminars were associated with both higher participation rates and with higher levels of contributions to 401(k) plans (Bayer, Bernheim, and Scholz, 1996). The links were even stronger among non-highly compensated employees.

Bernheim and Garrett (1996) also report positive links between educational offerings and participation in retirement plans. Participation rates were 12 percentage points higher for companies that offered financial education. 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. This is a large effect. In all cases, effects were greatest for people who saved little before they received education. People who attended financial education on the job also tended to listen to friends and family less for financial advice; this may suggest that financial education expands narrow world views.

Finally, case studies of individual 401(k) plans indicate that increased financial education, including seminars and newsletters, can greatly increase both participation and the average percentage of salary deferred by employees (Richardson, 1995; Borleis and Wedell, 1994).

Future orientation. Weak imagination—for all people, poor or non-poor—dampens saving (Ramsey, 1929).[3] The poor may stay poor in part because short-sightedness blinds them to opportunities to exchange small current costs for large future benefits. Financial education with IDAs aims not only to make people aware that saving is often a wise choice but also to focus their attention on the future and to prod them to imagine what they might do and be if they save

[1] In this role, financial education resembles informational marketing.

[2] Financial education assumes that people save less than they should. If people can judge what is best for them, however, then it is wrong—or at least wasteful—to require financial education or to spend public funds on it. Still, evidence suggests that, after the fact, most people wish that they had saved more (Lusardi, 2000; Bernheim, 1995). Because increases in the capital stock due to increased saving have positive social spill-overs, higher saving may benefit society even if it does not benefit an individual. Although ads bombard Americans with constant appeals to consume more, some people may worry that public-service campaigns to consume less would somehow infringe on personal freedom, although few have qualms about government efforts to increase saving in crises (for example, the "buy bonds" campaign in World War II).

[3] At the extreme, people who cannot imagine a tomorrow have no reason to save today.

now. Classes "would be designed to structure people's thoughts of their own economic life in the long term" (Sherraden, 1991, p. 204). If people think more about the future, then they may place greater value on their future well-being. In turn, this decreases the cost of future consumption in terms of current consumption and thus increases saving.

Although asset ownership may spark greater future orientation because the resources in IDAs give people something to look forward to (Sherraden, 1991), some degree of future orientation—as well as beliefs that current choices can affect future outcomes—are required if people are to save and maintain assets in the first place (Clancy, 1995). One way financial education might encourage this is through exercises in strategic personal financial planning. To make a plan or to draw up a budget points thoughts toward the future. Such plans make explicit links between current choices and future opportunities. Classes might also spark participants to think about the future simply by asking them to list goals and to describe the requirements to reach them. In essence, programs that ask participants to think about the future may boost future orientation.

How to save. Even if people know that saving is a wise choice and even if they can imagine its future benefits, they may still not know how to save effectively. Much financial education in ADD highlights techniques—whether psychological or behavioral—for how to save.[4]

Psychological strategies change minds. They are grounded in a conceptual understanding of resource flows, savings goals, and self-imposed mental constraints. Financial-education classes may ask participants to set a savings goal, to propose a budget, or to earmark income from some source (for example, from a second job, or from tax refunds) for saving rather than as "spending money." Classes might suggest that participants treat monthly deposits as bills that must be paid rather than as something done only if money is left over. For example, some programs use slogans such as "Pay yourself first." Labels might also set IDA deposits apart from funds seen as available for consumption (for example, an account might be called a "home buyer's account" rather than simply a savings account).

Once minds are changed, *behavioral strategies* change actions. They aim to make the flesh as strong as the spirit so as to control consumption, make deposits, and refrain from withdrawals. Behavioral strategies might include limits on consumption quality ("buy only generic brands") or quantity ("buy one coffee a day"). They also include rules to spend more time and effort in household production ("eat out only once a week" or "clip coupons"). Behavioral strategies also include commitments that put resources out of reach, for example, to sign up for direct deposit or automatic transfer, to choose to receive EITC in a lump-sum or to withhold too much income tax, to cut up ATM cards or credit cards, to wait to cash checks, or to lock funds up in an account that offers a substantial penalty for early withdrawal.[5] Another behavioral strategy is to work more in the labor market.

[4] This paragraph and the next two are based on Beverly, Moore, and Schreiner (2001).
[5] Data from a cross-sectional survey and from case studies suggest that ADD participants believe that they do learn psychological and behavioral techniques from financial-education classes (Moore *et al*., 2000).

Financial Education in IDAs

General Financial Education. In IDAs, general financial education may include topics such as how to make a budget, how to manage money, and how to repair a tarnished credit record. The classes may also teach psychological and behavioral strategies meant to help participants to make deposits and to maintain balances. General financial education may also include individual sessions to encourage participants to set savings goals.

IDA rules. IDAs are more complex than standard passbook savings accounts. If participants are to take full advantage of IDA incentives, then they must learn the rules. Some classes explain, among other things, the wait period, the match cap, the match-cap structure, the time cap, what uses are matchable, the requirements for financial education, and how IDA balances relate to asset limits for those who receive public assistance.

Asset-specific education. The general financial education described so far deals with saving in general and with IDAs in particular. In contrast, asset-specific education deals with the purchase and management of large assets with the proceeds of IDAs. For example, programs believe that it would be unwise to help participants to save to buy a house but then cut them loose to house-hunt and to deal with real-estate agents and loan officers on their own. Likewise, participants who plan to use IDAs for microenterprise might benefit from advice meant to ensure that they do not start a business that is likely to fail quickly and make them worse off than if they had not saved in the first place. Participants who plan for post-secondary education or job training may want help to choose a school or course of study, and people who plan to make home repairs may want referrals to contractors. Finally, people who invest IDAs in retirement accounts may want advice about financial products or the best mix of stocks and bonds.

Asset-specific education may be useful because non-financial assets are more difficult to purchase, manage, and maintain than financial balances in a bank account. For example, the process of home ownership does not end but rather starts with the downpayment; buyers usually commit to monthly mortgage payments (and maintenance costs, and property taxes) for the next 30 years. Thus, education for home purchase often involves one-on-one counseling to ensure that the participants can demonstrate creditworthiness and potential future income sufficient to repay debt. Education for microenterprise also has a large preventative component.[6] Even education for post-secondary education aims in part to steer participants clear of diploma mills.

Peer support. Like any group of students, IDA participants can learn a lot from each other. Because financial education brings participants together, they may produce social capital as a by-product. Classmates also provide examples, both when they make matched withdrawals and reach their goals and when they make unmatched withdrawals or drop out. The class becomes a reference point for a world view in which saving is the norm and at least some people succeed.

[6] Schreiner (1999a) and Balkin (1989) argue that microenterprise classes should first ensure that participants understand the risks that they face and then provide on-call help rather than try to immunize entrepreneurs against all possible problems up-front.

Challenges. Financial education has costs both for participants and for programs.[7] For example, time after work is scarce for participants, who may also lack good, inexpensive child care. To adjust, programs hold classes at night or on weekends, and sometimes provide snacks and babysitters. Programs might also need to convince some participants that classes can help, especially if they did not find school useful in the past. Also, some IDA participants may lack strong skills in math, reading, and/or English. Programs may accommodate, for example with classes in Spanish or with exercises based on guided discussions of life experiences rather than on abstract ideas from books or lectures. Lessons must put the obscure, abstract, and complex language of finance in clear, concrete, and simple terms but yet convey the correct message. Programs must work to ensure that the message of classes does not get lost in cultural gaps.

Education also has financial costs for programs because it uses a lot of skilled labor. This matters because—with matches excluded—financial costs in ADD were in the range of $3 per $1 of net deposits (Chapter 6). This level of costs would drown a broad, large-scale IDA program. We do not know what portion of these costs are due to the supply of education; still, classes may be at the top of the list of things to cut to contain costs, and if for-profit financial-service firms house IDAs, then they are unlikely to offer comparable education. Financial education may have high costs; it may also have large effects on saving behavior. More research and better data are required to ensure that education is effective and efficient and to check whether the benefits outweigh the costs.

All ADD programs require some financial education. This presumes that IDA participants are not already well-informed on the subject matter. This is probably the case for some people, but one size does not fit all, and participants might gain more if classes were tailored to what they already know when they enroll (Moore *et al*., 2001). Unless IDA participants lack crucial knowledge, it is inconsistent to require them to go to class when savings subsidies for the non-poor have no such requirements.

Required attendance also short-circuits some forms of feedback that might otherwise signal the need to improve classes (Schreiner and Morduch, forthcoming). For example, if participants want matched withdrawals, then they must attend classes; they cannot vote with their feet. The lack of explicit non-time costs to participants also decreases feedback. This does not encourage the constant, small adjustments that lead to healthy improvement (Schreiner, 1995). Some evidence suggests that voluntary attendance and small, symbolic fees help to ensure that participants do not put up with classes that they find useless (Schor and Alberti, 1999).

Classes may also serve a latent targeting role. They increase the cost of participation in terms of time, and this may screen out less-poor people who, compared with the very poor, have less time relative to non-time resources (Besley and Kanbur, 1991). Classes may also have a latent political role; in exchange for subsidies for IDAs, some taxpayers may want to reform what they see as the poor habits of the poor.

[7] Clancy (1996) makes many of the points in this paragraph.

Financial Education in ADD

In ADD, financial education has many facets, and curricula vary by program. The framework includes IDA rules, basic financial education, and a place for peer support. The asset-specific component aims to help participants to purchase and to manage assets bought with IDAs.

Financial education at the program level. All 14 programs in ADD offer general financial education and asset-specific classes for home purchase and microenterprise. Ten programs offer classes for post-secondary education, and five programs offer other asset-specific classes.

All 14 programs require that participants take some general financial education. Some programs require these classes before an enrollee can open an account, and others require them before a matched withdrawal. Seven programs require asset-specific classes for home purchase or microenterprise, and three require asset-specific classes for other types of matched withdrawals.

At the program level, mean required hours of general financial education was 13, with a low of 6 (CAPTC Small-scale) and a high of 45 (HAFS, Table 10.1). Microenterprise (12) had the highest mean required hours in the asset-specific group with home purchase second (8).[8]

Table 10.1 Hours of Financial Education Required in ADD

Type	Mean	Median	Min.	Max.
General Financial Education	13	10	6	45
Asset-specific Education				
Homeownership	8	6	0	40
Microenterprise	12	12	0	33
Education	2	1	0	13
Other	0.2	0	0	1

ADD programs determined how many hours of financial education they would offer and require. At least in some cases, these requirements reflect what staff expected of the saving behavior of members of their particular target group. For example, if staff believed that participants would enroll with little financial knowledge and/or would save little, then they may have required more hours of financial education. If these beliefs were somewhat accurate, if these beliefs were based at least in part on participant characteristics that affect saving and that were observed by staff but are unobserved in the data set, and if programs enforced their requirements for financial education, then this could induce a spurious negative correlation between net deposits and hours of financial education attended by participants. That is, people whose unobserved characteristics predisposed them to low savings—with or without financial education—might also have been required to attend more hours. Analyses of the association between net deposits and hours of financial education could then confuse the effects of education with the effects of unobserved factors that dampen saving. In this case, the estimated effect of financial education would be

[8] The figures for CAAB are rough averages across members in the collaborative.

biased downward and could even be negative, especially for people who attend many hours of classes.[9]

The ADD programs selected or developed their own curricula and chose the form of sessions, for example, as seminars, workshops, peer-discussion groups, or one-on-one counseling. The ADD data, however, do not record the form of the class, the student/teacher ratio, the content of sessions, the types of materials used, or the quality of content or of teaching. Rather, the data cover only hours required and hours attended. All hours of financial education are not the same, but the analysis here must assume that they are.

Financial education at the participant level. Before we describe hours of financial education attended, some notes on the data are in order. Program staff enter the hours attended by participants on an *ad hoc* basis. Some programs enter data after each class session; other programs made one entry for all hours attended by a participant.[10] Furthermore, sometimes partner organizations provide financial education, and the ADD program may not always receive a complete attendance record.[11] Also, for some participants (especially those in microenterprise), programs counted large numbers of hours of asset-specific education attended elsewhere, sometimes before enrollment in ADD. In addition, the notes in MIS IDA do not always clearly mark classes as general-financial or asset-specific. In sum, despite persistent efforts to ensure complete, clean data, hours were under-reported for some participants and over-reported for others.

General financial education. All programs in ADD require some general financial education. Participants must complete the requirements before they make a matched withdrawal.[12] As of June 30, 2000, 81 percent of the participants had attended general financial-education classes (Table 10.2). Most participants (65 percent) had one to twelve hours recorded, 16 percent had 13 hours or more, and 14 percent were explicitly recorded as having no hours. About five percent had no records in MIS IDA and were counted as missing.[13] Mean attendance was 10.4 hours, with a low of zero and a high of 35.

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[9] Bernheim and Garrett (1996) discuss a similar two-way causation problem in the context the effects of financial education in the workplace. In a sample of ADD participants, Moore *et al*. (2001) find that those who said that they liked financial-education classes saved less than others. That paper speculates that those who liked classes may have started with the most to learn, and that the others found the classes remedial. Even if classes shrunk the gap in pre-enrollment financial knowledge, liking classes could seem to decrease saving.

[10] We asked the programs to provide complete data on hours and to distinguish explicitly between cases with zero hours and cases with unknown hours.

[11] This is particularly true for CAAB, one of the two collaborative programs. (EBALDC, the other collaborative, does all general financial education itself.)

[12] Participants at both programs at CAPTC and some participants at CAAB must complete some requirements before they open an account.

[13] Participants without recorded hours were counted as missing (rather than as zero) because some hours attended may not have been recorded.

Table 10.2 Hours of General Financial Education Attended	
Hours	**Percentage**
Zero	13
1 to 6	20
7 to 12	45
13 to 18	11
19 to 35	5
Missing	5

If all programs in ADD require general financial education, how can 14 percent of participants have zero hours? First, for most participants, participation is not over. The analysis here assumes that all participants took all hours of financial education at the moment of enrollment, but in fact attendance takes place over time, and some participants have not taken all the classes that they will take. Second, most participants with zero hours (52 percent) have exited without a matched withdrawal. For them, zero hours is valid. Third, 98 percent of the 48 percent of active participants with zero hours as of June 30, 2000, had not made a matched withdrawal. Thus, zero hours is possible for them. Four participants had a matched withdrawal and zero hours; for them, programs either did not record hours properly or did not enforce requirements.

About 39 percent of participants active as of June 30, 2000, had not yet completed their requirements for general financial education. On average, these participants were 9.4 hours short of the 11.4 hours required. The shortfall does not appear to be due to lack of opportunity to take classes; mean length of participation for this group was about 12 months.

Asset-specific education. Some ADD programs require asset-specific education before a matched withdrawal. As of June 30, 2000, 22 percent of participants had some asset-specific classes recorded (Table 10.3). Most of these had attended 1 to 6 hours. Asset-specific hours were low in part because participants usually take general financial education first and in part because they may not have participated long enough to take much asset-specific education. Mean hours (conditional on not being missing) was 10.7, with a low of zero and a high of 90.

Table 10.3 Hours of Asset-specific Financial Education	
Hours	**Percentage**
Zero	0
1 to 6	14
7 to 12	4
13 to 18	1
19 to 90	3
Missing	77

Most participants (77 percent) had no record of asset-specific hours and were counted as missing. Most of these participants probably had zero hours; they were counted as missing because some of these cases may have had positive hours that had not been recorded.
It seems that some asset-specific hours had not been recorded. For example, 92 percent of participants with matched withdrawals for home purchase at sites that require some asset-specific

hours had missing hours or too-few hours. For post-secondary education, the figure is 92 percent; for microenterprise, 95 percent; and for other uses, 53 percent. In addition, the requirements for asset-specific education reported in MIS IDA may be inaccurate, and/or programs may not have enforced requirements. The data on general financial education are better than the data on asset-specific education.

The Association of Financial Education with Saving

As stated at the beginning of the chapter, financial education might increase saving in several ways. Even if financial education does not help, it probably does no harm.[14] Financial education has costs, however, so the mere presence of positive effects is not enough to justify it. How much does an hour of financial education help? And how many hours are optimal?

Effects in bivariate comparisons. Tables 10.4 through 10.7 describe the relationship between hours of general financial education and average monthly net deposits (AMND), deposit frequency, net deposits as a percentage of the pro-rated match cap, and the savings rate. The analyses focus only on general financial education because asset-specific data are probably incomplete and because asset-specific education deals with the use of savings rather than with saving itself. We do not present statistical tests because these bivariate comparisons do not control for other factors that might be correlated both with hours of financial education and with savings outcomes; we present statistical tests later when we control for other factors.

Table 10.4 shows that average monthly net deposits were lower for people with zero hours ($8.01) than for people with 1 to 6 hours ($20.38). People with 7 to 12 hours had even higher AMND ($32.55). More hours after that were associated with small decreases in AMND—people with 13 to 18 hours had $26.88, and people with 19 to 35 hours had $30.48. That is, AMND increased sharply as hours of general financial attendance increased from zero to 12, after which it leveled off.[15]

[14] The effect might be negative if knowledge transferred were incorrect or useless. The effect might be zero if participants "are uninterested, unmotivated, unable to understand, or already well-informed" (Bernheim and Garrett, 1996, p. 17). Furthermore, financial education might *seem* to decrease saving if people inclined to save less also take more financial education. This might happen if programs boost requirements to compensate for factors that they observe but that are not recorded in the data.

[15] People with missing hours saved $19.13; perhaps some of their hours were not recorded, or perhaps they skipped or were excused from classes precisely because they did not need them.

Table 10.4 Average Monthly Net Deposit by Hours of General Financial Education					
Hours	**N**	**Mean ($)**	**Median ($)**	**Min. ($)**	**Max. ($)**
Missing	129	19.13	7.62	0.00	250.00
Zero	314	8.01	0.00	0.00	85.71
1 to 6	479	20.38	12.04	-0.22	150.00
7 to 12	1,080	32.55	26.09	0.00	250.00
13 to 18	253	26.88	24.44	0.00	115.38
19 to 35	123	30.48	20.12	0.00	172.69
All ADD	2,378	25.42	17.96	-0.22	250.00

According to Table 10.5, the percentage of months in which participants make a deposit increased with the number of general-education hours until it peaks at 64 percent in the range of 7 to 12 hours. From this point onward, more hours were associated with a slight decline in deposit frequency. This is the same pattern observed for financial education and AMND in Table 10.4.

Table 10.5 Deposit Frequency by Hours of General Financial Education (Months with a Deposit/Months of Participation)					
Hours	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
Missing	129	45	38	6	100
Zero	314	39	33	0	100
1 to 6	479	57	58	4	100
7 to 12	1,080	64	67	4	100
13 to 18	253	60	59	0	100
19 to 35	123	58	53	6	100
All ADD	2,378	58	57	0	100

Table 10.6 shows that net deposits as a percentage of the pro-rated match cap increases as general education increases. Participants in the group for whom the effect is largest—those with 19 to 35 hours—are on track to use 95 percent of their total lifetime match eligibility.

Table 10.6 Net Deposits as a Percentage of the Pro-rated Match Cap by Hours of General Financial Education					
Hours	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
Missing	129	59	25	0	600
Zero	314	27	0	0	343
1 to 6	479	41	22	0	300
7 to 12	1,080	85	72	0	600
13 to 18	253	84	80	0	378
19 to 35	123	95	100	0	509
All ADD	2,378	67	49	0	600

The savings rate (net deposits as a percentage of income) increases rapidly as participants go from zero to 12 hours, peaks at 2.9 percent, and then decreases (Table 10.7).

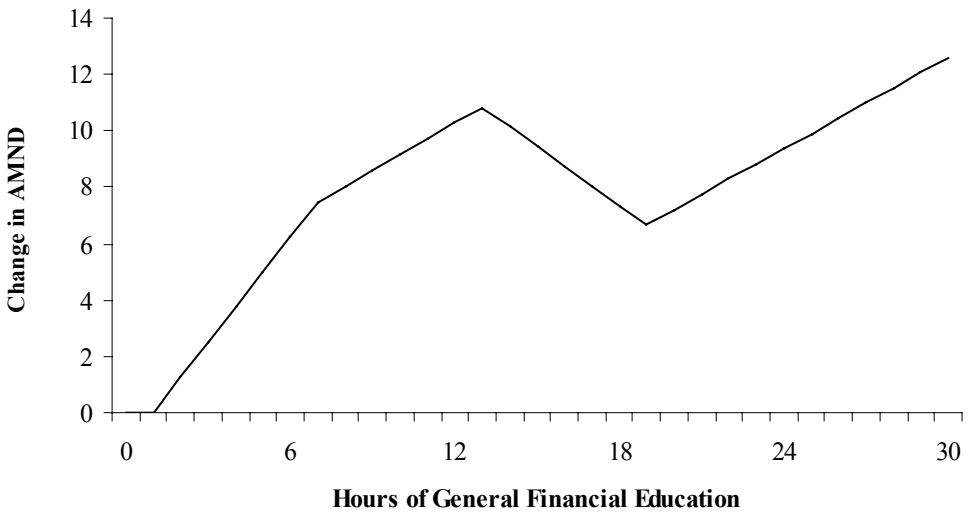
Table 10.7 Savings Rate by Hours of General Financial Education					
Hours	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
Missing	125	1.7	0.7	0.0	36
Zero	312	0.7	0.0	0.0	11
1 to 6	463	1.8	0.9	0.0	71
7 to 12	1,055	2.9	1.9	0.0	107
13 to 18	246	2.3	1.7	0.0	13
19 to 35	120	2.5	1.6	0.0	15
All ADD	2,321	2.2	1.3	0.0	107

In summary, savings outcomes appeared to improve as the number of hours recorded for general financial education increased from zero to 12. Except for net deposits as a percentage of the pro-rated match cap, outcomes leveled off or diminished once the number of hours exceeded 12.

Effects in multivariate comparisons. Bivariate results are not conclusive because they do not control for factors that might be correlated both with hours of general financial education and with savings outcomes. This section describes results that control for other observed factors, in particular, for exit status and for length of participation. This matters because new participants or people who exit will have fewer hours. If these people also save differently for reasons unrelated to financial education,[16] then bivariate analyses confuse the effects of financial education with the effects of the length of participation and/or with whatever causes exit without a matched withdrawal. The results below are derived from the second step of the Heckman two-

[16] Chapter 9 suggests that new participants have higher AMND. Of course, people who exit without a matched withdrawal have AMND of zero.

Figure 10.1 Effect of Hours of General Financial Education on AMND



step regression on AMND that controls for exit, length of participation, and many other observed factors (Chapter 9).[17]

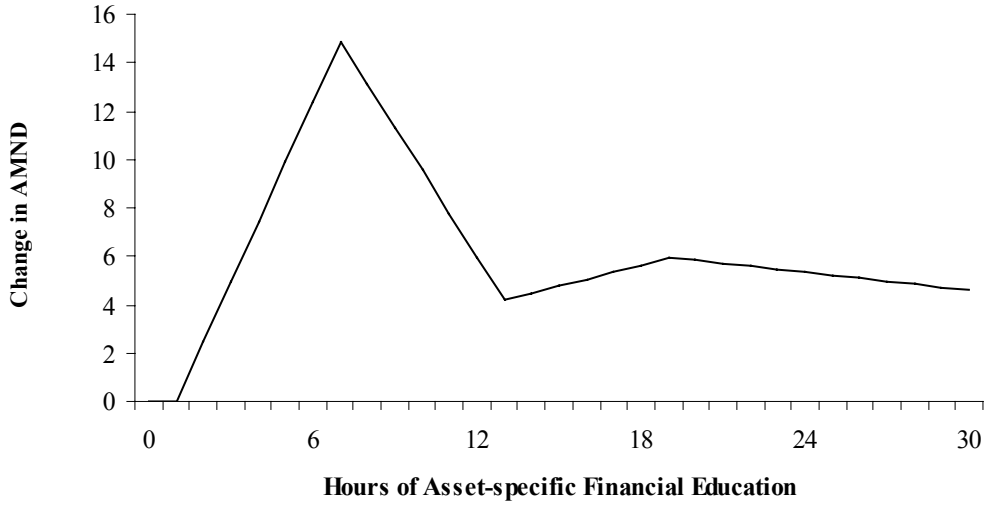
Figure 10.1 shows the link between AMND and hours of general financial education.[18] In the range of 1 to 6 hours, each additional hour was associated with a $1.20 increase in AMND. This implies that, all else constant, a participant with six hours of general financial education would have $6 more AMND than a participant with one hour. From 7 to 12 hours, the increase for each hour is $0.56, also a large effect. All else constant, a participant with 12 hours has $9.40 more AMND than a participant with one hour. From 13 hours to 18 hours, each hour was associated with a $0.70 decrease in AMND. Additional hours beyond 18 were linked with an increase in AMND of $0.54.

Why would the effects peak at 12 hours? If education has diminishing returns, then its effects might reach a plateau, but they need not turn negative. As discussed above, perhaps programs require more hours from participants who would tend to save less anyway. If the additional

[17] Although this regression is the best way to control for observed factors with the data at hand that we know of, it is not perfect. In particular, it might be that education causes saving, but also that saving causes education. The model here, however assumes one-way causation. If the relationship is two-way, then the estimated effects of financial education on AMND here are probably overstated.

[18] Figure 10.1 is derived from regression coefficients in Table 9.1 in Chapter 9. The coefficients have p-values between 0.08 and 0.14.

Figure 10.2 Effect of Hours of Asset-specific Financial Education on AMND



education does not completely compensate, then the peaked pattern of Figure 10.1 could appear. The more prosaic data issues discussed in this chapter may also cause the peaked pattern.

Figure 10.2 shows the estimated association between hours of asset-specific education and AMND. Given the possibility that these hours were underreported, we do not want to put too much emphasis on these results. Each asset-specific hour in the range from 1 to 6 was associated with an increase in AMND of $2.50. This is a large effect, and statistically significant with 99-percent confidence. From 7 to 12 hours, each hour was associated with a decrease in AMND of $1.80. This effect is also large and statistically significant. After a participant had 12 asset-specific hours, additional hours did not seem to have much effect.[19] This plateau could be due to diminishing returns, data issues, or mutual causation between hours required and unobserved characteristics than affect saving. As with general financial education, some hours of asset-specific education increased AMND by large amounts but, after a point, the association became negative. The asset-specific results, however, merit less trust than the general-financial results.

In summary, these results broadly suggest that, at least to some point between 7 and 12 hours, financial education had large, positive effects on savings. After a point, the effects either leveled off or became negative, although many factors besides additional financial education may explain the apparent downturn.

Data issues. The analysis here is based on recorded hours of financial education as of June 30, 2000. Hours may be over-reported, under-reported, and/or misclassified between general-

[19] Most people with more than 12 asset-specific hours plan to use their IDAs for microenterprise. Given that some hours for some participants were completed outside of the IDA program and perhaps even before enrollment, we do not place too much faith in these estimates.

financial and asset-specific. Participants had not taken all hours that they will take, and the analysis may not completely control for links between exit, financial education, and net deposits. Just as importantly, the data include only hours of attendance, not quality of hours. The analysis omits the type of educational materials, the form of instruction, the quality of content, the cultural appropriateness of presentations, and the skill of instructors. It cannot control for the financial knowledge of participants before they take classes, nor for possible links between hours required and unobserved characteristics that influence saving. These weaknesses are unusual only in their acknowledgement, but they do limit the strength of the results. If financial education is to remain a central part of IDAs, more research and better data are needed.

Financial Education and Policy

A key difference between IDAs and other subsidized-savings programs is that IDAs require financial education. Theory suggests that financial education should increase saving, and program staff and participants say that they believe that financial education is crucial.

This chapter is the first quantitative look at the effects of financial education with IDAs. The results seem to suggest that a few hours of general financial education increased saving a lot (in the range of one dollar of AMND for each hour of financial education up to 12 hours), although the effects may diminish or reverse as hours increase. Results for asset-specific education were similar but subject to stronger caveats on the data.

Even if these results are affirmed in future research, we do not know whether the benefits of financial education exceed the costs. The results merely suggest that there are benefits. Results suggest that short courses—which cost less than long courses—may still have large effects.

11. Income and Saving

This chapter looks at the relationships between income and savings and between income and the savings rate. The *savings rate*—defined as average monthly net deposits divided by monthly household income—shows how much participants save relative to current income.

For IDA participants in ADD, we find that savings 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 overwhelmed economic factors, and that institutional factors mattered even more for the very poor than for the less-poor.

We first discuss some key questions and theory. We then look at the income of participants in ADD and its distribution by source. Following this, we present tabulations of different savings outcomes by income. Finally, we present and discuss results of regression analyses.

Issues and Theory

Discussions of IDAs in policy and practice often assume that very poor people cannot save because their income is too low. Do theory and evidence support this assumption?

Economic theory. 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. Evidence suggests that income and savings are indeed positively correlated (Wolff, 1998).

Economic 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 additional 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.

Like all theory, however, this one 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.

Institutional theory. Institutional theory suggests that factors other than income and preferences may influence saving behavior and that low savings by poor people might be partly explained by limited access to institutional saving opportunities (Sherraden, 1991). Relevant institutional features may include incentives, information, access, and facilitation (Beverly and Sherraden, 1999). For example, automatic deposit facilitates saving. In IDAs, the match cap and program expectations may also play a role. All else constant, the institutional aspects of IDAs

are expected to serve to increase savings (Chapter 1). Although much work looks at the effectiveness of savings incentives (subsidies), few studies test the effects of other institutional features. A central question of research is the relative importance of income and institutions for savings in IDAs and for total savings in all forms. Unfortunately, the current data do not yield answers, but we can shed some light on the questions.

Will the poor save too much in IDAs? By definition, saving postpones consumption. In the short term, people who save consume less (and are worse off, all else constant) than non-savers. Savers make the short-term sacrifice because they expect it to improve long-term well-being.

Of course, saving can be overdone. For very poor people close to subsistence, increased saving might reduce consumption to the point of death. For poor people whose resources exceed subsistence requirements by a wider margin, increased saving may be harmful even if not fatal. 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 addressed in this report) is whether saving in IDAs might reduce short-term consumption so much that the poor suffer hardship. We have listened for this possibility in talks with program staff and in surveys and in-depth interviews with participants. We have heard at least one anecdotal account from program staff where someone might have saved too much. For the most part, however, participants in IDAs do not report that their saving causes hardship (Moore *et al*., 2001). Participation in IDAs and the level of savings are voluntary; participants decide whether they want to save and how much to save. There is almost no evidence that matches in IDAs entice participants to save to the point of harm.[1]

Measurement of Income and Savings

Savings data. Data on savings in ADD are accurate because they come from account statements from financial institutions (Appendix B). They are likely the best data yet (and perhaps the only data) on deposits and withdrawals by the poor in a matched-savings program.

Income data. Our empirical work is subject to several sources of possible bias, all of which would tend to mask possible positive correlations between income and savings and between income and the savings rate. Some of the issues deal with the income data. Income data in most surveys are measured with error and are underreported, and data on income for ADD may have more measurement error and be more underreported than usual. Even if income data were perfect, however, several other sources of bias would remain, and are listed below.

[1] As a policy principle, if the rich have subsidies to save, then it is a matter of fairness that the poor also have them, and then all people can make their own choices.

The question about income in MIS IDA asked for "monthly gross income of household by source."[2] 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.

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. Furthermore, IDAs are means-tested on income, and participants at enrollment may have believed that they had incentives to understate their income.

At the largest program in ADD (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.

Social research often finds 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. This tends to overstate savings rates for the poorest.

Income varies from month to month, but we measure monthly income only once. Thus, such monthly data probably has more variation than would annual data.[3] 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.

People may also 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.[4]

The match cap may hide links between income and savings (or savings rates) because it constrains observed savings for high savers. For example, someone who wants to save 5 percent ($1,000) of an annual income of $20,000 will be constrained by a $300 annual match cap to save 1.5 percent of income. Someone with annual income of $10,000 who wants to save 3 percent of income will save $300, exactly the desired amount. In this example, the observed correlation

[2] An ideal measure of income would be net of subsistence requirements and net of taxes (for IDA participants in particular, it would record EITC payments). This ideal data does not exist.

[3] This measurement error would tend to drive statistical relationships toward zero. In this sense, measurement error makes statistically significant findings all the more strong.

[4] The regression analyses use income data as of enrollment to avoid issues of two-way causation. Some programs later updated income data, and the descriptive statistics use this data if it exists.

between income and savings rate is negative (and the observed correlation between income and savings is zero), even though the true correlation in both cases is positive.

These biases will 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 of Participants in ADD

As of June 30, 2000, mean monthly household income of participants in ADD was $1,474 (median $1,340, Table 11.1).[5] About 8 percent of participants had monthly income of $499 or less (Figure 11.1). Most participants (68 percent) had monthly income between $500 and $1,999, and 22 percent had income of $2,000 or more.

Recurrent Income

Recurrent income (wages, government benefits, pensions, and investments) was 83 percent of total income and had a mean value of $1,229 (median $1,199, Table 11.1). About 78 percent of participants received wages, and 26 percent received government benefits. In terms of value, 67 percent of income came from wages and 14 percent from government benefits.

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. For policy, it would be useful to know who would enroll in IDAs if all poor people had access, but the data from ADD cannot shed light on this question.

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 fit with the ideas that most of the elderly poor did not have jobs with pension benefits[6] 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.

[5] This data comes from the most recent record in MIS IDA, not the at-enrollment record.
[6] Of 16 people aged 65 or more in ADD, 5 reported income from pensions.

Figure 11.1 Distribution of Income for Participants in ADD

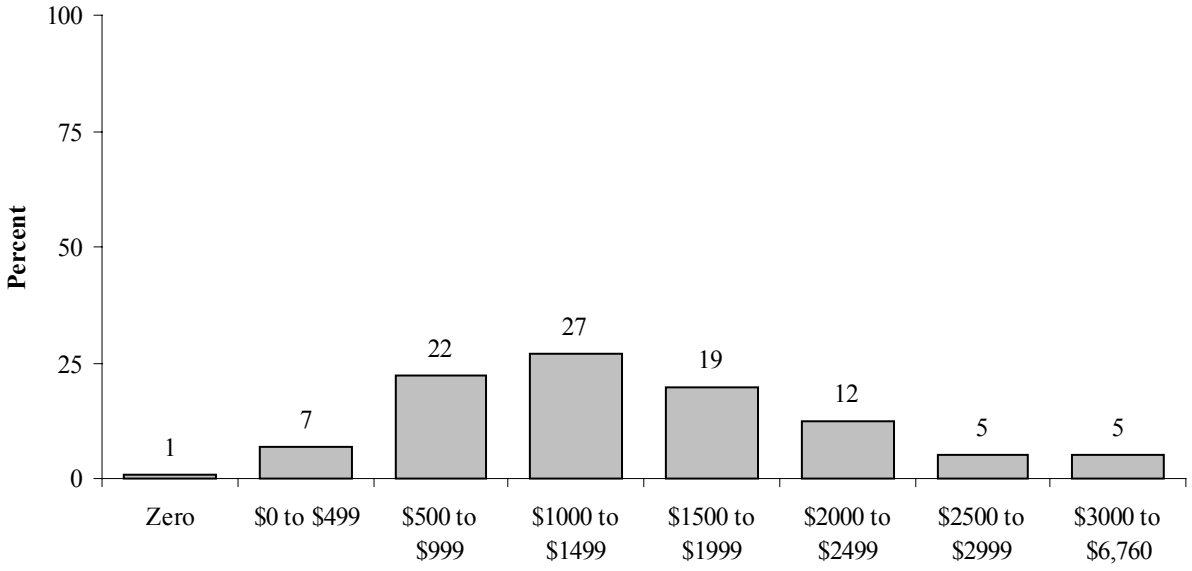


Table 11.1 Monthly Household Income of Participants by Source

Income Source	N	Mean ($)	Median ($)	Min. ($)	Max. ($)	Missing	Participants with an Income Source (%)	Distribution of Total Income by Source (%)
Wages	2,378	1,078	1,034	0	6,260	0	78	67
Government Benefits	2,378	133	0	0	3,400	0	26	14
Pensions	2,378	11	0	0	2,000	0	2	1
Investments	2,337	4	0	0	5,000	41	1	0
Recurrent Sources	2,337	1,229	1,199	0	6,760	41	90	82
Self-employment	2,378	132	0	0	4,965	0	16	9
Child Support	2,378	50	0	0	1,833	0	15	4
Gifts	2,378	17	0	0	2,400	0	5	1
Other Sources	2,378	55	0	0	3,514	0	10	4
Intermittent Sources	2,378	253	0	0	4,965	0	38	18
Total Income	2,337	1,474	1,340	0	6,760	41	99	100
Income/Poverty	2,337	1.13	1.04	0.00	7.09	41		

About 16 percent of participants reported self-employment income. This figure—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.[7] 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). [8]

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 three sources were 9 percent of total income.

Distribution of Income

On average, income was 111 percent of the household-size-adjusted poverty line (Table 11.1). Median income/poverty was 100 percent; the typical ADD participant was just above the poverty line. About 21 percent of participants were below 50 percent of the poverty line (Figure 11.2).

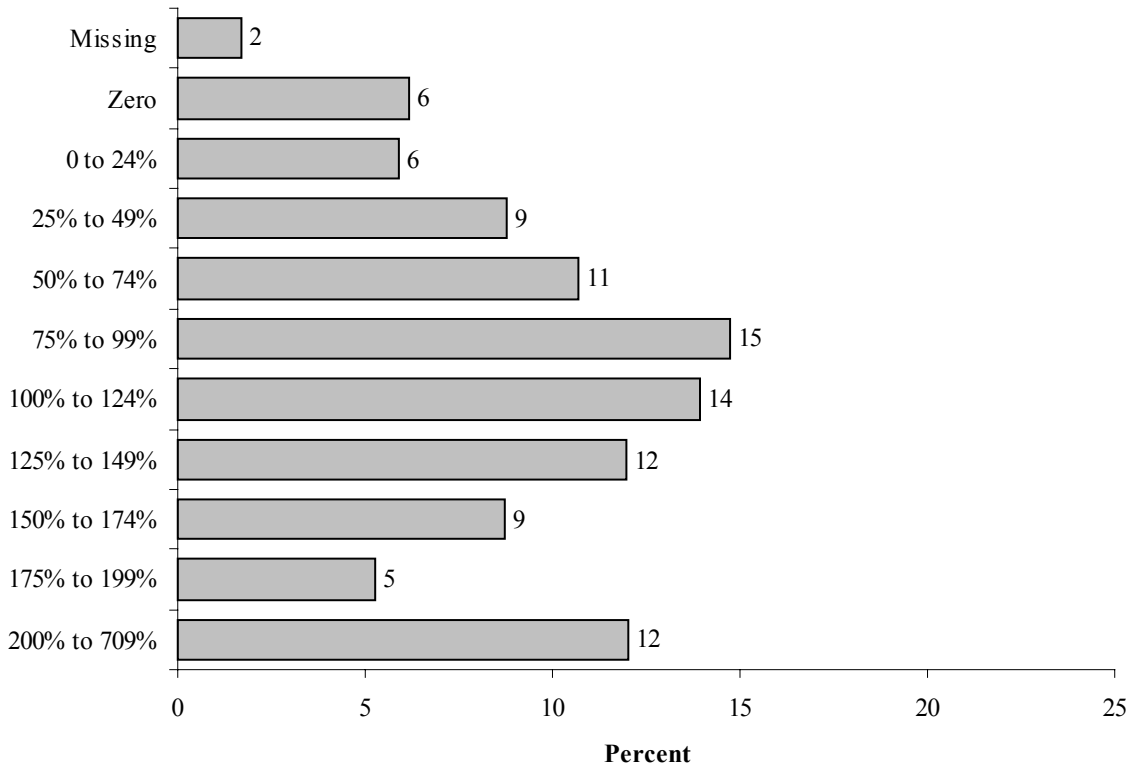
Tabulations of Savings Outcomes by Income

This section looks at the relationship between income (for ten groups) and four savings outcomes: average monthly net deposits (AMND), deposit frequency, net deposits as a percentage of the pro-rated match cap, and the savings rate.

Average monthly net deposits (AMND). Average net deposits per month of participation in ADD was $25.42, with a range from $16.37 for the lowest income group to $36.89 for the highest (Table 11.2). 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). More income seems to increase savings but to decrease the savings rate. This simple tabulation does not control, however, for factors that may be correlated with both AMND and income. We discuss below the results of a test that includes many controls.

[7] We cannot test this because referrals to IDA programs are disproportionately self-employed.
[8] This income is "intermittent" because it is highly variable, even for the full-time self-employed.

Figure 11.2 Distribution of Income/poverty for Participants in ADD



Note: Income/poverty is measured with the most-recent data in MIS IDA. With the at-enrollment data, 8.5 percent of participants had income at of above 200 percent of the poverty line.

Table 11.2 Average Monthly Net Deposit and Savings Rate by Decile of Income

Income	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 11.3 Deposit Frequency by Monthly Income (Months with a Deposit/Months of Participation)					
Income	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
Missing	41	76	83	29	100
$0 to $559	233	50	48	4	100
$560 to $799	234	56	54	0	100
$800 to $995	234	56	54	0	100
$996 to $1,199	230	57	58	0	100
$1,200 to $1,326	235	55	50	0	100
$1,327 to $1,515	236	60	60	6	100
$1,516 to $1,759	233	60	63	6	100
$1,760 to $1,999	231	57	57	0	100
$2,000 to $2,459	230	58	60	5	100
$2,460 to $6,628	241	65	67	7	100
All ADD	2,378	58	57	0	100

Deposit frequency. *Deposit frequency* is the share of months with a deposit. On average, participants made deposits in 58 percent of months (7 months per year, Table 11.3). 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 table, 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, mean net deposits as a percentage of the pro-rated match cap were 67 percent (median 49 percent, Table 11.4). At this pace, the average participant will have net deposits of 2 dollars for every 3 dollars that could have be matched by the end of ADD; the typical participant will have net deposits of 1 dollar for every 2 dollars that could be matched.

Across income groups (Table 11.4), 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.

Table 11.4 Net Deposits as a Percentage of Pro-Rated Match Cap by Decile of Income					
Income	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
Missing	41	76	81	0	240
$0 to $559	233	53	20	0	511
$560 to $799	234	65	47	0	600
$800 to $995	234	63	43	0	325
$996 to $1,199	230	62	46	0	502
$1,200 to $1,326	235	64	42	0	600
$1,327 to $1,515	236	61	43	0	343
$1,516 to $1,759	233	70	50	0	378
$1,760 to $1,999	231	69	55	0	382
$2,000 to $2,459	230	78	68	0	509
$2,460 to $6,628	241	85	79	0	600
All ADD	2,378	67	49	0	600

Savings rate. As income increases, the savings rate decreases (Table 11.5). 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 holds 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 (Table 11.2).

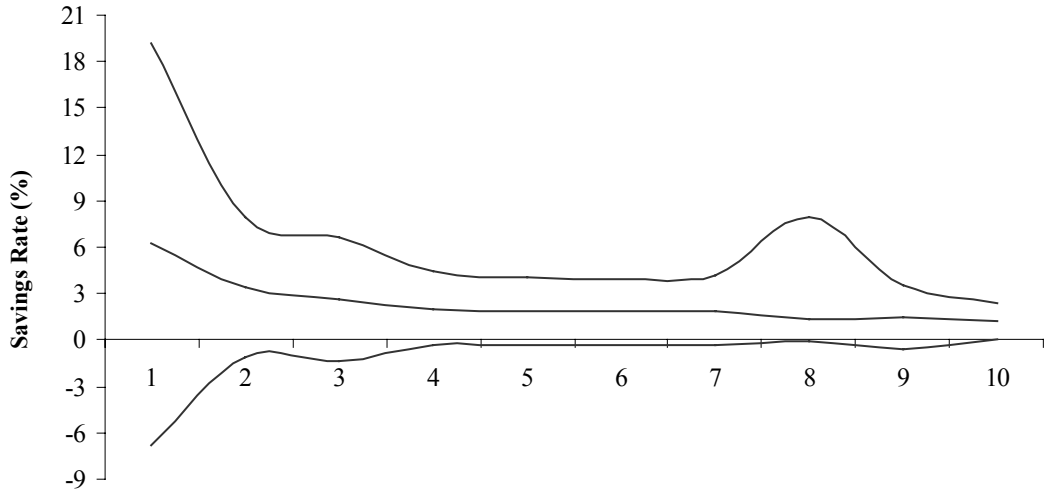
Table 11.5 Savings Rate (Average Monthly Net Deposits as a Percentage of Monthly Income)					
Income	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
Missing	118	N/A	N/A	N/A	N/A
$0 to $559	217	5.6	2.3	0.0	107
$560 to $799	234	3.4	2.4	0.0	36
$800 to $995	234	2.4	2.0	0.0	15
$996 to $1,199	230	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

This simple tabulation ignores the possibility that the apparent patterns may be due to luck, through sampling variation. To check this, Figure 11.3 shows the mean savings rate for the ten income groups, with lines above and below to mark plus and minus one standard error. The standard errors are large (because the savings rate varies a lot within each income group), so we

cannot say with a high degree of confidence that mean rates differ across groups. That is, the apparent downward trend is not statistically significant.[9]

These simple tabulations and graphs may mislead because they do not control for any factors correlated both with income and savings outcomes. The regression analysis below offers better tests because it does control for some other factors.

Figure 11.3 Mean Savings Rate by Group (Plus and Minus One Standard Error)



Regression Analysis

Regression controls for many factors at once. Here, we estimate the association between income and the savings rate, holding constant a wide range of program and participant characteristics.[10]

Factors in the model constant, income was not associated with the probability of exit.[11] Whatever factors explain exit—whether hardship, loss of interest, lack of discipline, and being kicked out for poor performance—they were not correlated with income. Less-poor participants in ADD were just as likely to exit as very poor participants.

[9] Appendix B discusses statistical significance.
[10] To save space, the full results are not presented here. They are available on request. Like the regression in Chapters 8 and 9, the one here uses the Heckman two-step, but the dependent variable in the second step is the savings rate instead of AMND. The first step estimates the likelihood of non-exit, and the second step estimates the predicted savings rate for non-exits.
[11] The results are the same as those in Table 8.5.

Among non-exits (84 percent of participants as of June 30, 2000), higher income was associated with a lower savings rate. 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. This is a large effect, (32 percent of the mean savings rate in ADD of 2.2 percent, Table 11.5).

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. This is large (10 percent of the mean savings rate in ADD).

We also looked (Chapter 9) at the association between income and AMND (in contrast to the savings rate). Recurrent income had no statistically significant association with AMND. Each $100 of intermittent income is associated with an increase in AMND of $0.32 (96-percent confidence). This is a small effect; it implies a savings rate from increases in intermittent income of 0.32 percent. This fits the pattern above where the savings rate decreases with income.

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? Economic theory cannot; it predicts that savings increase with income. Two possible explanations remain.

As discussed above, issues with data and methods 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. We can partly address the censorship of desired savings by the match cap. 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. Even without censored cases, the negative association between income and savings rate is large and strong.[12]

[12] This truncated regression is not a good way to control for censoring (Greene, 1993). Better techniques would be overkill at this point, however, because censoring depends on the date of measurement. As of June 30, 2000, only a handful of participants with lifetime match-cap structures had reached their time caps and thus had had a full chance to save up to the match cap. Likewise, most people with annual match-cap structures were not in the twelfth month of their current participation year. They were unlikely to be at the match cap on June 30, 2000, even if they will probably be at the match cap at the end of their participation year. We will control properly for censoring after ADD ends and all participants have had a full chance to save.

Institutional effects may drive the observed patterns. For example, the monthly savings target may matter more for people with less income. All else constant, these people have fewer resources to save, so they must make a greater effort if they want to save up to the match cap. If participants make an effort to save the amount "expected" by the program—and many participants say that they try to do this—then the "pull" of the match cap will be stronger for people with less income. This would tend to make the savings rate decrease with income.

Matches in IDAs may also matter more as income decreases. Asset accumulation from a match is a higher proportion of total resources for the very poor than for the less-poor. Because of diminishing returns, participants with low income receive greater benefits from a given match. This would tend to make the savings rate decrease with income.

Compared to the less-poor, the very poor may change their behavior more in response to financial education or to social pressure from staff or peers. If the very poor have more to learn about how and why to save, then a given level of education or attention will have a greater effect.

These institutional effects are partly economic (matches), partly psychological (program expectations and monthly savings targets internalized by participants, and financial education), and partly social (pressure from staff and peers). 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, but for now it is only a conjecture.

The institutional structure of IDAs may cause people with less income to save a larger share of their income. Even so, the institutional structure of IDAs is less complete than that of other savings programs such as 401(k) plans. For example, IDA participants must repeatedly choose to make deposits. In 401(k) plans, the deposit amount—once chosen—is made like clockwork each month unless the participant actively does something to change it. In contrast, saving in IDAs is rarely passive. Each deposit requires conscious choices and acts (such as not to spend cash on-hand but rather to walk or drive to the bank).[13]

Discussion

The results here pertain to a particular population in an unusual context (a matched-savings program). Participants are in the lower end of the income distribution; the typical participant is just above 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. Our data on cash flows in IDAs are very accurate, but the income data are self-reported and—although they have been cleaned as well as possible—some measurement error and other issues surely remain. Overall, conclusions must be tentative, but we can offer a few observations on income and saving in ADD and on how the results here relate to larger issues in saving theory and policy.

[13] About 5 percent of participants in ADD used direct deposit with their IDA (although we do not know how many could have used direct deposit but chose not to).

What kind of income leads to saving? The permanent-income hypothesis suggests that regular income drives consumption and that transitory income drives saving. In ADD, recurrent income had no link with the level of savings, and intermittent income had a very small link. Furthermore, as income increases, the savings rate decreases, and this negative association is large and strong. We cannot say much else about this. It seems likely that institutional influences overshadow source-of-income influences, but the data from ADD cannot sort this out. In particular, we have income data at only one point in time, and we have only a coarse proxy for transitory income.

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.

What explains this? Economic models predict that more income increases savings (and savings rates); institutional theory (and biases in data and methods) predict that it might not. It may very well be that institutional features overpowered economic factors in ADD, but we do not have much direct evidence. If institutions do explain at least part of the results, then the strongest influences were likely the expectation embedded in a monthly savings target, the transformation of the match cap into a goal, financial education, 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 three factors probably are at work, but the data cannot disentangle them.

The broad message is that less income need not imply less savings—all else constant—and that more income may imply a lower savings rate. Existing evidence on non-IDA savings indicates that very poor people save less (and save a smaller share of their income) than less-poor people. This is not happening in IDAs in ADD.

12. Race/Ethnicity and Saving

IDAs aim to narrow the gap between the non-poor and poor in access to institutions for saving. If they succeed, then they may also narrow the gap in asset accumulation among racial/ethnic groups and promote equality of both opportunity and outcomes.

On average, African Americans have less financial (and other) assets than Caucasians.[1] Carney and Gale (1999) find that 45 percent of African-American households (versus 14 percent for Caucasians) did not have a passbook savings account or a checking account in 1993. The ratio of median income for African Americans to median income for Caucasians was 0.64 in 1997, but the ratio for net worth was 0.12 in 1995 (Gittleman and Wolff, 2000). The gap widened in the 1980s and 1990s (Wolff, 1998), and in 1995 about half of African-American households had zero (or negative) net worth.[2]

Oliver and Shapiro (1995) and Sherraden (1991) argue that some of the advantages and disadvantages linked with race/ethnicity are due to differential access to institutions for saving and asset accumulation. For example, discrimination in markets for loans and homes (Ladd, 1998; Munnell *et al*., 1996) decreases access to the home-mortgage interest subsidy, to mortgages as a device to commit to save, and to homeownership as a source of capital gains. Labor-market discrimination—both in wage jobs (Darity and Mason, 1998) and in self-employment (Branchflower, Levine, and Zimmerman, 1998; Cavalluzzo and Cavalluzzo, 1998; Bates, 1997)—decreases access not only to higher income but also to 401(k) plans. Of course, local-school finance distributes access to public schools—institutions that build human capital—unequally. Finally, theft and murder by governments, firms, mobs, and individuals punctuate the history of African Americans and disrupt mechanisms that would otherwise facilitate asset accumulation (Feagan, 2000). Even if these shames were past, part of the "sedimentation of racial inequality" (Oliver and Shapiro, 1995) is that low assets beget low assets, so past inequality leads to current inequality.[3] If class has come to matter more than race (Wilson, 1980) and if assets are one way to reproduce class, then greater inclusion in institutions that facilitate saving may promote racial/ethnic equality in many ways.

Although IDAs alone cannot reverse centuries of injustice or pervasive current social patterns, they may be one way to help to level the field (Sherraden, 1999b and 1991). This chapter looks at race/ethnicity and savings in IDAs in ADD.

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[1] Most research looks at only African Americans and Caucasians because sample sizes for other groups are small. We also look at Asian Americans, Hispanics, Native Americans, and "Others."

[2] Work on savings (*e.g.*, Deaton, 1992b; Blau and Graham, 1990; Friedman, 1957) often finds that African Americans save a greater share of their income than Caucasians, perhaps to insure against a greater risk of shocks (for example, from unemployment).

[3] Blau and Graham (1990) and Gittleman and Wolff (2000) find that the persistent wealth gap between African Americans and Caucasians is due not so much to differences in saving rates or to differences in returns on savings as to differences in inheritances.

Savings Outcomes by Race/Ethnicity

About 47 percent of participants in ADD were African-American, 37 percent were Caucasian, 9 percent Hispanic, 3 percent Native American, 3 percent "Other" and 2 percent Asian-American. Compared to the general low-income population, ADD has a smaller share of Caucasians and a greater share of African Americans, Hispanics, Asian Americans, Native Americans, and "Others" (Chapter 4). This reflects the target groups of some programs in ADD, and it suggests that some members of disadvantaged groups are both able and willing to participate in IDAs.

Bivariate Tabulations

For each group, Tables 12.1 through 12.4 report average monthly net deposits (AMND), deposit frequency, net deposits as a percentage of the pro-rated match cap, and the savings rate. These simple tables do not control for other characteristics—observed or unobserved—correlated both with race/ethnicity and with savings outcomes.

Average Monthly Net Deposits. AMND was highest ($41.81) for Asian Americans (Table 12.1). Next were "Other" ($31.24), Hispanics ($30.19) and Caucasians ($29.04). AMND was lowest for African Americans ($20.99) and for Native Americans ($19.51).

Table 12.1 Average Monthly Net Deposit by Race/Ethnicity

Race	N	Mean ($)	Median ($)	Min. ($)	Max. ($)
African-American	1,115	20.99	13.50	-0.22	250.00
Asian-American or Pacific-Islander	45	41.81	45.45	0.00	93.02
Caucasian	877	29.04	23.57	0.00	200.00
Hispanic	211	30.19	26.09	0.00	250.00
Native American	63	19.51	10.51	0.00	68.96
Other	67	31.24	30.11	0.00	107.14
All ADD	2,378	25.42	17.96	-0.22	250.00

All groups had average AMND of at least $19.50, and the average member of the group that saved the most saved $22.30 more per month than the average member of the group that saved the least. (Differences in medians were larger.) Of course, these simple comparisons ignore all differences between groups other than race/ethnicity; controls for characteristics recorded in MIS IDA (Table 12.5) cut the gaps in half.

Deposit frequency. The average ratio of months with a deposit to months of participation was highest for Caucasians (63 percent), Asian Americans (62 percent), and Native Americans and "Other" (both 59 percent, Table 12.2). Average deposit frequency was 54 percent for both African Americans and Hispanics. These differences among groups are smaller (and of different relative magnitudes) than differences in AMND among groups.

Table 12.2 Deposit Frequency by Race/Ethnicity (Months with a Deposit/Months of Participation)					
Race	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
African-American	1,115	54	50	0	100
Asian-American or Pacific-Islander	45	62	63	17	100
Caucasian	877	63	67	0	100
Hispanic	211	54	50	7	100
Native American	63	59	57	6	100
Other	67	59	64	6	100
All ADD	2,378	58	57	0	100

Net deposits as a percentage of the pro-rated match cap. Asian Americans in ADD saved, on average, 125 percent of the pro-rated match cap (Table 12.3). "Other" saved 98 percent of the pro-rated match cap, Hispanics 91 percent, Caucasians 70 percent, African Americans 58 percent, and Native Americans 40 percent. This is roughly the same pattern as for AMND.

Table 12.3 Net Deposits as a Percentage of the Pro-rated Match Cap by Race/Ethnicity					
Race	**N**	**Mean (%)**	**Median (%)**	**Min. (%)**	**Max. (%)**
African-American	1,115	58	35	0	600
Asian-American or Pacific-Islander	45	125	120	0	311
Caucasian	877	70	59	0	509
Hispanic	211	91	72	0	600
Native American	63	40	18	0	179
Other	67	98	87	0	378
All ADD	2,378	67	49	0	600

Savings rate. Net deposits as a percentage of income were highest for Asian Americans (3.6 percent, Table 12.4). Next were "Other" (3.1 percent), Hispanics (2.8 percent), and Caucasians (2.7 percent). The savings rate was lowest for African Americans (1.7 percent) and Native Americans (1.2 percent). The pattern mimics Tables 12.1 and 12.3.[4]

In summary, Asian Americans saved the most in IDAs in ADD, followed by "Other," Hispanics, and Caucasians. African Americans and Native Americans saved the least.

[4] The low savings rate for African Americans in ADD differs from most of the literature. Some past work, however, looks at gross savings rather than net. Also, if African Americans save more because they want to insure against shocks and if IDAs are illiquid, then they could save at a lower rate in IDAs and yet save at a higher rate in all other forms.

Table 12.4 Savings Rate by Race/Ethnicity					
Race	N	Mean (%)	Median (%)	Min. (%)	Max. (%)
African-American	1,092	1.7	1.0	0.0	36
Asian-American or Pacific-Islander	45	3.6	2.9	0.0	11
Caucasian	854	2.7	1.7	0.0	71
Hispanic	203	2.8	1.7	0.0	107
Native American	62	1.2	0.7	0.0	8
Other	65	3.1	2.4	0.0	19
All ADD	2,321	2.2	1.3	0.0	107

Race/ethnicity as a Proxy for Unobserved Factors

The social context produces differences in observed and unobserved factors that are correlated with both race/ethnicity and savings. For example, discrimination tends to push people of color into neighborhoods with weak public schools. All else constant, this leads to lower human capital, lower income, and fewer resources available to save. Social patterns also lead to greater risk for people of color (for example, they may be the last hired and the first fired). Given that physically inherited characteristics play no role in saving in IDAs, any differences correlated with race/ethnicity and not explained by observed factors are due to unobserved factors produced in the social context. In a perfect model with controls for everything, race/ethnicity *per se* would have no link with savings.

What unobserved characteristics correlated with race/ethnicity might affect savings? For example, the collapse of the Freedman's Bank may account for some distrust in banks on the part of African Americans (Sherraden, 1991). The regression cannot include a variable for "bank targeted to this racial/ethnic group collapsed one century ago." The effects of discrimination clearly are correlated with race and should affect savings (Squires and O'Conner, 1998). People of color probably face greater risk of unemployment or other negative shocks to income or expenses, and this affects the risk of dissaving. People of color may also face greater demands for financial help from social networks (Chiteji and Hamilton, 2000; Caskey, 1997). Language ability also matters, especially for recent immigrants.

The results reported here come from incomplete models that do not control for all factors correlated with both race/ethnicity and savings. Thus, the estimates reflect not the effects of race/ethnicity itself but rather unobserved, socially produced factors linked with race/ethnicity.

Unmatched withdrawals. With observed factors constant, the risk of an unmatched withdrawal from matchable balances is statistically the same for African Americans, Native Americans, and Caucasians (Chapter 5). Differences in the risk of unmatched withdrawals probably do not explain differences in gross AMND among these three groups. Compared with these three groups, Hispanics, "Other," and Asian Americans are 11 to 16 percentage points less at-risk of unmatched withdrawals, and the differences are statistically significant.

Exit. The risk of exit was statistically the same for African Americans, Asian Americans, Caucasians, and Hispanics (Table 8.3). Compared to these groups, Native Americans were 2.5 percentage points more at-risk of exit, and "Other" were 4 percentage points less at-risk.

Differences in the risk of exit probably do not explain differences in gross AMND among African Americans, Asian Americans, Caucasians, and Hispanics.

AMND. Compared to Asian Americans, average monthly net deposit per participant was $10.58 less for "Other," $11.62 less for Hispanics, $12.77 less for Caucasians, $20.82 less for African Americans, and $22.30 less for Native Americans (Table 12.5).

Table 12.5 Decomposition of Average AMND by Race/Ethnicity

Race/ethnicity	Average AMND	Difference vs Asian Americans	Difference Due to Unobserveds	Difference Due to Observeds
Asian-American	41.81	0.00	0.00	0.00
Other	31.23	10.58	6.65	3.94
Hispanic	30.19	11.62	4.39	7.24
Caucasian	29.04	12.77	7.30	5.47
African-American	20.99	20.82	10.67	10.15
Native American	19.51	22.30	12.23	10.07

Differences in AMND among groups that were associated with differences in unobserved factors correlated with race/ethnicity are given by the differences in the regression estimates by group in Table 8.3. These differences appear in Table 12.5 in the column "Difference Due to Unobserveds". The gross difference ("Difference versus Asian Americans" in Table 12.5) minus the difference due to unobserveds is the "Difference Due to Observeds". That is, differences in observed factors accounted for $3.94 (37 percent) of the difference for "Other," $7.24 (62 percent) of the difference for Hispanics, $5.47 (43 percent) for Caucasians, $10.15 (49 percent) for African Americans, and $10.07 (45 percent) for Native Americans (Table 12.5). In rough terms, differences in factors included in the regression accounted for about half of the differences in average AMND among groups.

Discussion

Gross differences in average AMND among groups were large. Members of all racial/ethnic groups in ADD saved, on average, at least $19.50 per month, but average AMND across groups differed by as much as $22.30. We do not know whether IDAs shrunk or expanded this range; the data here cannot test how impact varies by group.[5]

In rough terms, about half of the difference in gross AMND among groups was explained by differences in observed factors. That is, if all groups had the same distribution of IDA structures, demographics, education and employment, income, assets, and all other factors in the model, then the savings gap would be cut in half. Even half the gap, however, is still large; unobserved factors correlated with race/ethnicity were strongly associated with savings outcomes.

[5] Data from the experimental design will be able to test this.

Analyses of regressions on such outcomes as wages or receipt of loans commonly focus on the links between the outcomes and unobserved factors correlated with race/ethnicity, noting that differences in unobserved factors are likely due to discrimination. This is correct, but the analyses often fail to also mention that differences in observed characteristics are also due to discrimination (Loury, 1998). If a data set included more factors that were associated with an outcome, then more factors would be observed and fewer unobserved, so the correlation between the outcome and unobserved factors linked with race/ethnicity would shrink, not because discrimination decreased but because the model improved. Thus, what matters is not whether factors linked with differences in savings and asset accumulation are included or excluded from a regression. What matters are improvements in long-term well-being. This requires smaller gaps in observed and unobserved characteristics and smaller gaps in savings and asset accumulation.

How can IDAs narrow these gaps? We do not know whether IDAs increase savings and asset accumulation more for disadvantaged groups than for others. In any case, it is virtually impossible for IDAs to worsen the relative net worth gap. For example, mean net worth in ADD was $1,050 for African Americans and $4,101 for Caucasians, for a relative gap of about 1:4. In the worst-case scenario, all of the average AMND of $20.99 for African Americans would come from shifted assets, and all of the average AMND of $29.04 for Caucasians would come from new savings. If both groups had match rates of 2:1 and participated for 33 months, then average net worth for African Americans after ADD would be $2,435, and average net worth for Caucasians would be $6,976. The new relative gap would narrow to about 1:3.

Regardless of whether the effects of IDAs are large for disadvantaged groups relative to the effects for other groups, IDAs might help to improve the absolute gains for disadvantaged groups.[6] This would necessarily involve targeted differences in institutional structures. For example, some groups might get different match rates, higher match caps, greater staff support, and/or more financial education. If widespread and funded by government, IDAs probably will not be targeted explicitly by race. If targeted by net worth or by income, however, IDAs could reach disadvantaged groups disproportionately (Conley, 1999). This argues in favor of a progressive savings policy.

[6] IDAs may, however, worsen absolute net worth gaps. For example, suppose all match rates are 2:1 and that all of the average AMND of $20.99 for African Americans comes from new savings and that $10 of the average AMND of $29.04 for Caucasians comes from new savings. Then the monthly impact of IDAs on the absolute level of net worth of African Americans is $62.97 but the monthly impact on the average absolute level of net worth of Caucasians is $68.08.

13. Match Rates and Saving

Matching is central to IDAs. The presence of the match sends a message that the poor can and should save. The match attracts people to IDAs, offers them a reason to save more, and encourages them to stay and to maintain their balances. The match turns a given amount of savings into a greater amount of asset accumulation. Restrictions on matched uses serve to guide saved resources into forms likely to improve long-term well-being.

This chapter discusses how matching is associated with savings outcomes in subsidized-savings programs. It also describes match rates in ADD and reports regression results. We find that higher match rates were linked with decreased risk of exit and decreased risk of an unmatched withdrawal. Match rates did not have a strong link with average monthly net deposits (AMND).

The Role of Matching

Definitions. The *match rate* is defined as the number of dollars eligible to be disbursed to a vendor by an IDA program for each dollar withdrawn by a participant and paid to the vendor in a matchable purchase. The *match* is defined as the total amount of dollars disbursed to the vendor by an IDA program. The *match cap* is defined as the limit on the number of dollars withdrawn that may be matched.[1] The *maximum asset accumulation* is defined as matches plus matched withdrawals when matched withdrawals equal the match cap.

The concepts of *match rates*, *matches*, *match caps*, and *maximum asset accumulations* are linked but distinct. Match rates are rates of return; matches are amounts of money; match caps are limits on amounts of money that can earn a given return; and maximum asset accumulations are limits on amounts of money from matched withdrawals and from matches.

Desired savings are defined as savings in the absence of a match cap. *Observed savings* are defined as savings in the presence of a match cap. Resources put in IDAs may come from new savings or from shifted assets (Chapter 14), so it would be more accurate to speak of "IDA deposits" rather than "savings."

Predicted economic effects. Economic theory predicts that match rates—but not match caps or maximum asset accumulations—affect desired savings. There are two economic effects. First, match rates are incentives to save, the bulk of the return for each dollar deposited. In a sense, the match rate is the price of the use of resources in the present in terms of resources available for use in the future. For example, with a 2:1 match rate, a dollar not deposited (or, equivalently, removed in an unmatched withdrawal) costs $2 in terms of lost matched withdrawals. Thus, higher match rates increase desired savings through what is known as the *substitution effect*.

[1] The match is the smaller of the match cap or of the withdrawal multiplied by the match rate.

Second, the match rate—given a match cap—determines the time and/or the rate of deposits required to reach a given asset-accumulation goal.[2] For example, suppose that a participant wants to accumulate $4,000. With a match rate of 1:1, savings of $2,000 would lead to a match of $2,000 and total asset accumulation of $4,000. Given average monthly net deposits of $50, the participant must save for 40 months. With a match rate of 3:1, however, required savings decrease to $1,000. The participant can now reach the goal either sooner ($50 per month for 20 months) or with a slower rate of deposits ($25 per month for 40 months). This decrease in the required time and/or in the rate of deposits to reach a given goal is known as the *income effect*.

The substitution effect pushes desired savings up, and the income effect pulls it down. The net effect on savings outcomes in a time frame may be positive, negative, or zero.

In a world without institutional effects, the match cap and the maximum asset accumulation would not affect desired savings. Of course, if desired savings exceed the match cap, or if an asset-accumulation goal exceeds the maximum asset accumulation, then observed savings is less than desired savings. If estimates of the links between match rates and desired savings do not control for this censoring of desired savings by the match cap, then the estimates will be biased toward zero. For example, suppose the match cap was $1, and the match rate was 100:1. Desired savings would be very high, but observed savings would probably be $1 for all participants. If the match rate fell to 50:1, desired savings would decrease, but observed savings would probably remain constant at $1. With censoring ignored and desired savings taken incorrectly as observed savings, the estimated effect of the huge reduction in the match rate would (incorrectly) be zero.

Is censoring likely to affect estimates of the association between match rates and desired savings in ADD? As of June 30, 2000, 10 percent of all participants—whether with an annual match-cap structure or a lifetime match-cap structure—were at the match cap. People with lifetime match-cap structures, however, still have time to get to the match cap, and evidence in Lazear (1999) suggests that many of them will wait until just before the time cap and then make large deposits. Furthermore, 30 percent of people with annual match-cap structures were at their annual match cap in their 12th month of participation. Thus, it seems likely that a large share of participants will be at the match cap by the end of ADD and that failure to control for censoring then will bias estimates. Here, however, we do not control for censoring.

Two-way causation may also mask links between the match rate and desired savings. For example, some programs in ADD likely set higher match rates if they expected their participants to save less—regardless of the match rate—and lower match rates if they expected their participants to save more.[3] If so, then the match rate not only causes desired savings, but expected desired savings also causes the match rate. This two-way causation may induce a spurious negative correlation between match rates and observed savings. The ADD data do not offer a way to control for this, although we believe that it takes place (Sherraden *et al*., 2000).

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[2] The goal could be a single purchase (such as college tuition) or a more general or diffuse goal.

[3] Such programs saw the match rate less as an incentive to save and more as a way to turn a given amount of savings into a usefully large amount of asset accumulation.

Predicted institutional effects. In addition to economic effects, match rates, match caps, and maximum asset accumulations may have institutional effects. For example, the presence of matches (or higher match rates) sends a message to participants that they would be foolish not to save. IDAs are bargain asset accumulation, and people will often take advantage of what are generally perceived of as bargains even if they do not think about whether it really is worthwhile in their own specific case. Matching may also increase saving because people feel that they get something for free.[4] These institutional effects of matching increase desired savings.

People may also think of match caps—which technically are limits—as goals.[5] Rather than try to figure out how much is optimal for them to save, they take the limit set by the program as the amount that they should save.[6] Likewise, participants may change maximum asset accumulations from limits to targets. These institutional effects should increase desired savings.

Of course, increases in desired savings due to institutional features are censored at the match cap. Censoring biases estimates of institutional effects toward zero.

In sum, desired savings may be affected by economic factors (substitution and income effects of the match rate) and by institutional factors (match cap, monthly savings target, and maximum asset accumulation). The substitution effect and all of the institutional effects increase desired savings. The income effect decreases desired savings. The match cap can drive a wedge between observed savings and desired savings, and failure to control for this may attenuate estimates of the links between desired savings and matching. Likewise, two-way causation attenuates estimates.

Evidence from 401(k) plans. Subsidies for saving —at least for the non-poor—are not new (Orszag and Greenstein, 2000). Most research on the effects of match rates on saving behavior looks at 401(k) plans. Like IDAs, 401(k) plans involve deposits in special accounts, and they also often include matches (from employers) and financial education. The plans also differ from IDAs in several ways. First, almost all deposits are deducted from paychecks. Second, savings

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[4] Some share of deposits in IRAs and 401(k) plans by the non-poor probably occur because people like to feel that they have cheated the tax collector (Hubbard and Skinner, 1996).

[5] Because programs in ADD often explicitly express match caps in terms of monthly goals, the monthly pro-rated match cap (which we also call the monthly savings target) may also have an institutional effect on participants. Because the monthly savings target depends not only on the match cap but also on the time cap, it may have an effect distinct from that of the match cap.

[6] In this case, people save at the match cap without censoring; desired savings is the same as observed savings. Unfortunately, we have no way to distinguish these cases from those in which desired savings exceeds observed savings for people at the match cap.

are intended (and used) for retirement.[7] Third, balances and earnings are tax-deferred.[8] Fourth, employees do not forfeit matches if they make withdrawals before retirement.[9]

Research on match rates in 401(k) plans focuses on effects on participation and savings.[10] For example, Borleis and Wedell (1994), Poterba, Venti, and Wise (1994), and Scott (1994) all find that the presence of a match is correlated with higher participation rates. Papke and Poterba (1995) and Papke (1995) find that participation rates increase with the match rate, and that savings increase as match rates increase from very low rates (the substitution effect swamps the income effect) but that savings decrease as match rates increase past 0.25:1 (the income effect swamps the substitution effect).[11] Kusko, Poterba, and Wilcox (1994) find that higher match rates increase participation but not savings.[12] Andrews (1992) and Bassett, Fleming, and Rodrigues (1998) find these same broad patterns.[13] Bayer, Bernheim, and Scholz (1996) is probably the best work on this topic so far, although it has all the common weaknesses of the rest of the literature except that they acknowledged the issue of two-way causation. They find that higher match rates are linked with both higher participation and higher savings.

In summary, research on 401(k) plans suggests that higher match rates increase participation but that, except at very low match rates, higher match rates do not increase savings and may even decrease it. None of these studies, however, controls for censoring, two-way causation, the match cap, or maximum asset accumulation. None uses data on individuals or looks at institutional effects.

Below, we estimate the links between match rates and the risk of exit from IDAs, the risk of unmatched withdrawals, and savings as measured by average monthly net deposits (AMND). We use individual data and control for the savings target and for a wide range of other program

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[7] Hardship withdrawals for emergencies and loans are allowed. Pre-retirement distributions are possible and common but are not subsidized.

[8] Because the match from the employer is best thought of as part of the remuneration package for the employee, subsidies in 401(k) plans come not from matches but from tax breaks.

[9] Pre-retirement distributions that take place when employment ends do incur a penalty, and matches are lost if the employee was not fully vested.

[10] Our work on IDAs does not look at participation because we lack data on non-participants. Whatever increases entrance in 401(k) plans, however, should decrease exit from IDAs.

[11] These two papers share weaknesses common in this literature. First, they do not control for censoring at the match cap. Second, they do not control for the match cap, for maximum asset accumulation, or for more than a handful of other variables. Third, they measure match rates and savings not for individuals but as averages across participants in a firm. Fourth, they do not control for possible two-way causation. Fifth, they ignore the possibility of institutional effects. Furthermore, Papke (1995) misreads IRS Form 5500 data.

[12] Although the paper notes that 75 percent of the sample was at the match cap, it does not control for censoring. Thus, the lack of a link between match rates and observed savings is not a surprise. The paper also shares the other weaknesses common in this literature.

[13] Bassett, Fleming, and Rodrigues (1998) do not control for censoring or two-way causation.

and participant characteristics.[14] We do not control for censoring or two-way causation, but we discuss the biases that may result. We consider the possibility of institutional effects, but the data do not allow us to disentangle them from economic effects.

Match Rates in ADD

This section looks at links between match rates and savings outcomes.[15] The links result from some unknown mix of economic effects, institutional effects, censoring, and two-way causation.

About 24 percent of participants in ADD had a match rate of 1:1. About 51 percent had a match rate of 2:1, 14 percent had a match rate of 3:1, and 6 percent had match rates in the range from 4:1 to 7:1.[16] The mean (and median) match rate was 2:1.

The match rate sometimes varies with the intended use, usually with a higher rate for home purchase. Some programs or sites had one match rate for all participants, and some had different match rates for different groups of participants. The estimated effects of the match rate on savings outcomes are based on programs where the match rate varies among groups (Appendix C). All match rates appear in several programs, and the regression controls for unobserved factors correlated with specific programs or sites, so estimates here probably do not reflect unobserved effects correlated with the program or site.[17]

Unmatched withdrawals. Unmatched withdrawals from matchable balances resemble negative savings because they reduce net deposits dollar-for-dollar. Thus, savings theory applies in reverse to unmatched withdrawals. For example, institutional theory predicts that higher match rates will decrease the risk of unmatched withdrawals. The substitution effect also predicts this because a higher match rate increases the opportunity cost of unmatched withdrawals. The income effect, however, pushes the other way. Censoring is not an issue, but two-way causation might cause higher match rates to appear to increase the risk of unmatched withdrawals.[18]

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[14] Because few people in ADD had reached their time caps as of June 30, 2000, we do not control for the total match cap or maximum asset accumulation. Until the end of ADD, the effects of these variables depend on the length of participation. Also, the amount of variation in ADD among the related measures of match rates, savings targets, match caps, and maximum asset accumulations may not permit the inclusion of all four at once.

[15] Chapters 5, 8, and 9 discuss links between the monthly savings target and savings outcomes.

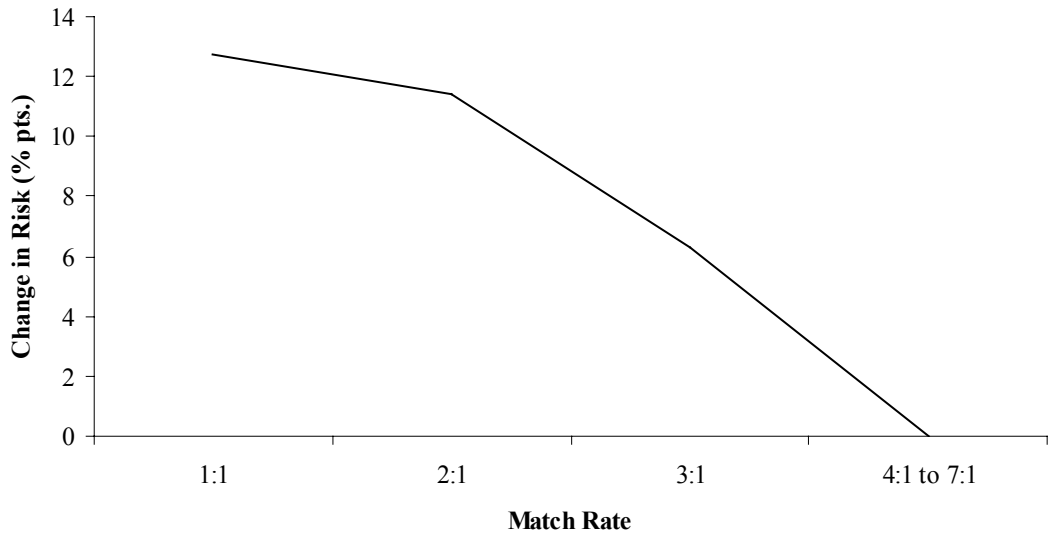
[16] The match rate in force at the time of a matched withdrawal applies to all funds withdrawn, even if a different match rate was in force when funds were deposited. Although the match rate for some individuals in ADD has changed, this has been rare.

[17] The rate of 2.5:1 appears only at the ADD/AFIA site of WSEP. Its effect is subsumed in the site dummy.

[18] Bias due to two-way causation might be severe. Match rates of 4:1 to 7:1 (or even 3:1) are very high and are uncommon in ADD. They were likely assigned only to groups expected to save little (and to make many unmatched withdrawals) regardless of the match rate. Indeed, the bulk of people with match rates of 4:1 or more were at CAAB, Near Eastside, and MACED, the programs with some of the poorest participants in ADD.

If match rates have no estimated association with the risk of an unmatched withdrawal, then it means that two-way causation masks the true association and/or that income effects cancel out both substitution effects and institutional effects. If higher match rates are associated with decreased risk, then it means that institutional effects and/or substitution effects dominate the income effect and/or any bias from two-way causation. If higher match rates increase risk, then it means that income effects and/or two-way causation dominate.

Figure 13.1 Association of Match Rate with the Risk of an Unmatched Withdrawal

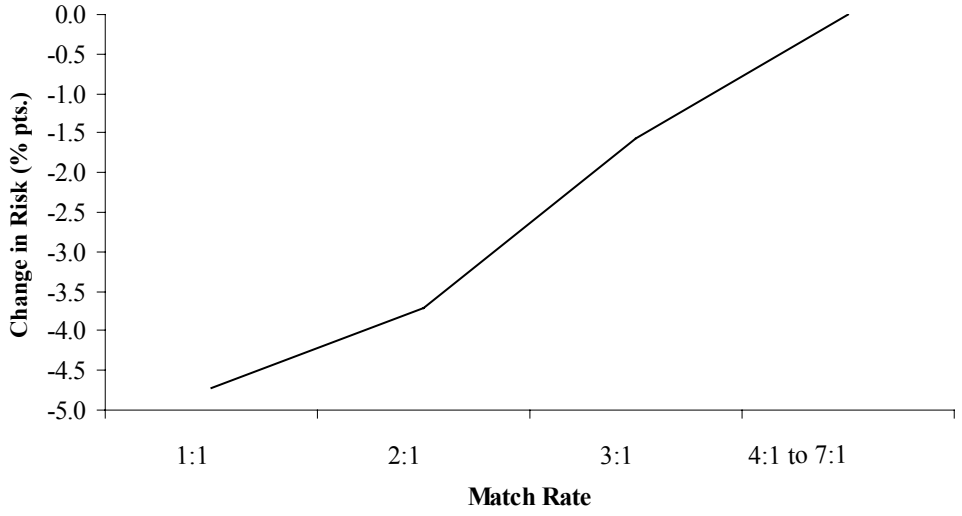


To test among these alternatives, we ran a probit regression on the presence of an unmatched withdrawal for participants in ADD. A set of variables stood for the match rates, with 4:1 to 7:1 as the base for comparison. The model also controlled for the monthly savings target and for a wide range of other program and participant characteristics (Chapter 5).

Higher match rates were linked with a lower risk of unmatched withdrawals (Figure 13.1). Compared to someone with a match rate in the range of 4:1 to 7:1 and with other factors in the model constant, someone with a match rate of 3:1 was 6.3 percentage points less likely to have an unmatched withdrawal, although the effect was not statistically significant (p-value 0.37). Someone with a 2:1 match rate was 11.3 percentage points more at-risk than someone with a match rate of 4:1 or more (84-percent confidence). Participants with a 1:1 match rate were 12.3 percentage points more at-risk of an unmatched withdrawal (84-percent confidence).[19]

[19] We did not test whether the differences between the estimated effects for 1:1 and 2:1 (or for 2:1 and 3:1 or for 1:1 and 3:1) were statistically significant.

Figure 13.2 Association of Match Rate with Risk of Non-exit



Although statistical significance was not very strong, the pattern suggests that institutional and/or substitution effects dominate the income effects and bias from two-way causation. Higher match rates encourage participants to eschew unmatched withdrawals and to maintain their balances.

Exit. People who leave an IDA program without having made an unmatched withdrawal resemble people eligible for a 401(k) plan but who do not join. Both groups pass up subsidies for saving, explicitly for exits from IDAs and implicitly for non-participants in 401(k) plans. Because research on 401(k) plans suggests that higher match rates increase participation, we expect higher match rates in IDAs to decrease exit (or to increase non-exit).

Censoring is absent because no exits are at the match cap. Furthermore, the income effect is absent because zero savings do not meet any asset-accumulation goal. Substitution and institutional effects should serve to decrease exit.

If higher match rates are linked with more risk of exit, then the cause of this correlation must be bias from two-way causation. If higher match rates are linked with less risk of exit, then institutional effects and/or substitution effects must swamp biases from two-way causation. If match rates have no link with exit, then these three forces must cancel each other out.

To test, we ran a probit on non-exit (Chapter 8). The association between match rates and the risk of non-exit was large, strong, and positive (Table 8.1 and Figure 13.2). That is, higher match rates were linked with less exit. The risk of exit with match rates from 4:1 to 7:1 was 4.7 percentage points less than for a 1:1 match rate (99-percent confidence), 3.7 percentage points

less than for a 2:1 match rate (99-percent confidence), and 1.6 percentage points less than for a 3:1 match rate (86-percent confidence).[20]

Institutional and/or substitution effects seem to swamp two-way causation; high match rates help to keep people in the program. Of course, we do not know the relative weights of institutional effects versus substitution effects, and measures of the strength of these effects are attenuated by bias from two-way causation.

Average monthly net deposits. AMND is the key measure of savings outcomes in this report. Most research on 401(k) plans finds that the match rate (once past 0.25:1 or so) does not affect savings, although censoring and/or two-way causation have biased all estimates toward zero.

In IDAs, match rates are far higher than in any study of 401(k) plans. We acknowledge censoring and two-way causation, but we cannot control for them. As always, institutional theory predicts that higher match rates will increase savings. The substitution effect also predicts an increase, but the income effect predicts a decrease.

If match rates have no estimated link with AMND, then two-way causation, censoring, and/or income effects cancel substitution and/or institutional effects. If higher match rates are linked with higher AMND, then institutional and/or substitution effects dominate income effects and/or the bias from censoring and two-way causation. If higher match rates decrease AMND, then income effects, two-way causation, and/or censoring dominate.

To test, we ran a two-step regression (Greene, 1993; Heckman, 1979). The first step was a probit on non-exit (Chapter 8), and the second step was ordinary least-squares on AMND for non-exits (Chapter 9). The match rate did not have a statistically significant association with AMND (Table 9.1). Higher match rates did not elicit greater savings.

This is consistent with research on 401(k) plans. Like that literature, however, we cannot rule out that the lack of an estimated link is due to failure to control for censoring and/or two-way causation. The lack of a link may also stem to some unknown degree on income effects that counter institutional and substitution effects. Our guess is that income effects are the most important component, but that censoring and two-way causation also matter.

Discussion

Matching is central to IDAs. Our tests suggest that higher match rates in ADD were linked with lower risk of unmatched withdrawals and lower risk of exit. Both links may be due to two-way causation, but we believe that they are probably due mostly to institutional and substitution effects. We find no link between match rates and AMND; this is due in some unknown degree

[20] We did not test for statistical significance between pairs without the base case of 4:1 to 7:1.

to opposing income and substitution effects and to the failure to control for data censoring and two-way causation.[21]

Higher match rates seem to discourage exit and discourage unmatched withdrawals better than they encourage savings. This may be due to psychological asymmetries in how people perceive gains and losses (Kahneman and Tversky, 1979). In particular, once people join an IDA program (and see themselves as participants) and make deposits (and begin to plan for matched withdrawals), they may feel the loss of potential matches (or the loss of identity as an IDA participant) due to exit or due to unmatched withdrawals more strongly than they feel the loss of potential matches caused by the failure to make deposits up to the match cap.[22] This may suggest that policy can increase savings if it can help people to imagine potential savings more concretely. One way to do this would be to give everyone an IDA with a periodic account statement, whether or not they make deposits or have a balance. Another strategy would be to open an account for everyone (or for all newborns) and place an initial deposit in it (Goldberg and Cohen, 2000), much like the Thrift Savings Plan for federal employees (Fisher, 2000). Finally, financial education—perhaps started as early as grade school—might help people to imagine the financial possibilities enabled by saving.

[21] Once ADD is complete and participants are past their time caps, we will be able to control for censoring and for all four variables related to matching (match rate, monthly savings target, match cap, and maximum asset accumulation). Two-way causation may still confound clean tests, and the data might lack sufficient variation for estimates on the four inter-related matching variables.

[22] For a purely rational viewpoint, explicit and implicit losses should be equivalent.

14. Sources of IDA Deposits

Do IDAs increase savings? This is one of the most basic questions for asset-based policy. This chapter presents a framework with two broad sources of deposits, new savings and shifted assets. Most discussion of IDAs assumes that all deposits come from new savings. But some deposits might come from shifted assets. Savings incentives work only if they spark new savings.

This chapter also describes assets and liabilities for participants in ADD and shows how the framework can guide the measurement of new savings. Although the MIS IDA data do not allow precise measurements, evidence from other components of the evaluation of ADD suggests that IDA deposits come from both new savings and shifted assets.

New Savings versus Shifted Assets

Savings incentives aim to increase saving.[1] If deposits into IDAs come from asset shifts, however, then incentives subsidize saving but do not increase it. Also, with shifted assets, subsidies go not to new savers but to ones who already saved.

Two groups have argued over this question in the context of IRAs and 401(k) plans (Bernheim, 1997). One camp uses tests biased against new saving and fails to reject the hypothesis that all deposits come from asset shifts (Engen, Gale, and Scholz, 1996; Gale and Scholz, 1994). The other camp uses tests biased against asset shifts and fails to reject the hypothesis that all deposits come from new saving (Poterba, Venti, and Wise, 1996). The truth is somewhere in the middle (Hubbard and Skinner, 1996; Bernheim, 1999).

Sherraden (1991) argues that new savings would be the bulk of deposits in IDAs because the poor have few assets to shift. Some evidence from IRAs and 401(k) plans does suggest that the poor are more likely to make deposits from new savings (Engen and Gale, 2000; Bernheim and Scholz, 1993). Still, matches in IDAs are strong incentives to come up with deposits, whatever their source, and it may be easier to shift than to save.

The poor do have some resources, even if they have few assets.[2] Because resources are convertible among forms, some IDA deposits may come from shifted assets. Even participants with no financial assets at enrollment can shift.

[1] Subsidies in IDAs also aim to increase asset accumulation from a given level of saving.
[2] In particular, the poor have just as much time in a day as the non-poor.

Sources and Forms of Resources

All resources come from Nature or human capital (time and effort combined with skill from education and experience).[3] For example, Nature endows us with air to breathe, and human capital converted to wages endows us with what money can buy.

People acquire resources either as gifts from Nature, as gifts from other people, or as trades for other resources acquired in the past (in particular, for human capital). People use resources to produce things to exchange for what others produce in the market, to produce things for their own use in the household, to enjoy leisure, and to give as gifts. People derive well-being from consumption of resources, from time in leisure, from giving gifts, and from mental contemplation of what resources allow them to do.[4]

Nature and society as a whole set the rules for the conversion of resources between forms and for the use of resources by people. For example, society may impose a retirement age beyond which human capital cannot be sold in the market, and Nature imposes subsistence requirements on the physical body.[5] Reductions in the producers of well-being are costs. For example, the cost of leisure is time. Gifts reduce personal resources, and worry or ignorance impedes the contemplation of the good possibilities in life.

People convert their fundamental endowment of time and other gifts from Nature and from others into consumption, more time (life), and five broad types of assets: human capital, financial balances, household durables, producer durables, and social capital. Human capital requires continued life—and thus health via leisure and consumption—and skill (knowledge and habits). Financial balances are formal, impersonal social claims on resources. They encompass cash, bank accounts (for example, passbook savings, checking accounts, and IDAs), and other financial investments such as stocks, bonds, IRAs, 401(k) plans, and cash-value life insurance. Household durables are used to produce things for one's own use: examples include houses, cars, clothes, pots and pans, and computers. Producer durables are used to produce things to sell in the market. They may include plant and equipment, cars, and computers. Social capital is made up of informal, personal social claims. Examples include access to networks, deference based on who one is rather than what one does, favors owed or accrued, and bonds of love.

Resources are convertible among forms. *Transaction costs* are defined as the costs of conversion. Transaction costs—in terms of time, effort, and physical degradation—depend on the starting form of resources and on the ending form.[6]

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[3] Life, which supplies time and capacity for effort, is a gift from Nature, so human capital ultimately comes from Nature.

[4] Freedom increases what one can do with given resources, and so freedom increases well-being via contemplation even though many possible roads are not taken.

[5] Nature also imposes death, beyond which there is no time and so no human capital.

[6] More precisely, transaction costs are the resources—tradable and non-tradable—lost in the conversion of resources. Transaction costs are like friction. Sherraden (1989) discusses transaction costs and how they relate to poverty.

People may also exchange resources through time; loans trade resources in the present for claims on resources in the future. Debts may be financial, physical, or social.

As time passes, resources depreciate or appreciate. Depreciation encompasses transaction costs in resource conversions and waste. *Maintenance* is defined as additions that replace depreciation; *investments* are defined as non-maintenance additions.

Effort—with time and skill—drives the returns to human capital in the household and market. Effort, time, and skill are substitutes to some extent. With enough time, a novice can do a job without much stress; an expert works quickly and with less mental focus; and almost anyone can work faster and/or better if they try more. More effort also increases the rate of growth of skill. Thus, more effort now reduces the future effort required for a given job. Effort, however, is costly; leisure is the absence of costly effort.[7]

This framework shows that resources are convertible among forms and that their fundamental source is Nature and/or time, effort, and skill embodied in human capital.

Sources of IDA Deposits

Resources deposited in an IDA come from conversions of time, effort, and human capital (new saving) or from conversions of resources in other forms (asset shifts).

Accounting Identities

Resource inflows come from income in the market, appreciation of assets, debt assumed, gifts received, conversions from non-IDA assets, and IDA withdrawals. Resource outflows go to consumption, maintenance of assets, depreciation of assets, dept repayments, gifts given, conversions to non-IDA assets, and IDA deposits. Sources equal uses:[8]

Sources	=	Uses
Income	=	Consumption
+ Appreciation		+ Maintenance and Depreciation
+ Debt Assumed		+ Debt Repaid
+ Gifts Received		+ Gifts Given
+ Conversions from Non-IDA Assets		+ Conversions to Non-IDA Assets
+ IDA Withdrawals		+ IDA Deposits

[7] Effort is also habit-forming; it costs less if past levels were high, more if they were low.
[8] Time and effort do not last, so, in a time frame, their sources equal their uses. Debts and non-IDA assets include social debts and social assets.

In a given time frame, *net IDA saving*—defined as IDA deposits minus IDA withdrawals—is the difference between other types of inflows and outflows:[9]

Net IDA Saving = IDA Deposits – IDA Withdrawals

Net IDA Saving = Income
+ Net Appreciation
+ Change in Debt
+ Net Gifts
– Consumption
– Maintenance
– Net Conversions of Non-IDA Assets

Net IDA saving depends on income, net appreciation, changes in debt, net gifts, consumption, maintenance, and net conversions of non-IDA assets.

New Savings

IDA deposits are defined as *new savings* if they come from:

- Increased income;
- Increased net appreciation;
- Increased net gifts; and/or
- Decreased consumption.[10]

Increased income or decreased consumption come from:

- Increased effort;
- Increased time in production (household or market); and/or
- Increased amounts, returns, and/or utilization of human capital.

Thus, new savings come from work (time and effort), from restraint in consumption, from lower-quality consumption, or from unconsumed resources from net appreciation or net gifts. New savings convert fundamental, non-tradable resources from nature (time, effort, and human capital) into tradable resources.

For example, work may increase income in five ways, all else constant. The first is a shift of time away from leisure or household production toward market production. The second is an increase in effort in market production. The third is an increase in the amount of human capital (perhaps from post-secondary education or from experience in microenterprise) used in market production. The fourth is an increase in the market return to human capital, perhaps from a

[9] This equation is an accounting identity and does not imply that savings are what are left-over after other choices are made.
[10] Increases and decreases are considered relative to levels in the absence of IDAs.

reduction in discrimination. The fifth is an increase in the utilization of a given amount of human capital, perhaps from a job switch.

Decreased consumption also requires work. For example, restraint (or a cut in quality) requires effort. Also, the replacement of purchases in the market with ones produced in the household—all else constant—requires a shift of time from leisure to household production and/or more effort and/or more, better, or better-used human capital. Likewise, the search for higher value from market purchases uses work to maintain the quality and level of purchases but to reduce outflows of tradable resources used in exchange, thus freeing up resources to be saved.

Asset Shifts

IDA deposits are defined as *asset shifts* if they come from conversions of non-fundamental resources. In general, asset shifts come from resources saved in the past or from debt (resources saved in the future). Asset shifts include:

- Increases in debt;
- Decreases in asset maintenance;
- Increases in net conversions of non-IDA assets.

Asset shifts do not convert resources in non-tradable forms into tradable forms. Rather, they convert already-tradable forms to other tradable forms, in this case, IDA deposits.[11]

Debt. A loan exchanges resources now for the promise of future resources. This does not convert fundamental resources to tradable ones; it merely shifts control over tradable resources through time.[12] Participants are unlikely to take out a bank loan to finance IDA deposits, but they might borrow from family and friends, pawnshops, or check-cashing outlets.

All else constant, delay in debt repayment is an asset shift, equivalent to an increase in debt. For example, a participant may wait to pay a phone bill to free up funds for an IDA deposit. This does not convert fundamental resources to non-tradable resources; it shifts tradable resources from phone bill to an IDA deposit. As another example, suppose that someone has student debt or credit-card debt and—before IDAs—repaid a given amount each month. If the rate of repayment slows because some resources that would have repaid debt now go to IDAs, then there is an asset shift.

IDAs may indirectly lead to greater debt in other ways. For example, if credit-card debt increases because IDA deposits absorb some cash that otherwise would have covered purchases, then, on the margin, the increase in debt finances IDA deposits.

People can fund IDAs with debt even if they do not take out a loan marked "For IDAs."

[11] Transaction costs in conversion do use up some fundamental, non-tradable resources.

[12] In some cases, debt may act as a pre-commitment device to make future income exceed consumption (Maital, 1986). If this future saving would not have taken place in the absence of IDAs, then loans that finance IDAs (net of interest) may be new savings.

Maintenance. All else constant, delays or cuts in asset maintenance are like slowed repayment of debt; tradable resources that would otherwise counter depreciation instead finance IDAs. For example, an IDA participant may put funds that would have been saved for home repairs in an IDA (and later use matched withdrawals for home repair).

All types of assets require maintenance, so IDA deposits may be shifted from the neglected maintenance of any asset. For example, resources for human-capital maintenance can shift to IDA deposits if, to get cash for IDAs, participants skip medical check-ups or buy such low-quality food that they become malnourished. To finance IDAs, participants may delay repairs on household durables (such as homes or cars) or purchases of new durables (such as clothes). Owners of microenterprises may do the same for producer durables. Even social capital requires maintenance through personal contact, time, and favors. If an IDA participant spends more time in the market to earn more income and thus spends less time in social networks, then some income may come at the expense of social capital. People may shift resources from maintenance into IDAs in many small, subtle, diffuse, and often unconscious ways.

Conversions from non-IDA assets. Because resources are convertible between forms, any form of asset may be converted to IDA deposits. Conversions from fundamental, non-tradable resources—Nature and/or time, effort, and human capital—are new savings; conversions from tradable assets are asset shifts.

The simplest way to convert non-IDA assets is to make IDA deposits from cash or financial balances that are already on-hand or that would have been saved anyway. In the same way, deposits of proceeds from the sale of consumer or producer durables are asset shifts. To free up cash for IDAs, a participant may call in (or incur) social debts—for example, asking relatives to care of children without pay—to substitute for goods or services that otherwise would have been purchased in the market.

Conversions of non-IDA assets may also take the form of delayed purchases. For example, Engen, Gale, and Scholz (1996) suggest that many people delay home purchase because funds that otherwise would have gone for a down payment are locked up in 401(k) plans.[13] In IDAs, the match gives strong incentives to people who already saved for matchable uses (and/or who would have saved anyway) to wait to make these purchases with a matched withdrawal.[14] Participants may also delay purchases of household durables (such as clothes) or delay investments in human capital (such as the replacement of current enrollment in college with a dead-end job that earns cash for IDAs).

Implications. Compared with the non-poor, the poor have fewer assets to shift, but they still can shift, albeit to a lesser extent. Even people with only illiquid assets can postpone maintenance, and even people with no assets can borrow or delay purchases.

[13] They may also shift assets if they buy smaller homes than in the absence of 401(k) plans, if they finance 401(k) deposits with home-equity loans, or if they repay mortgages slower.

[14] Even if matches speed up accumulation and purchase, the resources are asset shifts because they would have been saved anyway.

Do IDAs increase saving? The answer requires knowledge of new savings, that is, the difference (due to IDAs) in the change in conversion of fundamental, non-tradable resources to tradable resources. This requires knowledge of the values of all components of net worth (financial and non-financial) through some time frame, both with and without IDAs. Many survey respondents, however, cannot report accurately the value of bank balances and current debts, let alone the value of consumer and producer durables and social capital. Human capital and time for leisure are even more difficult to value. Furthermore, conversions of tradable resources often involve subtle shifts through time that may escape even the participant. Even if all these issues were resolved, we would know net worth only with IDAs; we would not know what net worth would have been without IDAs. Thus, the measurement of new savings is extremely difficult.

Answers to whether IDAs cause new savings can take three approaches. The first is random assignment of access to qualified participants or to eligible people; average differences in net worth between people with and without access can then be seen as new savings. The experimental-design component of ADD adopts this approach. The second approach is to ask people what they did. The third approach is to make assumptions about all unmeasured aspects. The experimental-design component of ADD is still in progress; the rest of this chapter explores the other two approaches.

New Savings and Asset Shifts in ADD

Surveys of Participants

A straightforward way to estimate the difference in the change in net worth due to IDAs is to ask participants.[15] This section discusses savings strategies found in a survey and case studies of participants in ADD (Moore *et al*., 2001 and 2000).[16] The analysis here suggests that some IDA deposits came from a mix of new savings and shifted assets.

New savings. ADD participants use some new-savings strategies that convert fundamental, non-tradable resources into tradable forms to be saved in IDAs. Other strategies produce new savings through restrained or low-quality consumption.

Some participants attempted to increase income through shifts of time to market production. About 29 percent of those surveyed said that, because of IDAs, they worked longer hours, and 41 percent said that they were more likely to work more. About 59 percent said that they were more

[15] This approach is not perfect. People may not know whether or not they shifted assets. Even if they know, they might not tell the truth.

[16] The survey was not designed to measure new savings versus shifted assets; it asked about the presence of savings strategies, not how much was saved due to each strategy. Furthermore, topics did not encompass all the ways to come up with new savings or to shift assets. For example, the survey did not ask whether participants raided a bank account to make IDA deposits. The analysis simply looked for broad clues about how ADD participants financed IDAs.

likely to work or to stay employed. Some case subjects said that, because of IDAs, they bartered services or did odd jobs.

About 61 percent of surveyed participants said that IDAs made them more likely to increase income in ways other than working more hours. For human capital, this might mean increases in levels, in market returns, or in utilization. For example, some case subjects said that they put more effort into budgeting and money management.

In several ways, participants spent more time, effort, and human capital in household production so as to free up cash for IDAs without concomitant cuts in consumption. For example, 70 percent of survey respondents said that, because of IDAs, they shopped more carefully for food; this used greater time, effort, and skill in household production to get greater value from market purchases. Some case subjects said that, because of IDAs, they used coupons and searched for bargains. Of surveyed participants, 68 percent said that they ate out less, a straight substitution of household production for market purchases.

The most common strategies (but not necessarily the most important or most effective) involved less consumption, either in amount or quality. For example, some case subjects said that they conserved energy, cooked inexpensive meals, and cut back on treats. About 34 percent of those surveyed said that they spent less on alcohol and tobacco.[17]

Participants also generated new savings through reduced quality of leisure. Among survey respondents, 64 percent said that they spent less on leisure, and 30 percent said that they had less money for leisure than they would have liked. Some case subjects said that they took fewer vacation trips.

Asset shifts. In addition to new savings, participants in ADD shifted assets. For example, 35 percent of those surveyed said that, because of IDAs, they were less likely to save in other forms. Even if they did not explicitly move cash or balances from other accounts into IDAs, this response suggests that they still reduced additions to other accounts, and this is equivalent to an explicit asset shift.

Debt financed some IDA deposits.[18] Of those surveyed, 7 percent borrowed from family or friends, 3 percent took on debt from another source, and 16 percent postponed bill payment. Others—such as the 9 percent who reported that IDAs made it more difficult to pay bills—probably made implicit shifts from debt to IDA deposits.

Household durables were also converted to IDA deposits. Of those surveyed, 12 percent said that they had sold household or personal items to get cash for IDA deposits. Likewise, the 55 percent who said that they wore or bought used clothes (or postponed the purchase of new clothes) shifted resources from household durables to IDAs.

[17] The share of participants who used alcohol or tobacco in the first place is unknown.

[18] The incidence of this strategy may be underreported because the question was asked by program staff, and they had instructed participants not to finance IDAs with debt.

Some participants postponed maintenance of other assets to finance IDAs. Of those surveyed, 17 percent said that, because of IDAs, they postponed visits to the doctor or dentist, and 8 percent said that they gave up food or other necessities. One case subject cancelled membership in a health club.[19]

In sum, the analysis here of data from Moore *et al*. (2001 and 2000) suggests that participants in ADD financed deposits with a mix of new savings and shifted assets.

Models with Assumptions

Impact is defined as the difference in the change in an outcome with versus without a treatment. (Moffitt, 1991). For new savings in IDAs, impact is the change in net worth for participants with IDAs minus the change in net worth that would occur for participants without IDAs.

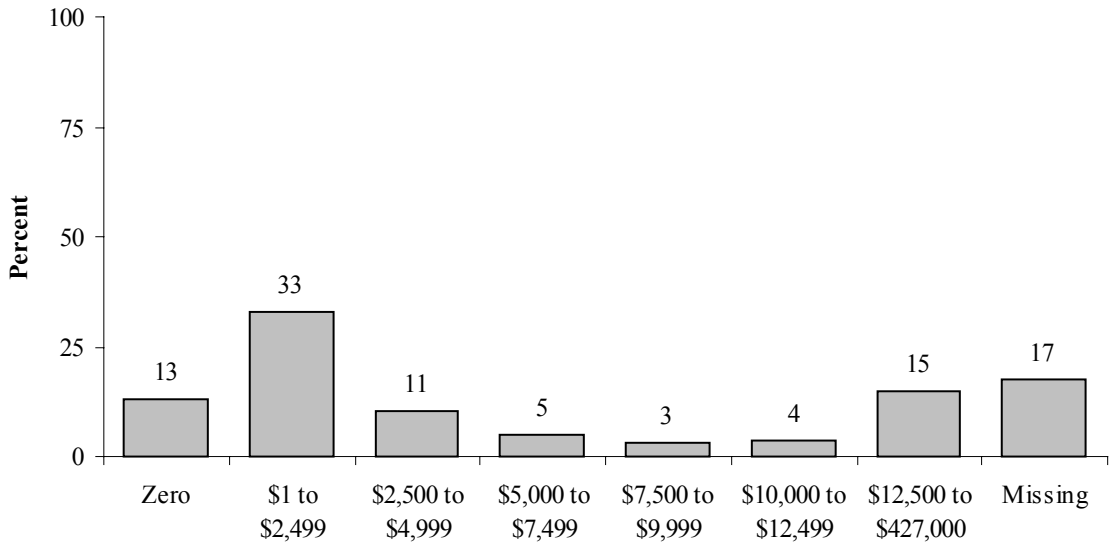
Three factors make this simple measurement scheme difficult to implement. First, we do not observe all components of net worth. Second, we do not observe net worth for participants without IDAs because participants—by definition—have IDAs. Third, participants are self-selected and program-selected, so they probably differ from non-participants in ways that make it difficult to use the change in the net worth of non-participants as a proxy for the change in the net worth of participants (if they did not have IDAs).

Thus, all attempts to measure new savings must make assumptions.[20] These measurements must assume some pattern of change (usually no change) for unmeasured components of net worth. They must assume or estimate (usually based on non-participants) the change in measured components of net worth for participants in the absence of IDAs. If the observed net worth of non-participants is used to estimate the unobserved net worth of participants in the absence of IDAs, then the analysis must control for (and/or assume away) non-IDA differences between the two groups that may affect net worth.

Randomized experiments produce the most credible estimates of impact (Manski, 1995), but even experiments suffer from many threats to validity (Heckman and Smith, 1995; Kramer and Shapiro, 1984). For example, an experiment may fail to measure all components of net worth. In the end, the key is to be careful and to make explicit the assumptions required to derive results (Schreiner, 1999b).

[19] All the examples here deal with human capital, but that does not mean that this type of neglect was common nor that other types of maintenance were not also postponed.
[20] What matters is not that there are assumptions but rather that they are made explicit.

Figure 14.1 Distribution of Total Assets of Participants



The evaluation of ADD includes an experimental design, but it is not yet complete. The approach here is to make assumptions about what we do not know until new savings can be measured from data in MIS IDA. As a prelude, we discuss the two broad components of net worth, what participants in ADD own and what they owe.

Assets and Liabilities of Participants in ADD

Assets. At enrollment, most people in ADD (57 percent) had total assets below $5,000 (Figure 14.1). Exactly one-third of the 15 percent with assets in excess of $12,500 were homeowners.

Median total assets for participants in ADD were $1,710 (Table 14.1). A few people had very high assets (one reported $290,435), so the mean ($11,718) exceeded the median.[21]

Asset shifts are easier if transaction costs are low. Transaction costs are lower for liquid assets (cash, passbook savings accounts, and checking accounts) than for illiquid assets (homes, cars, businesses, land or property, and investments).

Median liquid assets in ADD at enrollment were $125 (mean $490, Table 14.1).[22] About 50 percent of participants had a passbook savings account (in addition to an IDA), and 63 percent had a checking account.[23] Liquid assets were 32 percent of the value of total assets.

[21] In most programs in ADD, eligibility was income-tested but not asset-tested.
[22] For the 76 percent of participants who reported non-zero liquid assets, the mean was $647 and the median was $270.
[23] MIS IDA did not record the value of cash on-hand.

Table 14.1 Distribution of Assets of Participants by Type

Asset Type	N	Mean ($)	Median ($)	Min. ($)	Max. ($)	Missing	Participants with an Asset Type (%)	Distribution of Total Asset Value by Type (%)
Passbook Account	2,244	250	0	0	15,480	134	50	15
Checking Account	2,176	231	50	0	10,000	202	63	17
Total Liquid Assets	2,116	490	125	0	15,480	262	76	32
Home	2,323	7,327	0	0	290,000	55	13	13
Car	2,215	2,681	850	0	34,000	163	61	46
Business	2,354	536	0	0	100,000	24	6	3
Land or Property	2,341	328	0	0	100,000	37	2	1
Investments	2,349	435	0	0	50,000	29	13	5
Total Illiquid Assets	2,156	11,222	1,200	0	290,415	222	66	68
Total Assets	1,965	11,718	1,710	0	290,435	413	84	100
Total Liabilities	2,242	8,940	1,335	0	281,000	136		
Net Worth	1,883	2,588	100	-99,350	258,150	495		

For all participants, mean home value was $7,327 (Table 14.1). For the 13 percent of participants who owned a home (and did not have missing values), the mean home value was $54,725. For the 61 percent who owned a car, mean car value was $4,416. Median assets in businesses, land or property, or investments were zero.

In terms of assets in MIS IDA, the typical participant in ADD had a car, about $100, and little else. Not only were there few assets to shift into IDAs, but the low level of asset accumulation before ADD suggests that there was little scope to shift through the reduction of the rate of savings in non-IDA forms. Of course, some participants did have substantial assets, and they may have shifted at least something. Unfortunately, we cannot say much more with the data from MIS IDA unless we make strong assumptions (see below).

Liabilities. Most people in ADD (62 percent) had total liabilities of less than $5,000 (Figure 14.2). About 29 percent had no debt at all. Of the 17 percent with debt in excess of $12,500, about half had home mortgages, and about one-third had student debt.

Median total liabilities in ADD were $1,335 (Table 14.2). A few people had very high debts (one reported $281,000), so the mean ($8,940) exceeded the median.

The average participant had home-mortgage debt of $4,062. For the 10 percent of participants who had a home mortgage, average mortgage debt was $40,928. The 21 percent of participants with a car loan owed an average of $6,457.

Figure 14.2 Distribution of Total Liabilities of Participants

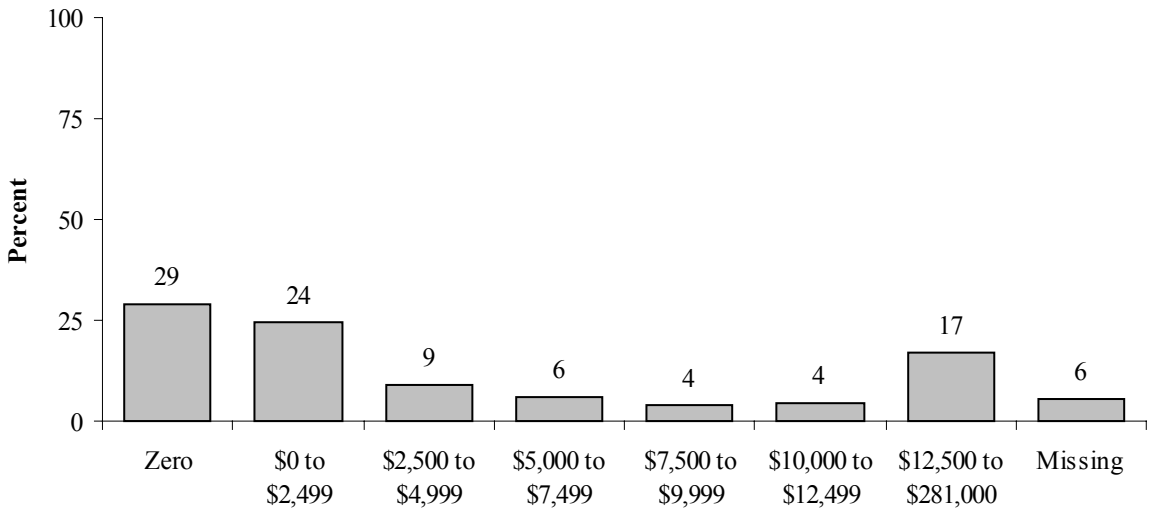


Table 14.2 Distribution of Liabilities of Participants by Type

Liability Type	N	Mean ($)	Median ($)	Min. ($)	Max. ($)	Missing	Participants with a Liability Type (%)	Distribution of Total Liability Value by Type (%)
Home Mortgage	2,378	4,062	0	0	250,000	0	10	12
Car Loan	2,376	1,329	0	0	28,000	2	21	19
Business Loan	2,378	168	0	0	90,000	0	2	1
Land or Property	2,378	179	0	0	100,000	0	1	1
Family and Friends Debt	2,345	416	0	0	120,000	33	18	10
Household Bills	2,333	179	0	0	23,000	45	28	14
Medical Bills	2,292	282	0	0	42,000	86	16	8
Credit-card	2,349	909	0	0	60,000	29	32	21
Student Loans	2,307	1,377	0	0	90,000	71	16	14
Total Liabilities	2,242	8,940	1,335	0	281,000	136	69	100
Total Assets	1,965	11,718	1,710	0	290,435	413	84	
Net Worth	1,883	2,588	100	-99,350	258,150	495		

The presence of debt suggests that many participants, if they wanted, could have shifted resources from loans (or from loan repayments) into IDAs. For example, the 32 percent of participants with credit-card debt owed an average of $2,812. The 18 percent who had borrowed from family and friends owed an average of $2,338, the 28 percent with household bills owed an average of $646, the 16 percent with medical bills owed an average of $1,774, and the 16 percent with student debt owed an average of $8,656.

Did participants fund IDAs with debt? The data in MIS IDA suggest that it was possible. Participants could borrow, and they had debts on which they could have slowed repayment.

Net worth. *Net worth* is defined as the difference between assets and liabilities. In ADD, median net worth was $100 (mean $2,588, Table 14.2).

Estimates of new savings. Very strong assumptions are required to use the general framework in the first part of this chapter with data from MIS IDA to estimate the share of IDA deposits from new savings. The exercise mostly shows the difficulty of the measurement of new savings.

First, we must measure all components of net worth. But MIS IDA, like all other data sources, omits social assets and debts and does not record a financial value for human capital. We assume that IDAs do not affect any part of net worth not recorded in MIS IDA.

Second, we must measure net worth for participants in the absence of IDAs. Of course, this is unobservable. Also, we do not have a control group whose net worth might serve as a proxy. We assume that net worth without an IDA is the same as it was at enrollment.

Third, we must measure changes in net worth through time. In fact, we only measure net worth at a single point in time. To come up with changes, we assume that IDA balances are financed by new savings and/or by asset shifts from liquid assets. We further assume that all liquid assets up to the observed IDA balance are shifted.

Given these very strong assumptions, an estimate of new savings is the non-negative difference between IDA balances and liquid assets at enrollment.

As of June 30, 2000, mean net deposits in ADD were $353 ($420 for non-exits). Median liquid assets were $125. How much of IDA deposits could have been shifted from liquid assets?

Many people held no (or very little) liquid assets. For passbook savings, 48 percent had no balances, and 29 percent had $1 to $249 (Figure 14.3). For checking accounts, 34 percent had no balances, and 34 percent had $1 to $249 (Figure 14.4).

Asset shifts were assumed impossible for the 24 percent of participants with no liquid assets, and most people had too few liquid assets at enrollment to fund all of their IDA deposits. Thus, some people could not have funded their IDA deposits entirely with asset shifts.

Figure 14.3 Distribution of Balances in Passbook Savings Accounts

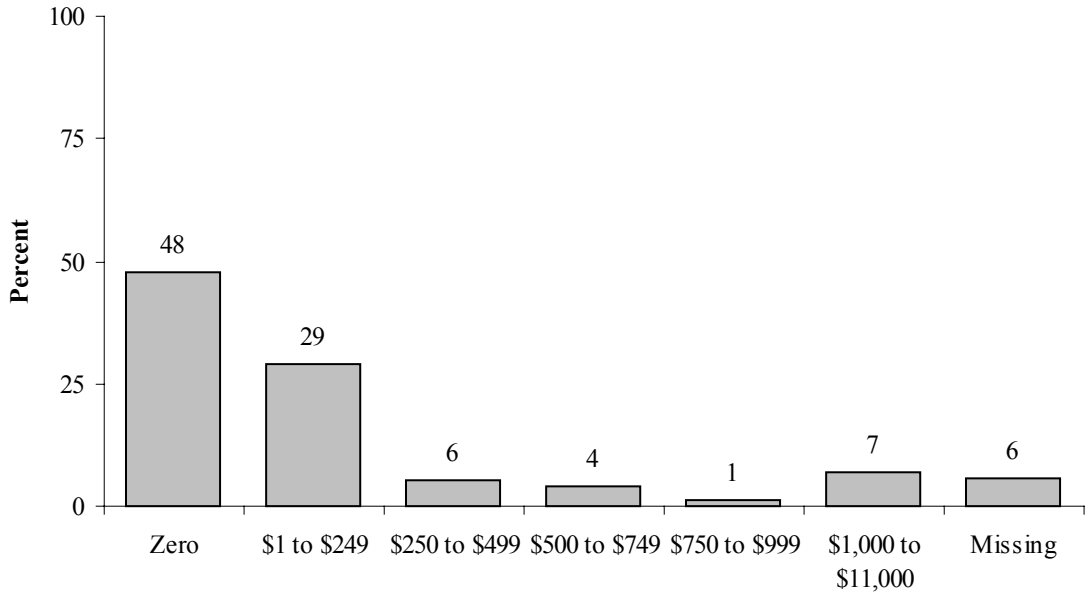
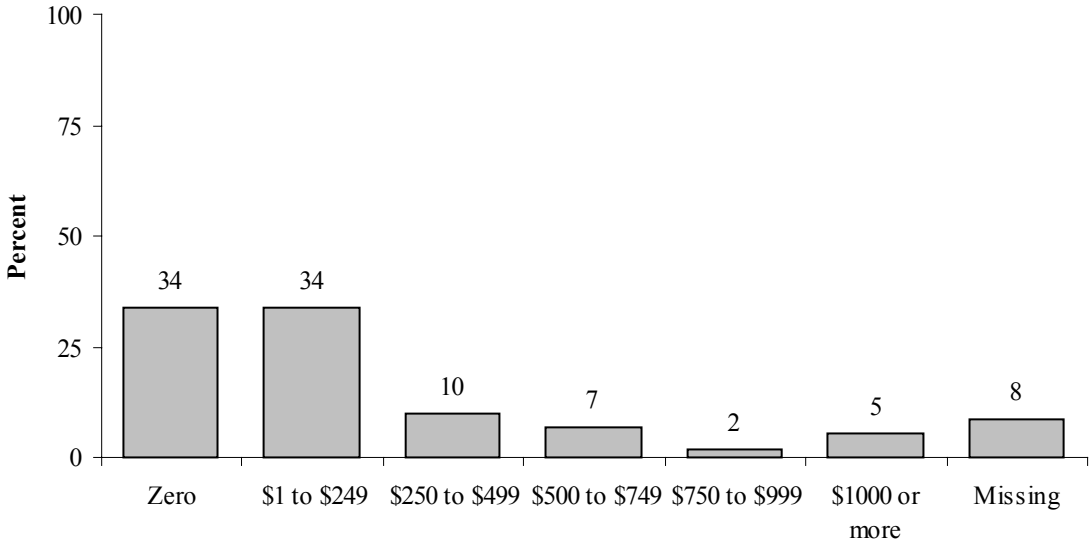


Figure 14.4 Distribution of Balances in Checking Accounts



The per-participant mean of the maximum share of IDA balances in ADD that could come from shifts of liquid assets is 53 percent (median 44 percent).[24] If the heroic assumptions in this exercise were correct (and they are not), then we would conclude that about half of IDA deposits in ADD came from asset shifts and that about half came from new savings.

Of course, not all IDA deposits that could have come from liquid assets did so. On the other hand, participants may have shifted from other components of net worth. The true share of IDA deposits that came from new savings could be more or less than 50 percent. This exercise shows how to narrow the general framework so that data from MIS IDA can provide an estimate of new savings. It does not, however, provide a good estimate of new savings in ADD.

Summary

Do IDA deposits come from new savings or shifted assets? The framework here shows how resources are converted among forms and how new savings comes from increased conversions of fundamental, non-tradable forms to tradable forms. Anyone can shift assets into IDA deposits.

A survey and case studies from the evaluation of ADD suggest that IDA deposits come from both new savings and shifted assets, but we do not know the importance of each in the mix.

If IDA are to promote both savings and asset accumulation, then they must do more than just provide matches for asset accumulation; they must also spark new savings. The data in MIS IDA do not permit a credible measurement of the magnitude of new savings in ADD; this must wait for the data from the experimental-design.

[24] This excludes exits because exits had zero net deposits and so asset shifts were irrelevant. With exits included, the mean maximum share shifted is 44 percent (median 26 percent).

15. Summary and Conclusions

In this final chapter, we summarize and comment on key findings from the American Dream Demonstration (ADD). We also offer observations on IDA programs, policy, and research.

Savings and Asset Accumulation in IDAs in ADD

The Management Information System for Individual Development Accounts (MIS IDA) records the following savings outcomes for ADD participants as of June 30, 2000:

- 2,378 participants opened IDA accounts in 14 programs.
- The average participant (exits and non-exits) had average monthly net deposits (AMND) of $25.42 ($30.30 for non-exits). The median was $17.96 ($23.35 for non-exits).
- The average length of participation was 13.3 months.
- The average participant had total net deposits of $353 ($420 for non-exits).
- Given the average match rate of 2:1, the average participant accumulated assets in IDAs at a rate of about $75 per month ($900 per year).
- On average, participants made deposits in 7 of 12 months.
- At the rate observed so far, participants will use 67 percent of their match eligibility.
- Aggregate net deposits in ADD were $838,443. Aggregate asset accumulation (net deposits plus match) was $2,482,951.

Can the poor save in IDAs? The ADD data show that they can. The possibility of saving by the poor cannot be dismissed. IDAs may have great potential to boost savings and asset accumulation for at least some poor people.

Saving Performance

How was saving performance in ADD? The glass can be viewed as half-empty or half-full. If half-empty, we can ask why participants—at the current pace—would not take full advantage of their match eligibility but rather would leave one-third of potential match dollars "on the table."

If half-full, we can say that two-thirds is a high rate. As a comparison, about three-fourths of IRA contributors take full advantage of that program, and only one-third reach the contribution limit in each of three straight years (Bernheim, 1997). Thus, many non-poor participants in subsidized-savings programs also leave tax benefits "on the table."

Amount of Accumulation

Are the assets accumulated in IDAs enough to make a difference? To give perspective, median liquid assets (non-IDA bank accounts) for participants in ADD at enrollment were $125. Median illiquid assets (mostly homes and cars) were $1,200, debt was $1,335, and net worth was $100. At the median savings level ($17.96 per month) and with the median match rate (2:1), three years in an IDA program would yield $1,940 in asset accumulation. If all IDA deposits were new savings, then IDAs would increase the net worth of the typical participant by about 1,800 percent. Even if all IDA deposits were asset shifts, IDAs would increase median net worth by about 1,200 percent.

For the non-poor, a few hundred dollars—or even a few thousand dollars—may not seem like enough to make a difference. Data on matched withdrawals in ADD, however, suggest that participants do use IDAs to purchase assets expected to have high returns and that mark key steps in the life course. Perhaps more important, participants in qualitative components of the evaluation of ADD say that their asset accumulations have changed their outlooks for the better. Perhaps what matters is not only the amount of accumulation but also the process (and simple existence) of accumulation. IDAs aim not only to spark savings but also to develop savers.

New Savings versus Asset Shifts

Did participants in ADD shift assets into IDAs? The data from MIS IDA cannot give a definitive answer, but we do know that some people shifted assets and that some deposited new savings. Data from Moore *et al*. (2001 and 2000) suggest that most participants worked more in the household (for example, they ate out less often or shopped more carefully for food) to come up with new savings. Also, about a third said that they worked more hours in the labor market. The data also suggest that many participants shifted assets: one-third said that IDAs made them less likely to save in other forms, 20 percent used debt to fund IDAs, and 17 percent decreased maintenance of non-IDA assets. Most IDA deposits probably came from both new savings and shifted assets, but the importance of each in the mix is unknown.

Matched Withdrawals

MIS IDA recorded the following results on matched withdrawals in ADD through June 30, 2000:

- About 13 percent of participants had taken a matched withdrawal.

- As participants accumulated larger balances through time, the incidence of matched withdrawals increased. About 9 percent of participants had a matched withdrawal by their 12^{th} month, and 27 percent had one by their 24^{th} month.

- Most participants used matched withdrawals for home purchase (24 percent), microenterprise (24 percent), or post-secondary education (21 percent). All programs in ADD match these three uses, and some also match other uses.

- Among those who had not made a matched withdrawal, most planned for home purchase (57 percent), microenterprise (18 percent), or post-secondary education (15 percent).

At least some participants in ADD saved and built assets through matched withdrawals. It is too soon to know how many will eventually make a matched withdrawal, but probably most will.

Matched Uses

What uses of IDAs are best? Beyond the three central uses of home purchase, post-secondary education, and microenterprise, possible uses include retirement, job training, home repair, computer purchase (for access to information) and car purchase (for access to employment). There are strong ideological and political positions for and against certain uses. As researchers, our view is that the range of uses should be based on empirical evidence. Which uses lead to the greatest improvements in well-being? Data from MIS IDA cannot tell us, but the experimental-design component of the evaluation of ADD should reveal something about the relative effects of matched withdrawals for the three central uses.

For policy, the choice of uses for IDAs is more problematic. It might be better to allow just a few types of uses at first and then to add new ones slowly and carefully. In policy matters, it is easier to give than to take away; once a use is allowed, it will be difficult to disallow.

Deadlines. Unlike subsidized-savings programs for the non-poor, ADD imposes deadlines for matched withdrawals, beyond which participants will lose access to matches. If the goal is to improve the well-being of the poor in the long term, however, then these time limits are not optimal. Some participants might be content just to save without a specific purchase in mind, and it is not clear how they would benefit if forced to make a matchable purchase in a narrow time frame. Limits on funds dictate time limits on ADD, but a better design would allow accumulation for as long as participants wish.

Some people—and some IDA staff—see IDAs as short-term savings instruments. But this was never the intent; it is merely an artifact of the nature of a policy demonstration. The policy goal should be to allow people to save in IDAs until they decide that they are ready to make a matched withdrawal. The transformation of IDAs into a short-term savings program seems unfair and paternalistic; for example, public policy for 401(k) plans does not state that people lose access if they miss an enrollment deadline or if they suspend contributions for long periods.

Exit

Data from ADD through June 30, 2000, suggest that saving is sometimes difficult for at least some of the poor, even in the context of the supportive institutional structure of IDAs:

- About 16 percent of participants (383) exited the program without a matched withdrawal.

- Given exit patterns in ADD so far, 11 percent of participants will exit by their 12th month, and 16 percent will exit by their 24th month.

Saving will never be easy for poor people, and some exits are inevitable, but better policy and program design may help to reduce exits. Recommendations include:

- A policy of universal access to IDAs. The poor relocate more than the non-poor, and widespread access would ensure that the poor do not leave IDAs behind when they move.

- Program designs that do not kick out participants who save low amounts or who make infrequent deposits. If the goal of IDAs is long-term improvement in well-being, then it makes little sense to cut off access precisely to those for whom saving is most difficult. Not all people can save the same amount in the same length of time, but this does not mean that low savers would not benefit from greater access to institutionalized savings mechanisms.

Unmatched Withdrawals

The frequency and amount of unmatched withdrawals, coupled with their high cost in terms of lost matches, suggests that saving is difficult for at least some participants:

- About 37 percent of participants made an unmatched withdrawal from matchable balances.

- About 25 percent of matchable balances were removed in unmatched withdrawals.

Changes in policy and program design might help to reduce unmatched withdrawals:

- Staff involvement to help participants to solve problems that lead to unmatched withdrawals.

- A savings account, labeled for emergencies, provided alongside the IDA. Even if participants do not save more in the two accounts together than they would in an IDA alone, the mere existence of the second account (and its label) may help to preserve (and increase) IDA balances if it encourages participants to see IDAs as long-term savings.

Of course, these strategies would affect program costs. Different support structures should be studied to assess both costs and benefits.

Costs

Data from MIS IDA on program costs are imperfect and probably overstated (and costs will likely fall through time as programs grow in size and experience, and as programs incur less costs for start-up, evaluation, policy involvement, and technical assistance to other IDA programs), but the following figures are likely "in the ballpark" for ADD through June 30, 2000:

- With matches excluded, program expenses were $70.38 per participant-month.

- Seen another way, program costs were $2.77 per $1 of net deposits.

- Costs in ADD decreased with time, from $117.58 per participant-month through June 30, 1999, to $43.66 per participant-month from July 1, 1999 to June 30, 2000.

Is this cheap or expensive? We do not yet know. If benefits are large, then the costs of IDAs could be a good investment. However, it seems likely that, regardless of potential benefits, these program costs are too high to take IDAs "to scale" with millions of participants.

This presents a dilemma: most costs in IDA programs are for staff salaries, and participants in the qualitative components of the evaluation of ADD say that the service-intensive features of IDA programs (for example, financial education and contact with staff) improve outcomes. The challenge is to identify which aspects of program design have benefits in excess of costs and to set aside the others.

As for going to scale, it seems likely that if IDAs are someday to reach millions or tens of millions of people, then they will run as a simple, minimum-service, minimum-cost system. As a complement to this large and simple IDA system, states, local governments, foundations, community organizations, corporations, and private citizens may provide additional IDA-related services and funding through many different strategies, sometimes operating very intensively. These complementary IDA programs would be integrated into the larger IDA system in that they would work with the same set of financial institutions and IDA instruments, but the more service-intensive tier would provide additional financial education, encouragement, and/or other services. Competition in local "social markets" would determine the level of funds for more service-intensive IDA programs in particular communities and with particular populations. Despite higher costs, if intensive IDA programs prove worthwhile, they could become widespread. Thus, a likely outcome is a "mixed system" of simple public IDA policy and more intensive, community-based programs, funded from multiple sources (Sherraden, 2000).

The ADD Population

Are participants in ADD like others at or below 200 percent of the poverty line? The answer matters because the outcomes from ADD may hold only for a small, program-selected, and self-selected segment of the low-income population.

Compared to the U.S. low-income population, ADD participants are better educated, more likely to be employed, and more likely to have a bank account. This pattern reflects the explicit targeting of programs in ADD to the "working poor." Participants in ADD are also more likely to be female, African-American, and never-married. This pattern reflects the populations served by the community-development, social-service, and housing organizations in ADD.

Participants in ADD are both program-selected and self-selected. We believe that program-selection dominates and that even very poor people can save in IDAs. An important policy question is who would enroll in IDAs if all low-income people were eligible. Unfortunately, the data from ADD cannot answer this question.

Program Characteristics and Savings Outcomes

How were the institutional characteristics of programs associated with savings outcomes? The links matter because policy can affect institutional structure. The regression results discussed

below control for a wide range of program and participant characteristics. We look at three factors that, according to institutional theory, should affect saving performance:

- *Match rate*s in ADD range from 1:1 to 7:1. Higher match rates have large, strong links with lower risk of unmatched withdrawals and with lower risk of exit. Match rates, however, are not associated with the level of savings (AMND). We believe that these estimated associations are due mostly to institutional factors, but economic factors, two-way causation, and censored data also matter to some unknown extent.

- The *monthly savings target* averaged $43 in ADD, and AMND was 67 percent of the target. Higher targets were strongly linked with large reductions in the risk of unmatched withdrawals and in the risk of exit. Higher targets were also strongly linked with higher AMND. Three factors may explain this. First, institutional theory predicts that participants may change match caps into goals and thus save more when presented with a higher cap. Second, AMND is censored at the match cap. Third, programs may have assigned higher targets to groups expected to be high savers. Censoring and two-way causation may induce a positive correlation between the savings target and savings, even if the target *per se* has no effect. We do not know the relative importance of these three factors.

- *Financial education* is required of all participants in ADD. On average, participants had attended 10.5 hours of general financial education. Each hour up to 12 was associated with large increases in AMND, but hours after that had little effect. The data on financial education are far from perfect (for example, we do not observe content or quality of classes). If the results here are replicated in future research, however, then they have a simple, clear, and important policy implication: financial education improves saving performance, and shorter courses may be just as effective as longer courses.

Unobserved characteristics (both of programs and of participants) at a given program are strongly correlated with savings outcomes. For example, AMND is $51 higher at the ADD/AFIA site at CAAB than at the ADD/AFIA site at CVCAC, observed factors constant. We believe that this reflects differences in programs more than differences in participants.

In sum, many signs suggest that the institutional structure of IDAs matters for saving, perhaps particularly among the poorest. We have taken some first steps to identify these institutional paths in theory (Beverly and Sherraden, 1999; Chapter 1), and we present empirical evidence from ADD in this report. Both theoretically and empirically, however, we have only scratched the surface of an area of knowledge that requires greater development. ADD may serve to spotlight the effects of institutions on saving, particularly among the poor, but more thought and research is required if this knowledge is to inform public policy and program design. Do the poor use IDAs because of the high rate of return (through the match), because of the social and psychological incentives and opportunities (through staff and peer support and through the message that assets matter even for the poor), and/or because of the opportunities to constrain choices (through regular savings goals and implicit penalties for unmatched withdrawals)? Probably all of these institutional aspects matter, but we do not know the importance of each one.

Participant Characteristics and Savings Outcomes

How were participant characteristics linked with savings outcomes in IDAs? We ask whether IDAs are better suited to some people because IDAs might be targeted or universal. The estimates below control for a wide range of program and participant characteristics and pertain not to people eligible to enroll but rather only to people who did enroll. The descriptive data below come from the most recent record in MIS IDA; to avoid issues of two-way causation, the regression results use the at-enrollment record.

- *Gender*. About 80 percent of participants in ADD were female. Gender was not associated with any savings outcomes.

- *Race/ethnicity*. About 47 percent of participants in ADD were African-American, 37 percent Caucasian, 9 percent Hispanic, 3 percent Native American, 2 percent Asian-American, and 3 percent "Other." Average AMND for all groups was at least $19.50, but differences between groups were large. For example, compared with Asian Americans, average AMND was $10.58 less for "Other," $11.62 less for Hispanics, $12.77 less for Caucasians, $20.82 less for African Americans, and $22.30 less for Native Americans. Thus, although IDAs do increase inclusion in access to institutionalized savings mechanisms, and although IDAs do decrease relative racial/ethnic gaps in wealth, they are not a panacea for absolute racial/ethnic gaps in wealth.

- *Employment.* Because many programs in ADD target the "working poor," most participants are employed; 78 percent worked full-time or part-time. Employment status was not significantly associated with any measure of savings outcomes.

- *Education*. Compared to the general low-income population, participants in ADD had more education. About 85 percent completed high school, and 24 percent had some type of college degree. This reflects how programs in ADD target the "working poor." Education was not linked with exit, but AMND was highest for people with 4-year college degrees.

- *Receipt of public assistance*. About 50 percent of participants received some type of public assistance at or before enrollment. Receipt at enrollment did not affect savings outcomes.

- *Income*. On average, the income of participants in ADD was 111 percent of the poverty line (median 100 percent). About 88 percent were below 200 percent of poverty. Income was not strongly linked with any savings outcomes. The very poor, however, saved a larger share of their income than the less-poor. The permanent-income hypothesis of economic theory would not predict this. Possible explanations include institutional factors, censored data, and measurement error. We believe that institutional factors matter most and that they may be strongest for the poorest.

- *Insurance coverage*. About 51 percent of participants in ADD had health insurance, and 31 percent had life insurance. Health insurance did not have a significant link with any savings outcomes. Life insurance was not linked with AMND, but it was correlated with a reduced

risk of exit and of unmatched withdrawals. Perhaps unobserved factors that affect savings—such as long-range plans or financial sophistication—are also linked with life insurance.

- *Asset ownership*. Participants who owned assets at enrollment (checking accounts, homes, or cars) had greater savings, less risk of exit, and less risk of unmatched withdrawals. They may have had unobserved characteristics correlated both with past savings and with future savings, and/or they may have had more assets to shift.

The "Working Poor"

Some people may worry that access to IDAs would harm the poorest because, with few resources, saving would cause hardship. Should IDAs be offered only to the "working poor"?

Indeed, most of the IDA programs in ADD chose to target the "working poor." Was this a good choice? Perhaps. The "working poor" did save in IDAs. Current receipt of public assistance, however, was not linked with savings outcomes. Likewise, income was not strongly related with savings outcomes. The poorest saved less than others, but not because of their low income; in fact, the very poor saved a larger share of their income than the less-poor. ADD suggests that, at a minimum, inclusion of the very poor in access to IDAs may make sense. As far as we know, IDAs are effective even for people below the poverty line. Of course, evidence from ADD pertains only to people who enrolled and not to people eligible to enroll, but the ability of the poorest to save in IDAs deserves a better test than it has yet received.

Race/ethnicity

Results by race/ethnicity are important. Foremost, enrollees in ADD from all groups saved in IDAs. The large gaps for African Americans and Native Americans, however, are troubling. On average, people in these groups hold little wealth relative to Caucasians. IDAs in ADD did not make this profound inequality worse. Indeed, if all low-income African Americans and Caucasians were to save in IDAs as they did in ADD, then the ratio of net worth between the groups would improve a lot. Nonetheless, unequal savings outcomes for different groups represent lost potential for asset building, particularly for African Americans and Native Americans. This pattern is unacceptable. IDA research should ask diligently why it occurs and, more important, what might be done to narrow the gaps.

Toward the Future

Although the MIS IDA data for ADD are suggestive in a number of areas, they are not definitive. We do not yet know much about *how* or *why* the poor save in IDAs, although data from the qualitative components of ADD have begun to shed light on these questions. Also, these quantitative data do not say whether the poor save more with IDAs than they would otherwise.

The evaluation of ADD includes multiple methods to address questions which data from MIS IDA cannot answer. For example, in-depth interviews with participants aim to learn how they perceive IDAs and their advantages and disadvantages. The goal is to learn how and why the poor save in IDAs, in their own words, and to tease out qualitative social and psychological

effects. Often, the interviews seek to understand, confirm, or disprove the preliminary results from MIS IDA data.

The experimental-design component of ADD will test the impact of IDAs on savings, asset accumulation, and a wide range of social and economic outcomes through a longitudinal survey of people with access to IDAs and of people without access. This social experiment is innovative in its focus on saving by the poor and in its use of a survey instrument crafted to measure "asset effects" on world views and on behaviors that go beyond financial outcomes.

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Appendix A
The Evaluation of ADD: Purpose, Methods, and Progress

The American Dream Demonstration (ADD) is the first systematic evaluation of IDAs. Its purpose is to find out whether IDAs are successful, in what ways, and for whom. Because IDAs are new and because there is much to learn, evaluation is central to the purpose of ADD.

The ADD evaluation is multi-faceted; indeed, it may be one of the most thorough and comprehensive evaluations of a social or economic policy demonstration. CSD has designed the evaluation with the advice of an expert Evaluation Advisory Committee. The evaluation uses multiple methods (Sherraden, *et al*., 1995), each with a different purpose, and the evaluation will take place over the course of seven years (1997-2003). These multiple methods are designed to look at ADD from as many perspectives as possible and to gather timely data as the demonstration progresses in order to inform the development of IDA policy and of programs outside of ADD (Table A.1).

Purposes of the Evaluation

The ADD evaluation is intended to yield information in the following areas:
- An answer to the question: Do IDAs work?
- Lessons about the effectiveness of different designs and practices for IDA programs.
- Models to guide state and federal IDA policy.
- Knowledge about saving and asset accumulation by the poor.

Features of the Evaluation

Elements of the design of the evaluation include:
- Guidance from an expert Evaluation Advisory Committee.
- Research designs that follow as much as possible from theoretical statements and that explicitly seek alternative explanations.
- Multiple methods of evaluation, each designed for different purposes.
- Analyses that are based insofar as possible on tests of hypotheses but that also allow for the emergence of unanticipated findings.

Research Questions

The ADD evaluation seeks answers to the following questions (Sherraden, 1999a):
- What impedes or facilitates the start-up and implementation of a successful IDA program?
- What are useful design features for an IDA program?
- What is the pattern of saving by participants in an IDA program?
- What affects saving behavior by participants in an IDA program?
- What do participants use IDA savings for?
- What are the impacts of IDAs for participants on asset accumulation and life goals (for example, education, home ownership, and self-employment)?

- What are the social, psychological, and economic effects of asset-holding for IDA participants and their families?
- What is the net financial return of an IDA program to participants and to society?
- What are the community-level effects of an IDA program?

Research Methods

The ADD evaluation uses eight research methods:

- Assessment of program start-up and implementation.
- Monitoring of on-going program and participant data through MIS IDA.
- Case studies of participants.
- Cross-sectional survey of participants.
- In-depth interviews with participants.
- Longitudinal survey of participants and of a control group within an experimental design.
- Assessment of effects at the community level.
- Financial benefit-cost analysis.

Table A.1 Research Methods in ADD

Research Type	Purpose	Method	Analysis	Evaluator	Comments
Assessment of Program Implementation	To describe IDA programs-as-implemented so that different designs can be usefully compared and communicated as lessons.	Case studies during years 1 and 2 using program records, guided narratives, interviews, and focus groups of staff and participants.	Pattern matching and time-series comparisons.	CSD	Two-year study; completed data collection in March 1999.
Monitoring On-going Program and Participant Data in MIS IDA	To track program-level data and to collect individual-level data on savings and personal characteristics for all participants.	ADD programs use MIS IDA to collect data on participants at enrollment, on monthly account statements, and on monthly program inputs and outputs.	Statistical analysis for ADD as a whole and each program.	CSD	Collect data annually across four years of demonstration, and perhaps beyond.
Case Studies of Participants	To provide biographical context.	Multiple interviews in the course of two days in the homes of 16 participants.	Qualitative-analysis program.	CSD	Report completed.
Cross-sectional Survey of Participants	To assess saving behavior and outcomes for participants at a point in time.	Fixed-format survey with 298 current participants and 26 former participants.	Statistical analysis.	CSD	Report completed.
In-depth Interviews with Participants	To add detail, examples, and understanding to quantitative results from fixed-format surveys.	Purposeful, guided, open-ended interviews with 62 members of the treatment group in the experimental design and with 26 members of the control group.	Qualitative-analysis program.	CSD	Year 3 data collection completed.
Longitudinal Survey of Participants and of a Control Group within an Experimental Design	To compare savings and outcomes for people with and without access to IDAs.	Of 1,103 qualified applicants at one ADD program, 537 were randomly assigned to a treatment group with access to IDAs and 566 were assigned to a control group. All were surveyed just before assignment. Follow-up surveys will take place 18 months and 42 months after assignment. CSD designed and pre-tested the questionnaire; Abt Associates revised the questionnaire and collects the data.	Statistical analysis within a randomized treatment/control framework.	Abt Associates	Abt Associates will analyze and report on basic impacts. CSD will analyze and report on questions regarding saving behavior and the effects of asset accumulation.
Assessment of Effects at the Community Level	To assess community impacts such as improved neighborhood conditions and civic engagement.	*Method one*: Assess changes in social indicators and visual appearances. *Method two*: Evaluate community engagement through surveys of individuals.	*Method one*: Pre-program and post-program differences with a comparison community. *Method two*: Statistical analysis.	Research consortium in Atlanta CSD	Assessment in Atlanta. CSD will analyze survey results.
Financial Benefit-cost Analysis	To estimate the financial effects of an IDA program from the perspectives of different groups of stakeholders.	Identify cash flows linked with IDAs for participants and society with data from program administrators, funders, MIS IDA, and the longitudinal survey.	Financial benefit-cost analysis.	CSD	Baseline program-cost study for first 14 months completed. Further estimates will be done through the fifth year of the experimental design.

Progress of the ADD Evaluation

Assessment of program start-up and implementation. Every six months for the first two years, IDA programs completed an open-ended "guided narrative" that assessed many aspects of program implementation and administration. After reviewing this information, CSD conducted face-to-face interviews with representatives from each of the 13 host organizations. The four rounds of guided narratives and interviews were completed in September 1997, March 1998, October 1998, and March 1999. Deborah Page-Adams of the University of Kansas, a CSD faculty associate, led the assessment team. Ed Scanlon of the University of Washington in Seattle and a CSD faculty associate, and Freda Bady and Lissa Johnson of CSD helped to conduct the interviews. A report on the first year of implementation is part of the *Start-Up Evaluation Report* (Sherraden *et al*., 1999). A final implementation report is forthcoming.

Monitoring on-going program data through the Management Information System for Individual Development Accounts (MIS IDA). The *Start-Up Evaluation Report* (Sherraden, *et al*., 1999) reflects data collected from Version 1.0 of MIS IDA through June 30, 1998. *Saving Patterns in IDA Programs* (Sherraden, *et al.*, 2000) reflects savings data and personal characteristics from Version 2.0 through June 30, 1999. This report reflects data from Version 3.0 through June 30, 2000. The next monitoring report will use data through December 31, 2001.

Case studies of participants. Case studies are like in-depth interviews, but they are more extensive. They sought richer biographies of participants and of the ways in which IDAs have affected their lives. Furthermore, cases can be followed through time via multiple interviews. Both successful and unsuccessful IDA participants were interviewed. The purposes of the case studies were to inform the in-depth interview process as well as to bring detail and life to the quantitative data. Margaret Sherraden of the University of Missouri and a CSD faculty associate, Karen Edwards and Freda Bady of CSD, and Courtney Everson and Philip Hong conducted multiple interviews with each of 16 participants in ADD programs in rural Vermont, Washington, D.C., Chicago, Kansas City, and San Francisco.

Cross-sectional survey of participants. Because the evaluation of ADD seeks to inform the design of programs and policies even before ADD ends and because experimental-design data that could show IDA impacts will not be available until Fall 2001, CSD conducted a cross-sectional survey of participants in some of the non-experimental programs. This brief, snap-shot survey asked participants about IDAs, saving behavior, and the effects of asset accumulation. Esther Cho of CSD, Sandy Beverly of the University of Kansas and a CSD faculty associate, and Michael Sherraden of CSD prepared and revised the survey instrument; it was pre-tested in May 1999 at one IDA program, and administered at seven other IDA programs in July-September 1999 by Amanda Moore and Margaret Lombe of CSD. The research report has been completed (Moore *et al*., 2001).

In-depth interviews with participants. The instrument for the in-depth interviews was designed by Margaret Sherraden of the University of Missouri and a CSD faculty associate, and it was tested with IDA participants at a non-ADD IDA program. CSD consulted with Kathy Edin of the Evaluation Advisory Committee in the design. A first round of in-depth interviews

with 62 members of the treatment group and with 26 members of the control group were completed by a team led by Amanda Moore of CSD in July and November of 2000.

Longitudinal survey of participants and of a control group within an experimental design. The experimental design has been implemented at CAPTC Large-scale, with survey data from 537 participants in the treatment group and 566 people in the control group collected by Abt Associates with a questionnaire initially developed by CSD and then revised by Abt. Baseline data (Wave 1) were collected just before the random assignment of qualified applicants from October 1998 through Fall 1999. In Wave 2, members of the treatment and control groups are interviewed 18 months after assignment. Wave 2 began in May 2000 and will continue through June 2001. In Wave 3, treatments and controls will be interviewed 42 months after assignment.

Assessment of effects at the community level. No program in ADD concentrates a large number of IDAs in a limited, identified geographic area. Without a high concentration of IDAs, community-level effects might be too small to measure, so CSD has reached an agreement with the Atlanta United Way to have a community-level assessment conducted in a place where IDAs for homeownership are being concentrated as a neighborhood-revitalization strategy. James Emshoff, a researcher at Georgia State University, leads an evaluation team that includes other researchers with experience in community-level evaluation from Emory University and from The Atlanta Project. Support for costs comes from CSD, from the Atlanta United Way, and from Annie E. Casey Foundation neighborhood-research funds.

Financial benefit-cost analysis. Mark Schreiner (2000b) has completed a benefit-cost framework to guide data collection and analysis on costs and impacts from the experimental design. Data will be collected throughout the demonstration, and final analysis and reporting will take in the fifth year of ADD. An analysis of costs for the first 14 months for IDAs in the experimental design has been completed (Schreiner, 2000a).

Appendix B
Data, MIS IDA, and Methods

This chapter discusses the data and methods used to analyze saving behavior in ADD. The goal is to help readers to make informed judgements about how best to use the results.

Data

MIS IDA

Program staff collect data for the evaluation of ADD with the Management Information System for Individual Development Accounts (MIS IDA). MIS IDA also helps programs to manage the logistics of IDAs. CSD anticipated the need for MIS IDA, designed and wrote the software, and now distributes and supports it.[1]

MIS IDA provides management tools such as account statements, mailings, and more than 30 reports. It also generates a comprehensive data base on program characteristics, participant characteristics, and enrollments, deposits, and withdrawals. Moreover, with MIS IDA in place, an IDA program can track its own performance, and the data base facilitates external evaluation. MIS IDA is used in 40 states and in the District of Columbia.

CSD identified the need for a management-information system in 1995. In 1996, we put together a national team to identify the types of data that such a system should collect. Version 1.0 of MIS IDA was released in mid-1997, and Version 2.0 was released in 1998. Version 3.0, released in January 2000, was used to collect the data in this report. Table B.1 lists selected fields collected in MIS IDA Version 3.0.

Data Quality

CSD also developed a complementary software program—MIS IDA QC—as a quality-control tool for researchers and IDA programs to check the accuracy of data in MIS IDA. Programs in ADD received reports from MIS IDA QC in January 2000, and they received the software in May 2000. To ensure clean data, CSD and the programs spent several person-months doing cross-checks for data-entry errors, missing values, and accounting inconsistencies. Programs were asked to correct missing or inconsistent data. This extensive process significantly improved the quality of data from ADD.

IDA staff record five types of data in MIS IDA: account-structure parameters at the start of the program, socio-economic data on participants at enrollment, monthly cash-flow data from account statements, monthly inputs and expenses, and intermittent events such as class attendance and exit.

[1] Hinterlong and Johnson, 2000.

Table B.1 Selected Data Collected in MIS IDA Version 3.0

Characteristics of Programs
• Age of host organization
• Type of financial institution(s)
Funding Partners of Programs
• Type of organization
• Matchable uses
• Starting and ending dates of partnership
• Amount and type of contribution
Account Structure for Programs
• Frequency of account statements
• Number of signatures required for withdrawals
• Penalties for unmatched withdrawals
• Matchable uses
• Wait period(s)
Inputs and Costs of Programs
• Types of marketing activities
• Salary expenses (includes benefits)
• Non-salary expenses (consultants, rent or mortgage, equipment, utilities, supplies, travel, and other)
• Hours of salaried staff of the IDA program
• Hours of volunteer staff
• Hours of staff of partner organizations
Financial Education
• Hours of general financial education offered and required by a program
• Hours of asset-specific education required by a program
• Hours of general financial education attended by a participant
• Hours and types of asset-specific education attended by a participant
Enrollment of Participants
• Social Security number
• Name and address
• Name and address of relative
• Enrollment date
• Date of exit
• Reason for exit
• Previous relationship with host organization
• Referral from partner organization
Demographics of Participants
• Gender
• Year of birth
• Urban/rural residence
• Marital status
• Number of adults in household

Demographics of Participants *continued*
• Number of children in household
• Race/Ethnicity
• Education status
• Employment status
Income and Public Assistance of Participants
• Monthly gross income (wages, government benefits, pensions, investments, self-employment, child support, gifts, and other)
• Former TANF or AFDC status
• Current TANF status
• Current food-stamp status
• Current SSI/SSDI status
Assets, Liabilities, and Insurance of Participants
• Assets (passbook savings, checking, home, car, business, land or property, investments)
• Liabilities (home, car, business, land or property, family or friends, household bills, medical bills, credit cards, student loans)
• Insurance (health, life)
Account Data for Participants
• Number of bank account
• Name of financial institution
• Date account opened and date closed
• Funding partner(s)
• Use of direct deposit
• Type of match-cap structure
• Annual match cap
• Lifetime match cap
• Match rate
• Time cap
Periodic Deposits and Withdrawals by Participants
• Starting and ending balance
• Number and amount of deposits
• Number and amount of withdrawals
• Amount of service fees
• Amount of interest
Matched Withdrawals by Participants
• Use of withdrawal
• Vendor name and address
• Withdrawal date
• Amount withdrawn
• Amount of match

The cash-flow data from MIS IDA are probably the best data (and perhaps the only data) that exist on high-frequency saving behavior by the poor in any subsidized-savings program. This report centers on this data. We know that the cash flows are accurate and complete because they come from records from depository institutions and satisfy accounting identities.

Data Caveats

The staff members of IDA programs are not full-time researchers, and, despite their consistent commitment to accurate data and their strong support for the evaluation as a whole, quality varies among programs and among types of data. Most time-constant demographic variables are accurate. After ADD started, however, some questions were added to MIS IDA. Programs went back and asked most participants the new questions, but they did not ask for the data as of enrollment.[2] Also, answers were difficult to obtain from people who had already left ADD.

As in all surveys, data on income, assets, and liabilities are measured with error. Participants often do not know these values, especially for non-financial assets such as homes or cars. MIS IDA asked for income at the household level but for assets at the individual level, and we do not know how participants reported jointly owned assets. Some people may have understated income or assets in the belief that this would increase their chances of acceptance into the means-tested program.

Account-structure parameters in MIS IDA may not always match the rules used in the field. This might result from staff turnover, because programs did not think much about some aspects of account structure (such as the time cap) until after they started, and/or because programs changed the structure of accounts but did not record the change in MIS IDA.

We cannot check whether program staff recorded all intermittent events. Furthermore, data on inputs and costs are measured with error. Most IDA programs in ADD are not distinct cost centers within their host organizations, and few explicitly track the hours spent on IDAs by employees, volunteers, or partners. Most programs have no formal system to allocate expenses (for example, rent, overhead, and salaries and fringe benefits) between the IDA program and other programs run by the host.[3] Cross-checks on this data are difficult.

Summary

On the whole, the ADD data are probably the best on high-frequency savings by the poor in a subsidized-savings program. Like all data, however, they are imperfect.[4] We would be remiss to allow the reader to believe otherwise. Of course, most data sets have similar imperfections. This report is perhaps unusual only in that it discusses these issues and how they might affect the results.

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[2] Even if the questions had been asked retrospectively, it would have been difficult for participants after enrollment to give answers based on their remembered at-enrollment state.

[3] Because the two collaboratives work with several member organizations that all incur costs without a central system of accounting, their data on inputs and expenses are omitted.

[4] Schreiner (2000c) and other chapters in this report discuss other data issues.

Methods

Population. *Participants* are defined as enrollees in ADD with at least one account statement in MIS IDA as of June 30, 2000.[5] The report looks at participants, not at people eligible to be participants. The results pertain to saving behavior of people who choose to enroll in an IDA program. These people probably expect greater net benefits from IDAs than people who do not choose to enroll. Because of this self-selection, the average participant probably saves more and has more positive outcomes than would the average person eligible to participate. The evaluation of ADD looks at behavior and impacts for participants, not for eligibles, although we would like to understand behavior and impacts for both groups. We hope that future research will be able to ask about eligibles.

Time frame. One policy-relevant research question is how the poor would save if they had permanent access to IDAs. We cannot address this question because ADD has time limits. Another useful question is how the poor would save if they had access to IDAs for the full length of ADD. We cannot address this question yet because ADD has not ended. This report can address only questions about programs with designs similar to ADD and at similar points in the project life cycle. Such limitations are the norm in policy demonstrations. The questions that we are able to ask are still useful.

This report asks about saving behavior only while participants are active. It does not look at months after the start of ADD but before enrollment, nor at months after exit or after graduation but before the end of ADD. For some purposes, we would like to know about behavior in all months of eligibility. This would capture the effects of the timing of enrollment, of the timing of breaks and restarts in saving, and of the timing of matched and unmatched withdrawals.

Two-way causation. A key goal of this report is to look at how saving behavior varies with aspects of institutional design (for example, the match rate or the match cap). For practical reasons, ADD did not randomly assign design attributes to participants. Instead, each IDA program designed its own rules and account structures.[6] In some cases, programs may have shaped institutional structures in response to their expectations for saving behavior by members of their intended target groups. This means that rules affected saving behavior, and anticipated saving behavior may have affected rules, even though rules were set before enrollment.[7] This two-way causation biases estimates of links between institutional design and saving behavior.[8]

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[5] ADD had 2,378 participants, excluding five people with IDAs in both Shorebank and WSEP.

[6] ADD encouraged programs to revise designs as they learned what worked. This facilitated qualitative evaluation of the effects of program design but impeded quantitative evaluation.

[7] Some programs changed rules (or want to change rules) in response to observed behavior.

[8] For example, suppose that, to equalize asset accumulation across groups, programs assign lower match rates to groups likely to save more—regardless of the match rate—and higher match rates to groups likely to save less. If expectations are correct, then higher match rates may be linked with lower savings (or have no estimated link), even if—all else constant— higher match rates increase savings. Sherraden *et al*. (2000) and Chapter 13 argue that this may have happened in ADD.

Statistical significance. This report discusses the precision of estimates of links between savings outcomes and the characteristics of participants and programs in terms of statistical significance. Results are *statistically significant* if they are not likely due to sampling variation. Larger sample sizes boost statistical significance, the confidence that an estimated relationship is "real" and does not merely reflect an unusual sample due to chance.

For example, suppose that we want to test a coin for fairness (a fair coin lands on "heads" half the time). For 100 tosses of a fair coin, we would expect about 50 "heads." Even for a fair coin, however, we would not be surprised if, because of luck, we got 60 or more "heads." But luck should even out with more tosses. If we tossed the coin 1,000 times and had 600 or more "heads," then we might wonder whether the coin is really fair. If 1,000,000 tosses produce 600,000 or more "heads," then we would strongly suspect a rigged coin.

The result of 60 or more "heads" in 100 tosses may not be statistically significant; it could happen even with a fair coin. The result of 600 or more "heads" in 1,000 tosses is more statistically significant; it is unlikely with a fair coin. The result of 600,000 or more "heads" in 1,000,000 tosses is highly statistically significant; it would almost never happen with a fair coin.

Statistical significance is expressed as a degree of confidence. For example, suppose that many people toss fair coins 100 times and that 75 percent of them get 59 or fewer "heads." If we then toss a coin of unknown fairness 100 times and get 60 "heads," we can have 75-percent confidence that it is not a fair coin.

The p-value is the complement of the confidence level, expressed as a probability rather than as a percentage. For example, 75-percent confidence implies a p-value of 0.25. If the confidence level is x percent, then the p-value is $(100–x)\div100$. The higher the confidence, the lower the p-value.

Most research calls results "statistically significant" only if the confidence level exceeds 95 percent (or, equivalently, if the p-value is less than 0.05). This is a mechanical use of statistical significance that does not substitute for thought and argument (McCloskey, 1985; Cowger, 1984). For some purposes, lower levels of confidence might suffice. For example, Chapter 8 suggests that, compared to a match rate of 3:1, a match rate of 4:1 to 7:1 is associated with a decrease in the risk of exit, with 86-percent confidence. Because the confidence level is less than 95 percent, the typical approach would label the result "statistically insignificant" and proceed as if the match rate did not affect exit. But it may make more sense to assume that match rates do not affect exit unless there is very strong evidence to the contrary. In fact, if the net benefit of a correct choice based on the assumption that match rates do affect exit is not much less than the net benefit of a correct choice based on the opposite assumption, then it is wasteful to ignore the 85-percent chance that higher matches rates decrease exit in favor of a focus on the 15-percent chance that higher match rates do not affect exit.

Statistical significance depends on both the real relationship and the sample size. With small samples, statistical significance is rare, even if the real relationship is strong. With large samples, statistical significance is common, even if the real relationship is weak. Policy should look at both statistical significance and at the size of the estimated association.

Of course, statistical significance implies only association, not causality. Furthermore, statistical significance does not imply policy significance, and statistical insignificance does not imply policy insignificance. For example, a statistically insignificant link between the match rate and exit might usefully imply that low matches are just as good as high ones.

Finally, statistical significance measures imprecision due to sampling variation; it ignores all other sources of imprecision (such as measurement error). For example, a model may assume that AMND depends only on gender, even though it really depends on a host of other factors but not on gender. If gender is correlated with the other factors, however, then the model might find a large, statistically significant (but incorrect) link between AMND and gender.[9]

[9] Some argue that this means that "statistical significance" should be reserved only for very high levels of confidence to compensate somehow for the lack of knowledge of other sources of imprecision. Imprecision from sampling variation, however, has no set relationship with imprecision from other sources. Rather than use statistical significance as a crutch, a better approach is to describe sources of imprecision and their effects as well as possible.

Appendix C
Host Organizations and Account Structures in ADD

ADVOCAP, Inc.,
Fond Du Lac, Wisconsin

Program Information

ADVOCAP, founded in 1966, is a community-action agency whose mission is to create opportunities for people and communities to reduce poverty. Operating revenues of $8.1 million support 180 staff positions and the operation of agency services across 12 departments that serve primarily rural areas in three counties. ADVOCAP provides emergency services as well as permanent solutions based on asset-development approaches. Its asset-development models include a business-development program (established 1985), a first-time home-ownership program (established 1991), and one of the first IDA programs anywhere (established 1995).

ADVOCAP runs four IDA sites. This report includes data only from the two sites in ADD, the original site and a new ADD site that runs under AFIA rules.

The IDA program at ADVOCAP targets people at or below 150 percent of the poverty line. As of June 30, 2000, the 82 participants had income that averaged 123 percent of the poverty line.

Program Design and Account Structure

ADVOCAP requires participants to take 10 hours of general financial education before they can make a matched withdrawal. Asset-specific education is offered but not required.

ADVOCAP offers a match rate of 2:1 on deposits of up to $1,000 in a 24-month lifetime match-cap structure. Thus, maximum asset accumulation is $3,000. Participants have 24 months after the 24-month time cap expires to make matched withdrawals. Matchable uses are home purchase, post-secondary education, microenterprise, home repair, and job training.

Alternatives Federal Credit Union
Ithaca, New York

Program Information

Alternatives FCU, founded in 1979, is a community-development credit union whose mission is to provide a full range of banking services and financial resources for small businesses, non-profit organizations, and under-served segments of the local community. Alternatives FCU stresses customer service and provides alternative financial options including flexible mortgages, community-lending partnerships, and a youth credit union. Alternatives FCU partnered with the

Ithaca Housing Authority's Family Self-Sufficiency Program to develop and implement its IDA program. The IDA program began in 1997, and the first account was opened in February 1998.

The IDA program at Alternatives FCU targets single parents and youth. As of June 30, 2000, the 93 participants in ADD had income that averaged 97 percent of the poverty line.

Program Design and Account Structure

Alternatives FCU requires that participants take 10 hours of general financial education before they make a matched withdrawal. Asset-specific education is required for matched withdrawals for home purchase (10 hours) or microenterprise (33 hours).

Alternatives FCU offers a 3:1 match rate, an annual match-cap structure, and a $500 annual match cap. The time cap for all ADD participants is December 31, 2001. Matchable uses are home purchase, post-secondary education, microenterprise, and home repair.

Bay Area IDA Collaborative
Oakland, California

Program Information

The Bay Area IDA Collaborative comprises 28 community-based organizations which collectively serve a significant portion of the low-income population in the San Francisco Bay area. The East Bay Asian Local Development Corporation (EBALDC), founded in 1975, is a Community Development Corporation and is the lead organization for the Bay Area IDA Collaborative. EBALDC has expanded its mission from serving the Asian-American and Pacific-Islander community to building strong communities among diverse low-income populations. Services include affordable housing, community organizing and planning, and economic development.

EBALDC runs four IDA sites; this report includes only the original site and a new ADD site that runs under AFIA rules. The non-ADD IDA sites work with Welfare-to-Work individuals in Alameda and San Francisco Counties, the Davis Street Community Center Program, and a program for home buyers through Affordable Housing Affiliation in Solano County. The two ADD sites serve low-income people of color referred by member organizations. As of June 30, 2000, the 245 participants in ADD had income that averaged 109 percent of the poverty line.

Program Design and Account Structure

EBALDC requires participants to take 10 hours of general financial education before they make a matched withdrawal. Asset-specific education is also required for home purchase (14 hours) and microenterprise (30 hours).

EBALDC offers a match rate of 2:1 in a lifetime match-cap structure with a time cap of December 31, 2001. Participants who plan matched withdrawals for post-secondary education,

microenterprise, or job training have a match cap of $600 (maximum asset accumulation of $1,800). Due to the high cost of homes in the Bay Area, the match cap is $1,920 for participants who plan matched withdrawals for home purchase (maximum asset accumulation of $5,760).

Capital Area Asset Building Corporation (CAAB)
Washington, D.C.

Program Information

CAAB is a non-profit corporation comprised of 11 community-based organizations whose goal is to bring an asset-based economic-development system to scale in the disadvantaged neighborhoods of the District of Columbia. The collaborative was created in 1997 with a mission to build capacity through a centralized, systemic approach to the implementation of IDAs in the District, to craft a collaborative fundraising strategy to minimize competition among community-based organizations, and to join forces in advocacy activities to help pass legislation for asset accumulation for low-income residents. Member organizations run IDA programs and provide services to clients.

CAAB runs two IDA sites, one an original ADD site and one a new ADD site that runs under AFIA rules. The IDA programs serve an urban population of youth and adults. As of June 30, 2000, the 153 participants had income that averaged 139 percent of the poverty line.

Program Design and Account Structure

Requirements for financial education vary among the member organizations in CAAB. Requirements average about 20 hours. Some members require completion of general financial education before an IDA account is opened, while others require only that classes be completed before matched withdrawals. On average, asset-specific requirements are 32 hours for home purchase, 20 hours for post-secondary education, and 22 hours for microenterprise.

CAAB offers match rates that vary from 2:1 to 7:1, depending on the member organization and on the planned use. Match caps also vary across member organizations, but all participants have a lifetime match-cap structure. Time caps are 24 months for most participants and up to 48 months for youth. Matchable uses for CAAB as a whole include home purchase, post-secondary education, microenterprise, and job training.

Central Texas Mutual Housing Association (CTMHA)
Austin, Texas

Program Information

CTMHA is a community-based non-profit organization whose mission is to provide affordable housing to help families to improve their lives and to pursue their dreams. Founded in 1986, CTMHA has developed 1,655 units of affordable housing in ten Central and North Texas urban-rental communities. With a staff of 27, CTMHA has created several resident-service programs for low-income tenants, including after-school and summer-youth programs, classes in computers and English-as-a-Second-Language, and the IDA program. Counseling and training are offered in both English and Spanish.

Of the four IDA sites run by CTMHA, this report includes only the two ADD sites: the original ADD site, and the new ADD site that runs under AFIA rules. As of June 30, 2000, the 128 ADD participants had income that averaged 139 percent of the poverty line.

Program Design and Account Structure

CTMHA requires that participants complete 10 hours of general financial education before they make a matched withdrawal. Participants who plan matched withdrawals for home purchase or microenterprise must also take 12 hours of asset-specific education.

CTMHA offers a match rate of 2:1 and an annual match cap of $500 within an annual match-cap structure. ADD participants have time caps of three years (a few who enrolled in December 1999 have two-year time caps). Thus, participants with three-year time caps have a maximum asset accumulation of $4,500. Deposits made after December 31, 2001, will not be matched. Matchable uses are home purchase, post-secondary education, microenterprise, and job training.

CTMHA allows participants to have more than one IDA account. These additional accounts are in the names of children or other family members. In effect, the multiple accounts increase the annual match cap for individuals. Thus, some participants have maximum asset accumulations of $9,000, $13,500, $18,000, or $22,500.

Central Vermont Community Action Council, Inc. (CVCAC)
Barre, Vermont

Program Information

CVCAC, a community-action agency founded in 1965, focuses on community-economic development and developmental family services. CVCAC provides advocacy and programmatic services for economically disadvantaged families and individuals in 56 towns in rural north-central Vermont. The 130-member professional staff provides services to about 6,000 persons annually. CVCAC has partnered with several community agencies to implement its IDA

program. The IDA program serves clients of CVCAC, clients of the Department of Prevention, Assistance, Transition, and Health Access (TANF recipients), and young adults 16-24 years old.

CVCAC runs two IDA sites, both of them in ADD, the original site and a new site that runs under AFIA rules. This report includes both sites. As of June 30, 2000, the 159 ADD participants had income that averaged 76 percent of the poverty line.

Program Design and Account Structure

CVCAC requires participants to take 16 hours of general financial education before they make a matched withdrawal. Asset-specific education is also required for home purchase (8 hours), post-secondary education (2 hours), or microenterprise (2 hours).

In the original ADD site, CVCAC offers a 1:1 match rate. If a participant receives TANF at any time during participation, then the match rate becomes 2:1. In the new ADD site, CVCAC offers a 2:1 match rate. If a participant receives TANF at any time during participation, then the match rate becomes 3:1. All participants have a time cap of December 31, 2001; deposits made after that will not be matched. The original ADD site has an annual match-cap structure with a match cap of $500. The new ADD site has an annual match-cap structure, a 24-month time cap, and lifetime match caps that range from $500 to $2,000. Matchable uses are home purchase, post-secondary education, microenterprise, and home repair.

Community Action Project of Tulsa County (CAPTC)
Tulsa, Oklahoma

Program Information

CAPTC, founded in 1973, is a community-based, comprehensive anti-poverty agency whose mission is to "help individuals and families in economic need to achieve self-sufficiency through emergency aid, medical care, housing, community development, education, and advocacy in an atmosphere of respect." Recent examples of new programs that have grown significantly in response to client demand include an affordable-housing program and an Earned Income Tax Credit program. The IDA program focuses on those who are making the effort to achieve self-sufficiency but who are not yet able to escape poverty. The IDA program targets working-poor households with children who qualify for the maximum EITC refund. Many of the IDA participants are clients of other CAPTC services.

CAPTC has two IDA programs in ADD. The first program—CAPTC Small-scale—enrolled its first participant in February 1998. The Small-scale program targets people at or below 200 percent of the poverty line. As of June 30, 2000, its 161 participants had income that averaged 128 percent of the poverty line.

The second program—CAPTC Large-scale—has an experimental design. Of 1,103 qualified applicants, 537 were randomly assigned to a treatment group with access to IDAs, and 566 were assigned to a control group without access to IDAs. (Of the 537 in the treatment group, 459 have

opened accounts.) All 1,103 qualified applicants were surveyed just before assignment, and follow-up surveys are scheduled for 18 months and 42 months after assignment. The Large-scale program targets people at or below 150 percent of the poverty line. As of June 30, 2000, the 459 participants had incomes that averaged 129 percent of the poverty line.

Program Design and Account Structure

Small-scale. The CAPTC Small-scale program requires participants to take six hours of financial education—general or asset-specific—each year. Asset-specific education is required for matched withdrawals: 5 hours for home purchase, 2 hours for post-secondary education, 16 hours for microenterprise, and two hours for retirement.

CAPTC Small-scale offers a match rate of 1:1 (2:1 for those who plan to make a home purchase). Within an annual match-cap structure, the annual match cap is $750. The time cap for all participants is December 31, 2001. Matchable uses are home purchase, post-secondary education, microenterprise, home repair, and retirement.

Large-scale. The CAPTC Large-scale (experimental-design) program requires participants to take 12 hours of general financial education, four hours of which are required prior to opening an account. Asset-specific education is also required prior to matched withdrawals: 5 hours for home purchase, 2 hours for post-secondary education, 16 hours for microenterprise start-up, and 2 hours for retirement. No asset-specific education is required for matched withdrawals used for existing microenterprises, but participants with this type of matched withdrawal must present a business plan.

CAPTC Large-scale offers a match rate of 1:1 (2:1 for those who plan to make a home purchase). The time cap is 36 months from the date of account opening, and the annual match cap is $750 within an annual match-cap structure. Thus, participants who do not plan to make a home purchase have a maximum asset accumulation of $4,500, and participants who plan to make a home purchase have a maximum asset accumulation of $6,750. Matchable uses are home purchase, post-secondary education, microenterprise, home repair, and retirement.

Heart of America Family Services (HAFS), Family Focus Center
Kansas City, Missouri

Program Information

HAFS is a 120-year-old non-profit organization dedicated to support and to strengthen families in need through information, education, and intervention. Its programs serve 60,000 people annually at more than 14 locations. The Family Focus Center is one of HAFS' community-based programs that provides neighborhood-based family support to a primarily Hispanic population in Kansas City's Westside. The Family Focus Center has partnered with other neighborhood organizations and with the University of Kansas School of Social Welfare to implement the IDA program. Counseling and training are offered in both English and Spanish. The IDA program serves the neighborhood area and clients at the Family Focus Center.

The Family Focus Center has one IDA site that serves 91 participants. As of June 30, 2000, they had income that averaged 107 percent of the poverty line.

Program Design and Account Structure

HAFS requires participants to take 45 hours of general financial education before they make a matched withdrawal. All types of matched withdrawals require asset-specific education: 12 hours for home purchase, six hours for post-secondary education, 12 hours for microenterprise, and 15 hours for retirement.

HAFS offers a match rate of 2:1 in a lifetime match-cap structure. The time cap is December 31, 2001. The match cap is $30 multiplied by the number of months between account opening and December 31, 2001, with an additional $45 for each year of participation. For example, someone who opened an account in December 1999 would participate for 25 months in three distinct participation-years with a match cap of $30·25 + $45·3 = $885. Matchable uses are home purchase, post-secondary education, microenterprise, home repair, job training, and retirement.

Human Solutions, Inc.
Portland, Oregon

Program Information

Human Solutions, founded in 1988, is a non-profit community housing organization whose focus is to provide housing and related services to homeless and low-income families in East Portland and East Multnomah County. Since 1992, the organization has purchased and developed more than 222 units of low-income housing, and it manages market-rate housing owned by others for homeless families. The IDA program serves residents of Multnomah County.

The IDA program has 122 participants. As of June 30, 2000, they had income that averaged 117 percent of the poverty line.

Program Design and Account Structure

Human Solutions requires that participants complete 8 hours of general financial education within six months after they open an account. Asset-specific education is required for all IDA uses: eight hours for home purchase, three hours for post-secondary education or job training, and 12 hours for microenterprise.

Human Solutions offers a match rate of 1:1. The annual match cap in their annual match-cap structure is $500. The time cap is December 31, 2001; deposits after that are not matchable. Matchable uses are home purchase, post-secondary education, microenterprise, and job training.

Mountain Association for Community Economic Development (MACED)
Berea, Kentucky

Program Information

In 1976, MACED was created by ten community-development organizations in Central Appalachia to provide technical assistance to community-based groups. Its core programs are business development, sustainable communities, and land and resources. The "Pathways to Prosperity" IDA program targets low-income residents of Owsley County, the poorest county in Kentucky. Several local community organizations partnered with MACED to implement the IDA program, including the Owsley County Action Team, a citizen group that participates in MACED's Sustainable Communities Initiative, and the Central Appalachian Peoples Federal Credit Union.

MACED has three IDA sites, all of which are in ADD. As of June 30, 2000, the 58 participants had income that averaged 80 percent of the poverty line.

Program Design and Account Structure

MACED requires participants to complete 12 hours of general financial (one hour of financial education each month) before they make a matched withdrawal. MACED does not require any asset-specific education. Matched withdrawals are not allowed unless net deposits equal the lifetime match cap of $360.

MACED has a lifetime match-cap structure. The time cap is 24 months. Deposits of the first group of participants to enroll are matched at the rate of 6:1; they have a maximum asset accumulation of $2,520. A second group of participants who enrolled later are matched at a rate of 1:1 for a maximum asset accumulation of $720. Matchable uses are home purchase, post-secondary education, microenterprise, home repair, and job training.

Near Eastside IDA Program
Indianapolis, Indiana

Program Information

The Near Eastside Community Federal Credit Union (NECFCU) and the John H. Boner Community Center together created the Near Eastside IDA Program. The NECFCU, founded in 1981, holds IDA accounts and is the only community-development credit union in Indiana. The Boner Center is a neighborhood community center that has provided a broad spectrum of social services since 1972. The Near Eastside IDA Program serves youth and adults who live in the Near Eastside of Indianapolis and who are in programs of the Boner Center or of NECFCU.

Near Eastside runs four IDA sites, two of which are in ADD and are included in this report. One is the original ADD site, and the second is a new ADD site that runs under AFIA rules.

As of June 30, 2000, the 191 ADD participants had income that averaged 86 percent of the poverty line.

Program Design and Account Structure

Near Eastside requires participants to complete nine hours of general financial education before they make a matched withdrawal. Asset-specific education is offered but not required.

In the original ADD site, Near Eastside offers most participants a match rate of 3:1, although some have a match rate of 1:1, 2:1, or 6:1. Within the annual match-cap structure, the annual match cap is $250, $300 or $500, depending on the funding source. The time cap is April 30, 2001; deposits made after that are not matchable. Matchable uses are home purchase, post-secondary education, microenterprise, and job training.

In the new ADD site, Near Eastside offers a match rate of 3:1. In its lifetime match-cap structure, the lifetime match cap is $500, and the time cap is December 31, 2001. Thus, maximum asset accumulation is $2,000.

Shorebank
Chicago, Illinois

Program Information

Shorebank, created in 1978, is a community-development financial institution whose mission is to increase opportunities in underserved communities by identifying and supporting investment in local assets. The IDA program is a joint effort between South Shore Bank and Shorebank Neighborhood Institute (SNI), Shorebank's non-profit affiliate. SNI's primary focus is on human and social-capital development, as well as targeted enterprise development. The program targets African Americans who live in the South and West sides of Chicago, including families who live in subsidized rental properties owned by Shorebank.

Shorebank runs three IDA sites; this report includes the two in ADD. As of June 30, 2000, the 205 ADD participants had income that averaged 118 percent of the poverty line.

Program Design and Account Structure

For both the original and new ADD sites, Shorebank requires 8 hours of general financial education before a matched withdrawal. No asset-specific education is required.

In the original site, Shorebank offers a match rate of 2:1 in a lifetime match-cap structure with a lifetime match cap of $600 (a few participants have a cap of $500). The time cap is 36 months. Thus, maximum asset accumulation is $1,800. Matchable uses are home purchase, post-secondary education, microenterprise, home repair, and job training.
In the other site, Shorebank offers a match rate of 1:1 in an annual match-cap structure with an annual match cap of $500. The time cap is 24 months. Thus, maximum asset accumulation is

$2,000. Matchable uses are home purchase, post-secondary education, microenterprise, home repair, and job training.

Women's Self-Employment Project (WSEP)
Chicago, Illinois

Program Information

WSEP, started in 1986, is a microenterprise-development organization that provides entrepreneurial training, business-development services, and financial services to low- and moderate-income women. The mission of WSEP is to increase the income and degree of economic self-sufficiency of women through a strategy of self-employment and to serve as a catalyst for the development of viable options to alleviate poverty. In 1995, WSEP started an IDA program targeted to welfare recipients; it was one of the first IDA programs. The program serves participants from the Center for New Horizons, graduates of WSEP programs, and employees of the businesses of WSEP participants.

WSEP runs three IDA sites: this report includes data only from the original ADD site and from the new ADD site that runs under AFIA rules. As of June 30, 2000, the 235 ADD participants had income that averaged 100 percent of the poverty line.

Program Design and Account Structure

WSEP requires participants to take 16 hours of general financial education before they open an IDA account. Some types of matched withdrawals also require asset-specific education: eight hours for home purchase, six hours for post-secondary education, and from 8 to 35 hours for microenterprise, depending on the experience of the participant in microenterprise.

In the original ADD site, participants at WSEP have match rates of 2:1, and a few have match rates of 5:1 or 6:1. In the new ADD site, the match rate is 2.5:1. Both ADD sites have lifetime match-cap structures. Participants in the original ADD site have lifetime match caps of $500 or $600, and participants in the new ADD site have lifetime match caps of $600. At both ADD sites, the time cap is 24 months. Matchable uses are home purchase, post-secondary education, and microenterprise.

Appendix D
ADD Evaluation Advisory Committee

Ms. Margaret Clark, Director of the Economic Opportunity Project at the Aspen Institute and of the Self-employment Learning Project, award-winning study of microenterprise programs.

Dr. Claudia Coulton, Director of the Center on Urban Poverty and Social Change at Case Western Reserve University, investigator of urban poverty and community development.

Dr. Kathryn Edin, Institute for Policy Research, Northwestern University, specialist in qualitative methods in studying low-income households, author of *There's a Whole Lot of Month Left at the End of the Money*.

Dr. John Else, Founder, Chair of the board, and Director for Consulting for the Institute for Social and Economic Development (ISED), experienced in evaluation and monitoring of microenterprise and other economic-development strategies.

Mr. Robert Friedman (liaison from ADD), Founder and Chair of the board of the Corporation for Enterprise Development, director of ADD, author of *The Safety Net as Ladder*.

Dr. Irving Garfinkel, School of Social Work, Columbia University, researcher in poverty and inequality, policy innovator, and evaluator of child-support policy.

Dr. Karen Holden, La Follette Institute of Public Affairs, University of Wisconsin, author of numerous studies on household economics and gender.

Dr. Laurence Kotlikoff, Department of Economics, Boston University, expert on intergenerational transfers, savings, and public policy, author of *What Determines Savings?*

Dr. Robert Plotnick, Daniel J. Evans School of Public Affairs, University of Washington, author of several important studies on poverty and inequality.

Dr. Salome Raheim, Director of the School of Social Work, University of Iowa, researcher on the Self-Employment Learning Project, and author of numerous papers on microenterprise.

Dr. Marguerite Robinson, Retired from Harvard Institute for International Development, expert on design and evaluation of development-finance institutions and savings in poor households.

Dr. Clemente Ruíz Durán, Director of the Post-Graduate Program in Political Economy, expert in small-scale saving and asset-based policy in Latin America and East Asia, author of more than a dozen books on economic development and social policy.

Dr. Thomas Shapiro, Department of Sociology, Northeastern University, expert on assets and race, co-author of *Black Wealth/White Wealth*.

Dr. Michael Sherraden (convenor), Director of the Center for Social Development, Washington University in St. Louis, author of *Assets and the Poor*, director of the evaluation of ADD.