The Effects of Welfare and IDA Program Rules on the Asset Holdings of Low-Income Families

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Poor Finances: Assets and Low-Income Households

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Poor Finances:
Assets and Low-Income Households

INTRODUCTION TO THE SERIES

Economic security throughout the life course is intrinsically linked to both income and asset ownership. The majority of current social policies focus primarily on income supports and social services. However, building assets can also help individuals, families, and communities expand their economic horizons.

America has a longstanding history of promoting ownership, as reflected in existing policies to promote home and business ownership, investment, and saving. New opportunities for people to save and become asset owners will likely increase the number of individuals and families able to build assets and improve the economic security of all Americans. Greater inclusivity and accessibility of traditional approaches to expanding ownership may make it easier for lower and middle income families to save. Still, while theory and evidence suggest that improved asset-based policies may promote development of low-income individuals and families, and perhaps communities and society as a whole, research in this area of asset development is in its infancy. There is still much to learn.

Poor Finances: Assets and Low-Income Households is a series of reports on poverty, asset building, and social policy. The purpose of the series is to assess the nascent state of knowledge and policy development and to synthesize recent progress in these areas. Specifically, the reports in the series will

- evaluate what is known regarding the measures, distributions, determinants, and effects of asset holding;
- develop a portrait of the assets of low-income households;
- develop conceptual frameworks for viewing assets and liabilities;
- assess the strengths and weaknesses of data sources on assets and liabilities;
- chart directions for future research;
- examine the effects of means-tested program policies on asset building; and
- inform subsequent discussions of public policy.

While this series of reports focuses on asset accumulation and asset-based policies for low-income individuals and families, the conceptual frameworks developed are not limited to low-income populations. This broad approach is an effective way to identify the overall critical issues that relate to asset holding for all populations. Where appropriate, however, various reports point out when the framework specifically applies to low-income, minority, and single-parent households. This distinction is important because these subgroups are particularly vulnerable to low asset accumulation. The definition of low-income used in the series of reports is necessarily imprecise. The reports reflect a broad literature synthesis, and definitions of low

income are not uniform across studies, surveys, or public programs. However, low incomes can be broadly thought of as affecting households in the bottom income quintiles.

This report, "The Effects of Welfare and IDA Program Rules on the Asset Holdings of Low-Income Families," examines the effects of a comprehensive set of 13 welfare, Food Stamp, individual development account (IDA), earned income tax credit (EITC), and minimum wage program rules on the asset holdings of low-education single mothers and families. Low education was used as a proxy for low income to address fluctuations in income over time. This report finds empirical evidence of an association between asset limits and IDA program rules and the asset holdings of low-education single mothers and families.

Why Assets Are Important

In describing why assets are important, it is useful to begin by distinguishing income from assets. *Incomes* are flows of resources. They are what people receive as a return on their labor or use of their capital, or as a public program transfer. Most income is spent on current consumption. *Assets* are stocks of resources. They are what people accumulate and hold over time. Assets provide for future consumption and are a source of security against contingencies. As investments, they also generate returns that generally increase aggregate lifetime consumption and improve a household's well-being over an extended time horizon.

The dimensions of poverty, and its relative distribution among different social classes, are significantly different when approached from an assets perspective, as opposed to an income perspective. Those with a low stock of resources to draw on in times of need are asset poor. This *asset poverty* may leave them vulnerable to unexpected economic events and unable to take advantage of the broad opportunities a prosperous society offers. Many studies have found that the rate of asset poverty exceeds the poverty rate as calculated by the traditional measure, which is based on an income standard. Many U.S. households have little financial cushion to sustain them in the event of a job loss, illness, or other income shortfall. Also, social and economic development of these households may be limited by a lack of investment in education, homes, businesses, or other assets. To the extent that low resource holdings limit the potential for social and economic development, understanding how those with limited assets can build up their asset base is likely to be an important policy issue.

Income and Assets in Public Policy

Outside of education, traditional social programs that assist low-income populations have focused mainly on income and social services that fulfill basic consumption needs, which have been essential to the well-being of families and children. An asset-based approach could complement this traditional approach and could shift the focus to the long-term development of individuals, families, and communities. This focus provides a broader picture of the dynamics of poverty among the low-income population.

Asset-based policy has many potential meanings. These include policies to promote the accumulation and preservation of financial wealth, tangible property, human capital, social capital, political participation and influence, cultural capital, and natural resources. While all of these meanings have value, this series of reports focuses on building financial wealth and tangible nonfinancial assets for household social and economic development.

The United States and many other countries already have large asset-based policies. In many cases, these operate through the tax and employer-based systems, so that public transfers occur via tax benefits (e.g., home mortgage interest deduction; tax breaks for contributions to a variety of retirement accounts; tax-preferred education accounts and College Savings Plans; and benefits for other emerging policies, such as Medical Savings Accounts). These asset-based policies have grown rapidly in recent years and today represent a significant proportion of overall federal expenditures and tax subsidies.

Asset Policy for Low-Income Households

Low-income individuals and families frequently do not participate in existing asset-based mechanisms. The reasons may be threefold. First, this population is less likely to own homes, investments, or retirement accounts, where most asset-based policies are targeted. Second, with little or no federal income tax liability, the low-income have little or no tax incentives, or other incentives, for asset accumulation. Third, asset limits in means-tested transfer policies have the potential to discourage saving by the low-income population. In many respects, this population does not have access to the same structures and incentives for asset accumulation. The potential of asset building to promote long-term development of low-income households motivates this series of reports. *Poor Finances: Assets and Low-Income Households* attempts to serve as a central resource that provides a comprehensive assessment and critique of the current and emerging knowledge base regarding asset building for low-income individuals and families.

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EXECUTIVE SUMMARY

Savings and assets can cushion families against sudden income losses and can bolster long-term economic gains. These savings, however, can make a low-income family ineligible for benefits from means-tested programs when they encounter economic difficulties. Most means-tested programs restrict eligibility to families with assets that fall below a set threshold, and thus, may have the unintended consequence of discouraging low-income families from saving.

In recent years, federal and state governments have implemented programs and program rules to encourage savings among low-income families. Specifically, they have relaxed asset rules for the Temporary Assistance for Needy Families (TANF) program and the Food Stamp Program (FSP), and have supported individual development account (IDA) programs. This report examines the relationship between means-tested program rules and asset holding. We examine the effects of state specific TANF, Food Stamp, IDA, EITC program rules and minimum wage requirements on low-education single mothers and low-education families' liquid asset holdings, vehicle asset holdings, and net worth.

Our analysis spans a 13 year period from 1991 through 2003, thereby capturing a time of significant change to the AFDC/TANF and Food Stamp programs, as well as the introduction of IDA programs. It also captures asset holdings during weak and strong economic times. Individual-level data for the analysis come from multiple panels of the Survey of Income and Program Participation (SIPP), and state program rules data come from a variety of sources, including the Urban Institute's Welfare Rules Database, the Center for Social Development's and Corporation for Enterprise Development's information on IDA programs, and the United States Department of Agriculture (USDA) Food and Nutrition Service (FNS).

The empirical model uses the variation across states and in the timing of different state rules to examine the relationship between 13 specific program rules and asset holdings. These program rules (defined in table 3) are

- *AFDC/TANF Program Rules*: unrestricted asset limit, vehicle asset limit, restricted account asset limit, and maximum monthly benefit for a family of three.[1]
- *Food Stamp Program Rules*: vehicle asset limit and expanded categorical eligibility.
- *IDA Program Rules*: maximum match rate, maximum amount qualified for match, and eligibility beyond welfare recipients.
- *EITC Rules and Minimum Wage Requirements*: state EITC amount, percentage of the state EITC that is refundable, the state minimum wage for federally covered categories, and the state minimum wage for non-federally covered categories.

[1] Restricted accounts limit withdrawals to only certain types of activities, such as education, homeownership, or business start-up. Unrestricted accounts do not have these restrictions and include savings and checking accounts.

We estimate fixed effect regression models to measure the relationship between the program rules and asset holdings. We estimate the models on two populations, for six asset holding outcomes, and using two different specifications of the program rules. The two populations are low-education (high school degree or less) single mother families and a broader population of all low-education families. The six asset holding outcomes are (1) presence of liquid assets, (2) value of liquid assets, (3) vehicle ownership, (4) vehicle equity, (5) net worth (excluding housing), and (6) net worth (including housing). The two program rule specifications are (1) the primary results which capture the relationship between detailed measures of state program rules and the asset holding outcomes, and (2) an alternate specification which captures the relationship between the number of years since a broad program change was implemented and the asset holding outcomes. Below we highlight the statistically significant relationships that make up the key findings from the two specifications.

Key Findings

Key findings from the primary results, which measure precise program rules, include the following:

- More generous unrestricted asset limits are not associated with increased liquid asset holdings for either low-education single mothers or families;
- More generous restricted account asset limits are associated with increased liquid asset holdings for low-education single mothers and families;
- More generous Food Stamp vehicle asset limits are associated with increased vehicle asset holdings for low-education single mothers;
- Expanded categorical eligibility in the Food Stamp Program is associated with increased vehicle asset holdings for low-education single mothers and families;
- More generous IDA program rules are associated with increased liquid asset holdings and net worth;
- A more generous state EITC amount is negatively associated with liquid asset holdings but the percentage of the state EITC that is refundable is positively associated with liquid asset holdings;
- A more generous state minimum wage for federally covered categories (i.e., covered by the Fair Labor Standards Act) is associated with increased liquid asset holdings, vehicle asset holdings, and net worth.

Key findings from the alternate specification results, which measure the number of years since broad program rules were implemented, include:

- The number of years since unrestricted asset limits became more generous (greater than $1,000) is associated with increased liquid asset holdings for low-education single mothers and families;
- The number of years since restricted asset account limits became available is positively but not statistically significantly associated with increased liquid asset holdings for either low-education single mothers or families;
- Mixed results but some evidence that number of years since both more generous Food Stamp Program vehicle asset limits and expanded categorical eligibility are associated with increased vehicle asset holdings;
- The number of years since a state-sponsored IDA program became available is associated with increased liquid asset holdings for low-education families.

Conclusions

The results of this study suggest that various state program rules adopted since the mid-1990s, especially those aimed at asset building, are positively related to low-education single mothers' and families' asset holdings. The analysis suggests that more lenient asset limits in means-tested programs and more generous IDA program rules may have positive effects on asset holdings. These results suggest that maintaining and expanding these programs may help promote asset ownership among economically vulnerable populations.

Findings from the primary model suggest that not every asset-building program rule has the same effect. For example, more generous IDA rules are positively related to liquid asset holdings and net worth and more lenient limits on restricted accounts are positively related to liquid assets, while relaxed asset limits on unrestricted accounts have no significant relationship with any type of asset holdings. The different incentive structures and program operations may produce distinct outcomes: restrictions on withdrawals and incentives which are built into IDA and restricted asset account limits may motivate low-education single mothers and families to save and help them resist the temptation to spend. Accordingly, asset-building program rules could be designed carefully to achieve policy goals.

Findings from the alternate specification, which measures the years since the more generous rules were implemented, corroborate the IDA rule findings but not the unrestricted versus restricted asset limit findings. This is the first study (known to the authors) to look at the net relationships of restricted and unrestricted asset limits. The results are suggestive, but not conclusive, that restricted account asset limits have different effects on asset building than unrestricted asset limits. Additional research on this topic could shed further light on the role that unrestricted asset limits, restricted account asset limits, and IDA programs play in asset building.

This study also shows that other non-TANF and IDA-related program rules are related to the asset holdings of low-education single mothers and families. For example, Food Stamp

Program vehicle asset limits and expanded categorical eligibility are positively related to vehicle assets and net worth. These findings suggest that potential program interactions and indirect effects of program rules on non-target populations are potentially important and could be considered further in future research.

I. INTRODUCTION

Savings and assets can cushion families against sudden income losses and can bolster long-term economic gains. These savings, however, can make a low-income family ineligible for benefits from means-tested programs when they encounter economic difficulties. Most means-tested programs restrict eligibility to families with assets that fall below a set threshold, thereby providing benefits only to those most in need. If asset restrictions have the unintended consequence of discouraging low-income families from saving, asset tests may run counter to the often cited government goal of promoting self-sufficiency.

In recent years, federal and state governments have implemented programs and program rules to encourage savings, and thus promote self-sufficiency, among low-income families. Specifically, they have relaxed asset rules for the Temporary Assistance for Needy Families (TANF) program and the Food Stamp Program (FSP), and have supported Individual Development Account (IDA) programs. Despite the potential importance of these policy changes, few studies have examined rules that limit saving and asset accumulation for government benefit recipients, and what research does exist shows mixed results. This report examines the effects of means-tested program rules on asset building and provides findings on the following research questions:

1. What are the effects of specific TANF, Food Stamp, IDA, EITC program rules and minimum wage requirements on liquid asset holdings?
2. What are the effects of specific TANF, Food Stamp, IDA, EITC program rules and minimum wage requirements on vehicle asset holdings?
3. What are the effects of specific TANF, Food Stamp, IDA, EITC program rules and minimum wage requirements on net worth?

To address these research questions, we examine several measures of asset holdings, including liquid asset holdings,[2] vehicle ownership and equity, and net worth (with and without housing equity). Our data come from the 1990, 1992, 1993, 1996, and 2001 Survey of Income and Program Participation (SIPP) panels, which provide asset data from 1991 through 2003—a period of significant change for the TANF and Food Stamp Programs, as well as the introduction of IDA programs. This time period also allows us to capture asset holdings during weak and strong economic times. The state program rules data come from a variety of sources, including the Urban Institute's Welfare Rules Database, the Center for Social Development's and Corporation for Enterprise Development's information on IDA programs, and the United States Department of Agriculture (USDA) Food and Nutrition Service (FNS).

[2] Liquid assets include checking accounts, interest-earning accounts such as savings accounts, savings bonds, IRA and Keogh accounts, and stocks.

We estimate the effect of 13 specific program rules and requirements on the asset holdings of low-education (high school degree or less) families and low-education single mothers. While our population of interest is low-income families, we use education to specify the target population, rather than income, as a way to hold the study population more constant over this time period. This is especially important given that this analysis spans a 13 year period from the early 1990s to the 2000s. With changes in the economy over time, defining the population based on income can result in significant changes to the study population over time, while defining the population based on educational attainment results in a more constant study population. In essence, we use low education to capture a more permanent measure of income status.

This paper contributes to the literature in two important ways. First, we examine a comprehensive set of 13 program rules hypothesized to affect asset holdings (e.g., welfare program rules, FSP rules, IDA program rules, and EITC rules), while most studies examine a more limited set of program rules. Second, our analysis is the first to examine both restricted and unrestricted asset account limits for TANF eligibility.

Below we begin by providing background on state program rules and a brief discussion of the relevant literature. This is followed by a description of the study population and data used for the analysis, including the individual-level SIPP data, the state-level program rule data, and the economic data. Next we present the methodology, followed by the results. The last section discusses the study's conclusions.

II. BACKGROUND

Both federal and state governments started to introduce asset-building policies for low-income households during the 1990s. Examples include the relaxation of asset limits in means-tested programs and the introduction of IDA programs. The Family Support Act of 1988 permitted states to apply to the federal government for waivers to raise the Aid to Families with Dependent Children (AFDC) program's asset limits. Without a federal waiver, states could not raise these limits above the federal limits of $1,000 on liquid assets and $1,500 on vehicle assets (Powers 1998). The 1996 welfare reform legislation, which replaced AFDC with TANF, abolished the federal asset limits for welfare, allowing states to create their own limits (Savner and Greenberg 1995; Corporation for Enterprise Development 2002).

Taking advantage of the federal policy changes, many states increased AFDC/TANF limits imposed on liquid assets in unrestricted accounts and vehicle assets. In addition, some states created restricted account programs. Restricted accounts have separate and higher asset limits than unrestricted accounts, but withdrawals are limited to only certain types of activities, such as education, homeownership, or business start-up (Savner and Greenberg 1995;

Corporation for Enterprise Development 2002). By 2003, for example, 25 states exempted at least one vehicle and 28 states had introduced restricted accounts.

In comparison to AFDC/TANF, asset limits in the Food Stamp Program were liberalized more slowly. Liquid asset limits remained unchanged during the 1980s and 1990s (at $3,000 and $2,000 for households with and without an elderly member, respectively). Also, the federal vehicle asset limit increased by only $150 (in nominal dollars) during this period, although the federal government did allow a few states to ease vehicle asset limits (via waivers).[3] The federal government took significant steps to liberalize FSP liquid asset and vehicle asset limits in 2001 and 2002 (Corporation for Enterprise Development 2002; Pavetti et al. 2002; Super and Dean 2001).

During the 1990s, federal and state governments also began to adopt IDA programs, which are asset-building programs targeted at low-income households. IDAs are matched saving accounts, created to encourage low-income, low-wealth households to accumulate assets for their long-term economic development. IDA programs create accounts for participants to save for specific purposes, such as higher education, home ownership, and business start-up. In addition, IDA programs provide matching funds at the time of withdrawal (i.e., matched withdrawals), if savings will be used for one of pre-set goals (Corporation for Enterprise Development 2002; Sherraden 1991; Sherraden 2001).

Recognizing the potential effectiveness of IDA programs (based on privately funded IDA programs such as the American Dream Demonstration project), some states instituted IDA programs through legislation, executive orders, or administrative decisionmaking during the mid-1990s (Warren and Edwards 2005). State IDA initiatives were facilitated by subsequent federal legislation. The welfare-to-work law of 1997 permitted grantees to use TANF funds for IDA programs. Further, the Assets for Independence Act (AFIA) of 1998 created the first federally-funded national demonstration programs for IDAs. AFIA mandates the Office of Community Services in the Department of Health and Human Services (HHS) to award five-year grants to nonprofit organizations and to government or financial institutions partnering with nonprofits for IDA programs (Corporation for Enterprise Development 2002).

Although IDA programs have been growing rapidly since the mid 1990s, an important question is whether there are sufficient numbers of IDA programs to capture the effect of these program rules on asset holdings using nationally representative survey data, such as the Survey of Income and Program Participation (SIPP) used for this report. Our investigation finds that it is not possible to obtain a reliable estimate of IDA participation or the number of IDA programs in

[3] In January 1999, for example, three states had federal waivers that allowed them to exempt one vehicle when determining FSP eligibility.

the United States,[4] so this issue remains a potential limitation of this study. The robustness of the IDA program findings in this report suggests that IDA programs may be important.

III. LITERATURE

Effect of Means-Tested Program Rules on Asset Holdings

There is limited empirical research on the effect of means-tested program rules on asset building. Hurst and Ziliak (2006), Nam (forthcoming), Powers (1998), and Sullivan (2006) examine the effect of AFDC/TANF asset limits on asset holdings. In addition, a study by Gruber and Yelowitz (1999) examines Medicaid asset-related rules and net worth. All of these studies use quasi-experimental methods to identify the effects of program rules on asset building. In addition, a relatively new literature uses both experimental and non-experimental methods to examine the impact of IDA programs on asset building. These studies include Schreiner et al. (2005), U.S. Department of Health and Human Services *Interim Report to Congress on the Assets for Independence Program* (2004), Stegman and Faris (2005), and Mills et al. (2006). We discuss these literatures below and present summaries of the studies in appendix tables A-1 and A-2.

Researchers have examined the effect of AFDC/TANF program rules on liquid assets, bank account ownership, home ownership, and vehicle ownership and equity.[5] The findings from this literature are mixed. Of four empirical studies, two studies find that relaxing AFDC/TANF program rules did not increase households' liquid asset holdings or net worth (Hurst and Ziliak 2006; Sullivan 2006), while two others find that they did increase households' liquid asset holdings (Nam forthcoming) or net worth (Powers 1998). Sullivan (2006) uses data from the 1992, 1993, and 1996 SIPP panels to examine how the dollar value of AFDC/TANF limits of vehicle assets and countable assets (the sum of liquid assets and vehicle values that exceed the vehicle asset limit) affect single mothers' liquid assets and net worth (excluding housing). He finds no evidence that relaxing these program rules increases liquid asset holdings or net worth. Consistent with this finding, Hurst and Ziliak (2006), using the 1994 and 2001 waves of the Panel Study of Income Dynamics (PSID), find that changes in AFDC/TANF countable asset limits and vehicle asset limits do not affect the liquid assets or net worth (including housing) of female-headed households with children.

Powers (1998) and Nam (forthcoming) on the other hand, find that AFDC/TANF program changes increase single mothers' asset holdings. Using 1978 and 1983 data from the National Longitudinal Survey of Young Women, Powers (1998) finds that an increase of $1 in

[4] This was confirmed by an IDA expert, Karen Edwards at the Center for Social Development. IDA Program participation is not captured in nationally representative data sources such as the Survey of Income and Program participation (SIPP) and no known data source captures all IDA programs in the country.

[5] Liquid assets in these studies are defined as the sum of dollar values in checking and saving accounts, saving bonds, stocks and other financial investments.

countable asset limits for AFDC families raised a female head's net worth (excluding vehicle equity) by 25 cents. Although Powers' analysis is based on data from nearly three decades ago, this study is able to exploit the change in federal AFDC asset test policy that occurred in 1981 to identify the effect of a change in asset limits. Using more recent data from the 1994 and 2001 waves of the PSID, Nam (forthcoming) finds that increasing state's AFDC/TANF countable assets limits leads to higher bank account ownership and higher liquid asset holdings among female-headed households with children.

Nam (forthcoming) and Hurst and Ziliak (2006) use the same data, but come to different conclusions by using different program rule measures. Nam (forthcoming) expands on Hurst and Ziliak's analysis by estimating models that measure the length of time since states adopted new asset limits. These "length of time" measures capture the fact that states introduced new asset tests at different times and that it may take time for a target population to learn about and adapt to program rule changes. Nam (forthcoming) finds that the earlier a state raised its countable asset limit, the more likely are female-headed households with children to have positive savings and/or a bank account. Nam (forthcoming) and Hurst and Ziliak (2006) also examine different measures of savings, which may explain why the results of these studies differ with regard to the effect of higher asset limits on savings. Nam examines a nonlinear measure of saving (natural logarithm) and find that the amount of saving is significantly higher for those living in states with higher asset limits, while Hurst and Ziliak examine a linear measure and find no effect of asset limits on savings.

The research on the effect of AFDC/TANF program rules on *vehicle ownership* is also mixed. The same studies by Sullivan (2006) and Hurst and Ziliak (2006) find evidence that relaxing asset limits leads to higher vehicle ownership, while Nam (forthcoming) finds no evidence that vehicle ownership increases when asset limits are relaxed.[6] The different results between Nam (forthcoming) and the other two studies may be explained by different sample selection and model specifications. In addition to these analyses of AFDC/TANF program rules, a study by Gruber and Yelowitz (1999) examines the effect of Medicaid program rules on household wealth. Using data from the Consumer Expenditure Survey and the SIPP (1984 and 1993 panels), they find that Medicaid eligibility and Medicaid asset tests lower households' net worth.

Why Empirical Analyses May Not Find an Effect of Asset Tests on Asset Holdings

Researchers have descriptively examined the assets of potential welfare recipients as a way to understand why asset tests may not affect liquid asset holdings. Hurst and Ziliak (2006) examine

[6] Sullivan (2006) examines the possible interaction between AFDC/TANF and Food Stamp asset rules with an alternative asset policy measure by setting a state's countable and vehicle asset limits as the lower limit of each type across these two programs. The results of this analysis are consistent with his main finding—relaxing vehicle asset limits increases vehicle ownership, while relaxing countable asset limits does not show any significant impact.

the liquid asset holdings among likely welfare recipients, defined as single mothers with less than 16 years of schooling. They conclude that the majority of likely welfare recipients are not influenced by increases in asset limits because most have asset holdings that are below the original limits. For example, the median liquid asset holdings of likely welfare recipients were zero in 1989, 1994, and 2001. Similarly, Sullivan's (2006) study shows relatively low liquid assets among potential welfare recipients. However, Sullivan suggests that the vehicle asset limit in place under AFDC might have been more binding than liquid asset limits because vehicle ownership is more common among potential welfare recipients. Among single mothers with a high school degree or less, 58 percent owned a vehicle and the mean vehicle equity value was $1,862 (p. 84), almost 25 percent higher than the amount of the former AFDC vehicle asset limit of $1,500. After removing those who graduated from high school from the data, Sullivan found vehicle ownership and equity to be somewhat lower among single mothers without a high school degree—43 percent owned a vehicle with a mean vehicle equity value of $1,153 (p. 84).

Blank and Ruggles (1996) use SIPP data to show that the percentage of months for which single mothers were ineligible for AFDC benefits increased only slightly when assets were taken into account (from 57.0 percent when only income was considered to 60.2 percent when both income and assets were considered).[7] While some likely welfare recipients own liquid assets high enough to be disqualified by old AFDC asset tests, the relatively low liquid asset holdings of potential welfare recipients (below the old AFDC asset limits) might help to explain why some studies in the literature find that increasing asset limits does not lead to higher asset holdings.

While the data show that potential welfare recipients hold low levels of assets, it is still possible that these asset limits are impacting low-income families' asset holdings. Current and potential welfare recipients may save at suboptimal levels because they misunderstand program rules. In fact, qualitative interviews with TANF recipients in Virginia and Maryland suggest that welfare recipients were misinformed about program rules and that this misinformation led to lower asset holdings (O'Brien 2006). Most of the recipients in the O'Brien study believed that TANF asset limits were much lower than the actual limits. In addition, several of the interviewees reported spending down their bank accounts before applying for cash assistance. Thus, TANF asset limits may be affecting families' asset holdings, even though their asset holdings are well below asset limits.

[7] Results from Blank and Ruggles (1996) suggest that AFDC asset limits had only a small effect on AFDC benefit receipt, because asset limits affect the AFDC eligibility of only a small fraction of single mothers. To date, the literature has only descriptively examined how AFDC/TANF asset limits affect TANF participation. To improve our understanding of how asset limits affect welfare participation, future work could examine this relationship in a multivariate framework.

Effect of IDA Program Rules on Asset Holdings

What do we know about the effect of IDA program rules on asset holdings? Current research provides some evidence that IDA programs increase low-income households' asset holdings. Although the majority of these studies show positive effects of IDA programs on asset accumulation (Schreiner et al. 2005; U.S. Department of Health and Human Services 2004; Stegman and Faris 2005; Mills et al. 2006), some questions remain unanswered due to limitations in study designs and sample representation. In addition, we still know little about IDA programs' long-term effects on net worth and liquid assets.

Several studies based on IDA monitoring data conclude that low-income households can save in individual development accounts, because a majority of participants made deposits into their IDAs and a substantial proportion succeeded in making matched withdrawals (Schreiner et al. 2005; U.S. Department of Health and Human Services 2004; Losby and Robinson 2004).[8] Stegman and Faris (2005) estimate that the median participant in an IDA program saved $117 more than he/she would have saved without American Dream Demonstration (ADD) participation, based on their simulated results using ADD Account Monitoring data and a comparable low-income low-asset sample drawn from the Survey of Consumer Finance.[9]

Controlling for selection into an IDA program with a controlled field experiment, Mills et al. (2006) find that the IDA program raised homeownership rates by almost 10 percentage points over four years for black renters, but reduced their financial assets and business ownership, possibly indicating the need to liquidate assets to afford down payments and housing transition costs. The IDA program had no effects on homeownership for white renters, but their business equity rose. Overall, the IDA program had no statistically significant effect on net worth, which may be explained by the short four-year time frame of the study and the initial costs associated with home purchase and other asset investments.

Two qualitative studies produce results consistent with those found in the quantitative research described above. In-depth interviews with program participants show that low-income

[8] According to American Dream Demonstration Account Monitoring data (ADD-AM), the majority of program participants (53 percent) saved at least $100 in their ADD accounts; the average net deposits were $537 and average monthly deposits were $21; and about 35 percent made matched withdrawals. The average value of matched withdrawals (including matches) was $2,711 (Schreiner et al. 2005). Another large-scale demonstration, authorized by the Assets For Independence Act (AFIA) and some smaller-scale studies produced similar results based on their own IDA account monitoring data (U.S. Department of Health and Human Services 2004; Losby and Robinson 2004; Schreiner et al. 2002). Account monitoring studies, however, have drawbacks in their methodology. First, these studies do not have information on non-IDA assets, and therefore, do not measure whether deposits into IDAs are true savings or substitutions of savings that would have gone into other savings vehicles. Second, assets accumulated in IDAs may not be attributed purely to IDA effects because participants may have saved in the absence of the IDA.

[9] In assessing the effect of ADD on low-income households' asset accumulation, Stegman and Faris (2005) assume that ADD participants save solely into IDAs during the program participation period. They justify their assumption based on the strong incentive built in to the programs (100 to 700 percent return) and that it likely convinced participants that ADD was the most desirable saving tool available to them.

IDA participants were able to save despite continuous financial challenges (e.g., layoffs). The majority of participants succeeded in saving in IDAs and a substantial proportion of them did so regularly. These studies also show the role of program components other than matches: many interviewees valued financial education classes and social supports from IDA staff members and fellow participants (Hogan et al. 2004; Shobe and Christy-McMullin 2005).

Despite promising results in early IDA evaluation studies, it remains unclear whether IDA programs have positive long-term impacts on non-IDA assets, especially net worth and liquid assets in non-IDA accounts. It also remains unanswered whether IDA effects observed can be generalized to the low-income population because IDA applicants may differ from low-income households in terms of their level of motivation to save and other unobservable characteristics.

IV. STUDY POPULATION

Our population of interest for the *Poor Finances* series of reports has been low-income populations. In this study, we define two key study populations—low-education single (i.e., unmarried) mothers who may or may not be cohabiting[10] and a broader population of low-education families, that includes both single and married parent families.[11] We examine low-education populations rather than low-income populations, because low-education is a more permanent and exogenous measure of income status. Using education rather than income to specify the target population results in a more constant study population over time, which is important as our analysis spans 13 years. With changes in the economy over time, defining the population based on income can result in significant changes to the study population from year to year, while defining the population based on educational attainment results in a more constant study population over time.

For this study, low-education is defined as having no education beyond high school. Our population of single mothers has a high school degree or less, and, for married-couple families, both persons in the couple have to have a high school degree or less to be defined as low education. To focus our analysis on the working-age population, we restrict the study population to single mothers ages 18 through 54. Low-education families are included if one or both of the adults (head and spouse) are ages 18 through 54. The study populations are selected based on characteristics at the time of the survey. Our focus on the less educated is designed to limit our analysis to disadvantaged populations likely to participate in means-tested programs. Low-education single mothers are of special interest because they are a group likely to be potential

[10] While our sample of single mothers includes mothers with a cohabiting partner, only the assets of the single mother are considered in the analysis. We think that it is unlikely that assets (unlike income) are shared between cohabiting partners. Also, most welfare programs consider the parent(s) and child as the filing unit, so the assets of the cohabiting partner may not be considered in eligibility and benefit determination.

[11] Families are defined using the U.S. Census Bureau's definition of a family, which is two or more people who are living together and are related by blood, marriage, or adoption.

welfare participants, while low-education families are of interest because they represent the group of potential participants for the Food Stamp Program and IDA programs.

V. DATA

Survey of Income and Program Participation

The individual-level data come from the 1990, 1992, 1993, 1996, and 2001 SIPP panels. Each SIPP panel contains a nationally representative (noninstitutional) sample of between 20,000 and 37,000 households and when combined provides data from 1991 through 2003. This 13 year period captures a time of significant change to the AFDC/TANF and Food Stamp programs, as well as the introduction of IDA programs. It also captures asset holdings during weak and strong economic times, including part of the July 1990 to March 1991 recession, the March 2001 to November 2001 recession (National Bureau of Economic Research 2005), and the economic boom of the late 1990s.

SIPP respondents are interviewed every four months about the previous four months, a period referred to as a "wave." SIPP monthly data are collected as part of the "core" questionnaire, which is administered in each wave. The SIPP also includes "topical modules," which collect supplemental information on a variety of topics and are administered periodically. The core questionnaire collects information about family structure, income from assets, program participation, and educational attainment. Asset and liability data come from the asset and liability topical module, which has been administered once a year in recent panels. The asset and liability topical module asks respondents about asset holdings and liabilities at the time of interview.[12]

One limitation in using the SIPP (or other nationally representative surveys) to capture asset holdings is that it captures only assets held in formal transaction accounts, such as checking or savings accounts. It does not capture cash held under a mattress, for example. Thus, our analysis is capturing the effect of programs on assets held in the formal financial sector.

The key dependent variables—liquid assets, vehicle ownership and equity, and net worth (including and excluding housing)—are calculated from the asset and liability topical modules. They are calculated on an annual basis, and are based on all waves where asset data are available in the five panels used in this analysis. This includes waves 4 and 7 of the 1990, 1992, and 1993 panels; waves 3, 6, 9, and 12 of the 1996 panel; and waves 3, 6, and 9 of the 2001 panel.

[12] For a detailed discussion of the SIPP asset data including data quality issues, see another report in the *Poor Finances* series by Ratcliffe et al. (forthcoming). Ratcliffe et al. assess the quality of 19 data sets for providing information on low-income households' assets and liabilities, and identify the SIPP, along with the Panel Study of Income Dynamics (PSID) and Survey of Consumer Finances (SCF), as being the strongest data sets. Sample attrition and response rates are among the data quality issues discussed. For example, response rates are between 68 and 87 percent in the SIPP (varies across panels), 50 percent over the full panel of the PSID (94 to 98 percent between waves), and 68 percent in the SCF.

Unfortunately, the net worth analysis does not include data from wave 7 of the 1990 and 1992 panels or wave 4 of the 1993 panel because the full asset and liability topical module is not available in these waves and the full module is needed to calculate net worth (but not liquid assets or vehicle ownership).

Our measure of liquid assets includes checking accounts, interest-earning accounts such as savings accounts, savings bonds, IRA and Keogh accounts, and stocks. Families are classified as owning a vehicle if the value of the family's cars is greater than zero and vehicle equity is measured as the difference between the family car value and car debt.[13] Our measure of net worth that includes housing is the sum of home equity, vehicle equity, business equity, value of checking and savings accounts, value of interest earning assets, stock and mutual fund equity, other real estate equity, other assets, IRA/Keogh accounts, and retirement/thrift accounts less unsecured debt. Our alternate net worth measure simply excludes home equity because of potential measurement error issues in trying to value homes.

To control for changes in the economy, the SIPP data are supplemented with annual state-level economic data on (1) unemployment rates, (2) per capita income, and (3) employment-population ratios.

Table 1 presents demographic and economic characteristics of low-education single mothers and low-education families, as well as state economic conditions of the two samples. The average age of the single mother sample is 32.7, while the average age of the head of household of the low-education family sample is 37.3. There are other differences between the two populations. Compared with all low-education families, low-education single mothers are more likely to be black or Hispanic (53.5 percent versus 34.7 percent), are more likely to have no high school degree (36.0 percent versus 26.1 percent), and have more children (an average of 1.9 versus 1.1). The state economic indicators are virtually identical across the two populations.[14]

Table 2 shows that low-education single mothers consistently have fewer assets than the population of all low-education families. Among single mothers, 33.3 percent have liquid assets and 48.3 percent own a vehicle, while the corresponding statistics for low-education families are 58.9 and 75.2 percent, respectively. The value of liquid asset holdings, vehicle equity, and net worth are also lower among low-education single mothers than low-education families. As mentioned above, our focus on single mothers allows us examine a population that is most likely affected by TANF asset limits (as well as FSP asset limits and IDA programs), while our analysis of all low-education families provides an understanding of how these programs affect a

[13] The SIPP collects information on vehicle makes, models, and years, and then uses Blue Book prices to calculate the vehicle values.

[14] State economic conditions can vary across the two populations if the populations are not equally distributed across states.

Table 1. Sample Characteristics of Low-Education Single Mothers and Families, Age 18–54, 1991–2003 SIPP

	Mothers	Families
Benefit Receipt		
Percentage receiving AFDC/TANF	28.3%	7.8%
Percentage receiving Food Stamps	42.2%	15.8%
Demographic and Economic Controls		
Age (years)	32.7	37.3
Black (0/1)	33.9%	17.0%
Hispanic (0/1)	19.6%	17.7%
Education less than high school (0/1)	36.0%	26.1%
Number of children in family (#)	1.9	1.1
Number of adults in family (#)	1.2	1.7
Metro area (0/1)	78.0%	74.0%
State unemployment rate (%)	5.8%	5.8%
State per-capita income ($/person)	$26,423	$26,311
State employment population ratio	0.47	0.47
Sample Size	15,635	77,664

Note: Age, race/ethnicity, and education variables are for mothers in the single mothers sample and for the highest education person (of the head or spouse, taking the male if both are equally educated) in the families sample. The state employment to population ratio is the total state employment divided by the state's population. All dollar values expressed in year 2000 dollars as calculated using the implicit price deflator for personal consumption expenditures.

Table 2. Asset Holdings of Low-Education Single Mothers and Families, Age 18–54, 1991–2003 SIPP

	Mothers	Families
Liquid Asset Holdings		
Percentage holding liquid assets (liquid asset >0)	33.3%	58.9%
Sample size	15,635	77,664
Liquid asset amount:		
Mean	$258	$2,630
(Standard deviation)	($7)	($26)
25th percentile	$0	$0
50th percentile	$0	$98
75th percentile	$51	$1,469
Sample size	15,158	75,341
Vehicle Asset Holdings		
Percentage owning at least one vehicle	48.3%	75.2%
Sample size	15,635	77,664
Vehicle equity amount:		
Mean	$1,140	$3,301
(Standard deviation)	($17)	($16)
25th percentile	$0	$0
50th percentile	$0	$1,603
75th percentile	$1,603	$5,260
Sample size	15,144	75,305
Net Worth (Including Home Equity)		
Mean	$5,113	$27,177
(Standard deviation)	($320)	($1,195)
25th percentile	$0	$0
50th percentile	$0	$4,368
75th percentile	$3,350	$33,796
Sample size	12,048	58,418
Net Worth (Excluding Home Equity)		
Mean	$1,117	$8,526
(Standard deviation)	($62)	($409)
25th percentile	$0	$0
50th percentile	$0	$1,502
75th percentile	$1,738	$8,141
Sample size	12,059	58,433

Note: Sample size varies because statistics for asset holding amounts exclude observations in the top 3 percentiles of liquid assets and vehicle equity, and the top and bottom 3 percentiles of net worth. All dollar values expressed in year 2000 dollars as calculated using the implicit price deflator for personal consumption expenditures.

broader population of families (those who are less disadvantaged yet are potential participants for the Food Stamp Program and IDA programs).

Welfare and Food Stamps

The 13 specific state program rules hypothesized to affect asset holdings are the explanatory variables for the analysis. They include four welfare rules, two Food Stamp Program rules, three IDA rules, and four minimum wage and EITC measures. These variables are measured from 1991 through 2003. Table 3 provides definitions for the variables and table 4 presents their descriptive statistics. We describe the data sources below and the appendix provides more detailed specifics for each rule.

The four welfare rules capture three asset limit rules and the maximum monthly welfare benefit. They are measured using the Urban Institute's Welfare Rules Database (WRD) and related databases.[15] The WRD was built using AFDC state plans and waiver terms and conditions prior to 1997 and caseworker manuals and state regulations from 1997 to the present; much of these data were verified by state staff. The WRD and related databases are supplemented with information from the Urban Institute's Transfer Income Model (TRIM3)[16] and the First Annual TANF Report to Congress, as necessary.

The two Food Stamp Program (FSP) rules measure vehicle asset exemption (at least one vehicle exempt from asset rules) and expanded categorical eligibility. Expanded categorical eligibility extends categorical eligibility for food stamps to units that receive TANF services (not just TANF cash benefits). These rules come from Food and Nutrition Service (FNS) State Options Reports, FNS waivers and other documentation, the Center on Budget and Policy Priorities, and the Federal Register. Many of these data sources were identified in consultation with the U.S. Department of Agriculture's Economic Research Services (ERS) and FNS, and have been provided to us by these agencies.

IDAs

The three IDA program rules—maximum match rate, maximum match allowed for saving, and eligibility beyond welfare recipients—are measured using the Center for Social Development's (CSD) 2005 Survey on State IDA programs, CSD's State IDA Policy Information, and other sources listed in the Appendix. The survey data are collected directly from state officials and personnel working on the state IDA programs.

[15] The official Welfare Rules Database (WRD) measures data from 1996 forward. We use the more general term "related databases" when measuring state program rules from the non-official WRD, which captures some program rules prior to 1996.

[16] TRIM3 is a microsimulation model developed at the Urban Institute (under primary funding from Department of Health and Human Services) that simulates major governmental tax, transfer, and health programs that affect the U.S. population. This model undergoes constant development and is updated annually to capture the latest changes in tax and transfer programs. It is information on state programs that we have incorporated into this study.

Table 3. Program Rule Variable Definitions

Program Rule Variable	Description
AFDC/TANF	
(1) Unrestricted asset limit	The dollar value of any asset the state counts toward the limit (e.g., savings and checking accounts, bonds, stocks, and vehicle values that exceed the vehicle asset limit) that a family may hold and still be eligibile for welfare benefits.
(2) Vehicle asset limit for recipients, at least one vehicle	At least one vehicle per unit exempt from asset limit
(3) Restricted account asset limit	The dollar value excluded from asset limits of savings account assets earmarked for specfic purposes (e.g., IDAs, post secondary education)
(4) Maximum monthly benefit for family of 3	Maximum monthly benefit for a family of 3 with no income
Food Stamp Program (FSP)	
(1) FSP vehicle asset limit, at least one vehicle	At least one vehicle per unit exempt from asset limit
(2) Expanded categorical eligibility	State uses expanded categorical eligibility - receipt of TANF services (with or without cash assistance) makes unit automatically eligible for food stamps
IDA	
(1) Maximum match rate	The number of dollars a state will contribute to a family's IDA account for every dollar the family contributes
(2) Maximum amount qualified for match	The maximum amount a state will match in a family's IDA account
(3) Eligibility beyond welfare recipients	State does not require participants in the state IDA program to already be enrolled in the state's welfare program
Minimum Wage and EITC	
(1) State EITC	The maximum EITC offered by the state
(2) Percentage of state EITC refundable	The percentage of the state EITC that is refundable, obtained by dividing the refundable amount by the maximum EITC amount offered by the state
(3) State minimum wage for FLSA covered categories	Higher of the state or federal minimum wage
(4) State minimum wage for non-FLSA covered categories	State minimum wage for non-federally covered categories

Table 4. State AFDC/TANF, Food Stamp, and Related Program Rules: Number of States with Rule and Mean Value of Rule by Year

Program Rule Variable	1991	1993	1995	1997	1999	2001	2003
AFDC/TANF							
(1) Unrestricted asset limit (Mean Asset limit) ($)	$1,199	$1,139	$1,353	$2,366	$2,730	$2,652	$2,587
(2) Vehicle asset limit (Mean asset limit) ($)	$1,798	$5,150	$5,745	$9,967	$10,748	$10,562	$10,333
(3) Vehicle asset limit, at least one vehicle (# of states)	0	0	2	19	22	24	25
(4) Restricted account asset limit (Mean asset limit) ($)	$0	$25	$380	$2,336	$3,416	$4,191	$5,247
(5) Restricted account asset limit (# of states)	0	1	4	14	20	23	28
(6) Maximum monthly benefit for family of 3	$459.60	$440.48	$423.24	$403.52	$402.42	$393.84	$385.81
Food Stamp Program (FSP)							
(1) FSP vehicle asset limit, at least one vehicle (# of states)	0	0	1	3	3	2	30
(2) Expanded categorical eligibility (# of states)	0	0	0	0	0	38	36
IDA							
(1) State IDA programs (# of states)	0	0	0	4	9	24	24
(2) Maximum match rate (Mean) ($)	$0.00	$0.00	$0.00	$0.16	$0.36	$1.10	$1.10
(3) Maximum amount qualified for match (Mean) ($)	$0	$0	$0	$443	$700	$6,292	$6,263
(4) Eligibility beyond welfare recipients (# of states)	0	0	0	3	7	20	19
EITC and Minimum Wage							
(1) State EITC ($)	$38.30	$46.39	$92.28	$123.66	$155.18	$205.66	$222.17
(2) Percentage of state EITC refundable	4.3%	4.3%	6.5%	8.7%	13.5%	18.1%	20.4%
(3) State minimum wage for FLSA covered categories ($)	$5.14	$4.95	$4.76	$5.10	$5.40	$5.27	$5.18
(4) State minimum wage for non-FLSA covered categories ($)	$3.04	$3.02	$2.90	$3.03	$3.25	$3.18	$3.13

Note: Means include 0's. All dollar values expressed in year 2000 dollars as calculated using the implicit price deflator for personal consumption expenditures.

The following four criteria are used to define IDA programs: (1) matches savings when withdrawn for pre-defined purposes;[17] (2) is funded at least partially from state government, including those from TANF and welfare-to-work programs (excludes programs funded solely by private foundations); (3) is established through state legislation or administrative rule-making; and (4) is actually implemented. The second and third criteria are used because we cannot identify the universe of IDA programs without these restrictions. There are numerous community programs (mostly small and short-lived) under IDA title. In addition, the money in these nonstate programs cannot be exempted from asset tests for most public assistance programs.

EITC and Minimum Wage

We measure the earned income tax credit (EITC) with two program rules, the maximum state EITC (measured at the end of the phase-in range) and the percentage of the state EITC that is refundable. These variables are measured using Neumark and Wascher (2001) among other sources listed in the appendix.

The minimum wage is measured with two variables—the applicable minimum wage for federally covered categories of workers and the state minimum wage for non-federally covered categories. In 1999, 72 percent of all workers were federally covered, that is, covered by the Fair Labor Standards Act (FLSA). Workers in non-federally covered categories include most workers in small businesses or in businesses where no interstate commerce is involved; workers in seasonal or recreational jobs; workers delivering newspapers or engaged in fishing operations; many workers in private households; and executive, administrative, and professional employees (U.S. Department of Labor 2001). The minimum wage measures come from the U.S. Department of Labor "History of Federal Minimum Wage Rates," and Nelson's *Monthly Labor Review*, among other sources. The analysis controls for other federal asset-related policies such as the Saver's Credit and Federal EITC with year fixed effects.

State welfare, food stamp, and related program rules are summarized throughout our observation period in table 4. From 1991 to 2003, states became more generous in terms of asset limits, IDA program rules, and the EITC, though mean unrestricted asset limits peaked in 1999 and declined slightly each year after due to inflation. The number of states adopting IDA programs also increased over this period. As of 2003, 24 states supported IDAs, of which 16 states allowed the participation of non-welfare families. States expanded their EITC programs over time as shown in mean state EITC values and the percentage of states' EITC that is refundable.

From 1991 to 2003, states became more restrictive in their AFDC/TANF benefit levels. The inflation-adjusted maximum AFDC/TANF benefit level declined throughout the observation

[17] Some states call their saving-incentive programs for low-income families IDA programs even though the program does not match savings.

period. This decline was attributable both to benefits not keeping up with inflation and states actually reducing the nominal benefit amount.

VI. METHODOLOGY

The methodology is designed to measure the effect of minimum wage requirements and AFDC/TANF, Food Stamp, IDA, and EITC program rules on asset holdings. Families' asset holdings are measured with six separate variables: (1) presence of liquid assets, (2) value of liquid assets, (3) vehicle ownership, (4) vehicle equity, (5) net worth (excluding housing), and (6) net worth (including housing). States implemented different rule changes to their AFDC/TANF, Food Stamp, IDA, EITC, and minimum wage programs at different times from 1991 through 2003, and the model uses this variation across states and time to identify the effect of program rules on asset holdings. A benefit of this 13 year time period is that it captures families' asset holding during both weak and strong economic times, including the economic boom of the late 1990s and the 1991 and 2001 recessions (National Bureau of Economic Research 2005).

Identifying the effect of program rules on asset holdings requires disentangling the effect of state and federal rules from other factors that affect asset holdings, such as economic conditions (e.g., unemployment rate) and unobservable state characteristics (e.g., public sentiment towards welfare recipients). If, for example, public sentiment towards welfare recipients affects both a state's welfare asset limits and the likelihood individuals in that state consider welfare to be an option, and in turn their asset holdings (e.g., they begin to save for an economic crisis because welfare is believed to be less available), then omitting public sentiment would produce biased estimates. The model captures unobservable state and time differences with state fixed effects (which control for differences across states) and year fixed effects (which control for differences across years).[18]

The model details are presented below for one of the asset holding measures—presence of liquid asset holdings. This is followed by a more general discussion of the models estimated for the other five asset holding measures. We estimate a linear probability model for "family has liquid asset holdings" (Y) for family *i* in state *s* in year *t*:

$$Y_{ist} = \alpha + \beta_1' WP_{st} + \beta_2' FSP_{st} + \beta_3' IDA_{st} + \beta_4' EITC_{st} + \beta_5' MW_{st} + \delta_1' X_{ist} + \delta_2' S_{st} + \mu_s + \tau_t + \nu_{ist}.$$

WP_{st} represents the vector of state-level specific AFDC/TANF program rules in state *s* in year *t*. Similarly, FSP_{st}, IDA_{st}, $EITC_{st}$, and MW_{st} represent the vectors of state-level specific Food Stamp, IDA, EITC, and minimum wage program rules in state *s* in year *t*, respectively.

[18] If public sentiment towards welfare recipients does not change over time, then the state fixed effects would fully capture this.

The vector X_{ist} represents family composition and demographic characteristics of family *i* in state *s* in year *t*, including age, age-squared, race and ethnicity (black, Hispanic),[19] educational attainment (less than high school),[20] number of children in family, number of adults in family, and live in metropolitan area. Age of the family head reflects the ability and motivation of the family head to save at his/her stage in the life cycle (Modigliani and Brumberg 1954) and is expected to have a positive sign for our sample of working-aged families. Race and ethnicity measure different saving environments and behaviors among different racial and ethnic groups (Shapiro 2004), while education captures financial literacy as well as permanent income (Hubbard, et al. 1995). The household composition variables capture consumption needs of a family, as well as the number of potential earners (Bird and Hagstrom 1999). The indicator of living in a metro area reflects families' need for a vehicle and accessibility to banking facilities.

The vector S_{st} represents state-level nonprogram rule variables in year *t* (i.e., unemployment rate, per capita income, and employment-population ratio). We control for economic conditions because they can affect families' employment and income, as well as states' policy choices (Plotnick and Winters 1985). Finally, μ_s is the state fixed-effect, τ_t is the year fixed effect, and ν_{ist} is the random error term. We estimate a linear probability model with weights to correct for heteroscedasticity, based on the SIPP individual and family weights. To account for potential serial correlation in the error term, we cluster our standard errors by state as recommended by Bertrand et al. (2004).

The analysis of "vehicle ownership" also uses a linear probability model, as described above. The models estimated for "value of liquid assets" and "vehicle equity" are designed to take account of the fact that a relatively large fraction of families in our sample do not hold liquid assets (41 to 67 percent) or own a vehicle (25 to 52 percent). Specifically, we estimate a Tobit model. Finally, our analyses of net worth (including and excluding housing) are based on weighted ordinary least squares models. All five models include the same set of explanatory variables that are in the "have liquid assets" model, as well as the state and year fixed effects.[21]

Our main models examine the contemporaneous relationship between family asset holdings and state program rules. However, it is likely that there are longer-run changes that result from behavioral responses to the program rule change. As a result, we carry out additional specifications that examine the number of years the program rules have been in place.

[19] The omitted category is non-black, non-Hispanic.
[20] The omitted category is high school education.
[21] In the Tobit models, the standard errors are not clustered by state.

VII. RESULTS

This section presents results from our multivariate analysis of the effects of state program rules on the asset holdings of low-education (high school degree or less) single mother families and a broader population of all low-education families.

State means-tested social program rules could affect asset holdings through four hypothesized effects: (1) asset test effect—asset tests associated with means-tested social programs could discourage asset holding in order to qualify for benefits; (2) precautionary savings effect—the need to save in case of emergency could be reduced if families know that program benefits will provide a minimum level of consumption in an emergency (Hubbard et al. 1995); (3) income effect—by providing additional income (such as benefits and program matches) from which to save, social programs could increase asset holdings; and (4) substitution effect—program rules that affect only specific types of asset holdings could encourage families to substitute one type of asset for another type (e.g., generous vehicle asset exemptions could encourage families to substitute liquid assets for vehicle assets). Given these potentially offsetting effects, the overall hypothesized effect of many social program rules on specific types of asset holdings is ambiguous (as shown in table 5).

Below we discuss our empirical findings on the relationships between specific state program rules and liquid asset holdings, vehicle asset holdings, and net worth. The primary results (summarized in table 6) suggest that (1) more generous restricted account asset limits and IDA program rules are positively associated with liquid asset holdings; (2) more generous food stamp vehicle asset limits and expanded categorical eligibility are positively associated with vehicle asset holdings; (3) a more generous state EITC amount is negatively associated with liquid asset holdings but the percentage of the state EITC that is refundable is positively associated with liquid asset holdings; and (4) a more generous state minimum wage is positively associated with liquid asset holdings, vehicle asset holdings, and net worth.[22] These findings are most consistent with the asset test and income hypothesized effects.

Empirical Results, Liquid Asset Holdings

Of the 13 state program rules hypothesized to affect asset holdings, five rules have a statistically significant relationship with liquid asset holdings. These rules are restricted account asset limit, maximum amount qualified for match in an IDA account, the state EITC amount, the percentage of the state EITC that is refundable, and the state minimum wage for federally covered categories. In addition, all of the demographic controls and most of the economic controls are important determinants of liquid assets holdings (table 7). Nearly all of these significant variables have estimated coefficients that are in the hypothesized direction.

[22] These general findings hold in an alternate specification that includes controls for state lifetime and intermittent time limit rules.

Table 5. Hypothesized Effects of State Program Rules on Asset Holding by Outcome

Program Rule Variable	Hypothesized Effect on Liquid Assets					Hypothesized Effect on Vehicle Assets					Hypothesized Effect on Net Worth				
	T	P	I	S	Overall	T	P	I	S	Overall	T	P	I	S	Overall
AFDC/TANF															
(1) Unrestricted asset limit	+/-				(+)	+/-				(+)	+/-				(+)
(2) Vehicle asset limit for recipients, at least one vehicle			+	-	(-)/(+)	+/-			+	(+)	+/-				(-)/(+)
(3) Restricted account asset limit	+/-		+	-	(-)/(+)			+	-	(-)/(+)	+/-		+	+	(+)
(4) Maximum monthly benefit for family of 3		-	+		(+)/(-)	-		+		(+)/(-)	-	-	+		(+)/(-)
Food Stamps															
(1) FSP vehicle asset limit, at least one vehicle			+	-	(-)/(+)	+		+	+	(+)					(-)/(+)
(2) Expanded categorical eligibility	+	-	+		(+)/(-)	+	-	+		(+)/(-)	+	-	+		(+)/(-)
IDA															
(1) Maximum match rates			+		(+)			+	-	(-)/(+)			+		(+)
(2) Maximum amount qualified for match			+		(+)			+	-	(-)/(+)			+		(+)
(3) Eligibility beyond welfare recipients			+	-	(+)/(-)			+	-	(-)/(+)			+	-	(+)/(-)
Minimum Wage and EITC															
(1) State EITC		-	+		(+)/(-)			+		(+)		-	+		(+)/(-)
(2) Percentage of state EITC refundable		-	+		(+)/(-)			+		(+)		-	+		(+)/(-)
(3) State minimum wage for FLSA covered categories			+		(+)/(-)			+		(+)/(-)			+		(+)/(-)
(4) State minimum wage for non-FLSA covered categories			+		(+)/(-)			+		(+)/(-)			+		(+)/(-)

T = Asset test effect
P = Precautionary savings effect
I = Income effect
S = Substitution effect (substitute one type of asset for another)

Table 6. Results Summary
Statistically Significant Relationships between State Rules and Asset Holding

Program Rule Variable	Relationship with Liquid Assets	Relationship with Vehicle Assets	Relationship with Net Worth
AFDC/TANF			
(1) Unrestricted asset limit			
(2) Vehicle asset limit for recipients, at least one vehicle			
(3) Restricted account asset limit	(+)		(-)
(4) Maximum monthly benefit for family of 3			
Food Stamps			
(1) FSP vehicle asset limit, at least one vehicle		(+)	(-)
(2) Expanded categorical eligibility		(+)	(+)
IDA			
(1) Maximum match rates			(+)
(2) Maximum amount qualified for match	(+)		(-)
(3) Eligibility beyond welfare recipients			(+)/(-)
Minimum Wage and EITC			
(1) State EITC	(-)		
(2) Percentage of state EITC refundable	(+)		
(3) State minimum wage for FLSA covered categories	(+)	(+)	(+)
(4) State minimum wage for non-FLSA covered categories			

Note: Results based on primary models presented in tables 7-9.

Table 7. The Effect of State Program Rules on Liquid Asset Holdings of Low-Education Single Mothers and Families, Age 18–54, 1991–2003 SIPP

	Linear Probability Ind. Liquid Assets > 0		Tobit Ln (Liquid Assets)	
	Mothers	**Families**	**Mothers**	**Families**
AFDC/TANF				
Ln (unrestricted account asset limit) ($)	-0.005	-0.003	0.019	-0.034
	[0.017]	[0.015]	[0.229]	[0.075]
Vehicle asset limit, at least one vehicle (0/1)	0.023	0.014	0.403	0.125
	[0.020]	[0.013]	[0.315]	[0.104]
Restricted account asset limit ($10,000)	0.030	0.025	0.538	0.261
	[0.018]	[0.012]*	[0.256]*	[0.085]**
Ln (maximum monthly benefit for a family of 3) ($)	0.023	-0.035	0.007	-0.316
	[0.092]	[0.091]	[1.434]	[0.441]
Food Stamps				
Vehicle asset limit, at least one vehicle (0/1)	-0.005	0.007	-0.311	0.071
	[0.020]	[0.013]	[0.330]	[0.110]
Expanded categorical eligibility (0/1)	-0.011	0.007	-0.230	0.092
	[0.023]	[0.015]	[0.336]	[0.112]
IDA				
Maximum match rate ($)	0.008	0.005	0.058	0.058
	[0.017]	[0.013]	[0.191]	[0.062]
Maximum amount qualified for match ($10,000)	0.010	0.011	0.104	0.089
	[0.008]	[0.005]*	[0.147]	[0.050]+
Eligibility beyond welfare recipients (0/1)	-0.026	-0.005	-0.225	0.004
	[0.039]	[0.031]	[0.449]	[0.147]
EITC and Minimum Wage				
State EITC ($100)	-0.008	-0.002	-0.117	-0.022
	[0.003]*	[0.002]	[0.056]*	[0.018]
Percentage of state EITC refundable (0-1)	0.045	0.023	1.003	0.214
	[0.029]	[0.012]+	[0.492]*	[0.158]
State minimum wage for FLSA covered categories ($)	0.016	0.009	0.410	0.222
	[0.023]	[0.016]	[0.279]	[0.093]*
State minimum wage for non-FLSA categories ($)	0.006	-0.002	0.059	-0.047
	[0.013]	[0.007]	[0.219]	[0.073]
Demographic and Economic Controls				
Age (years)	0.022	0.026	0.478	0.410
	[0.005]**	[0.002]**	[0.057]**	[0.017]**
Age-squared (years-squared)/100	-0.021	-0.028	-0.541	-0.445
	[.007]**	[.003]**	[.083]**	[.023]**
Black (0/1)	-0.237	-0.260	-3.340	-3.253
	[0.014]**	[0.011]**	[0.154]**	[0.059]**
Hispanic (0/1)	-0.150	-0.150	-1.829	-1.668
	[0.031]**	[0.017]**	[0.182]**	[0.062]**
Education less than high school (0/1)	-0.203	-0.231	-3.518	-3.068
	[0.013]**	[0.006]**	[0.142]**	[0.049]**
Number of children in family (#)	-0.028	-0.027	-0.696	-0.435
	[0.006]**	[0.003]**	[0.065]**	[0.017]**
Number of adults in family (#)	0.020	0.104	0.298	1.405
	[0.012]+	[0.003]**	[0.132]*	[0.026]**
Metro area (0/1)	0.026	0.027	0.335	0.403
	[0.015]+	[0.009]**	[0.167]*	[0.051]**
State unemployment rate (%)	0.019	0.018	0.253	0.203
	[0.008]*	[0.005]**	[0.129]*	[0.042]**
State per-capita income ($/person)	0.000	0.000	0.000	0.000
	[0.000]+	[0.000]	[0.000]*	[0.000]**
State employment population ratio	0.713	0.929	6.594	10.445
	[1.012]	[0.434]*	[11.153]	[3.647]**
Sample Size	15,635	77,664	15,158	75,341

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively. Standard errors in brackets. All regressions weighted and include state and year fixed effects. All dollar values are in year 2000 dollars. Standard errors adjusted for clustering by state in linear probability models. Sample size varies because tobit models exclude observations in top 3 percentiles of liquid asset values.

Welfare and Food Stamps: One specific state welfare program rule has a statistically significant relationship with liquid asset holdings—the restricted account asset limit. The results suggest that a more generous restricted account asset limit increases liquid asset holdings for both low-education single mothers and low-education families, as might be expected because restricted accounts (savings accounts earmarked for specific purposes such as IDAs) are typically held as liquid assets. This finding is consistent with both the asset test and income effects hypotheses. Restricted accounts often receive a match for dollars saved. The income from this match could provide an incentive to increase savings in order to obtain the match and thus is hypothesized to increase liquid asset holdings.

The estimated coefficients suggest that a $10,000 increase in the restricted account asset limit increases the probability that a low-education family holds liquid assets by 2.5 percentage points, holding all the other variables in the model constant (table 7, column 2).[23] This $10,000 increase may seem large to consider but is reflective of the variation in state policy. Typical state restricted account asset limits vary from $0 to $10,000 to no limit (Rowe and Versteeg 2005, 120–21). To put the small magnitude of this relationship in context, consider that 58.9 percent of low-education families hold liquid assets (table 2). Thus, a $10,000 increase in the restricted account asset limit is associated with an increase from 58.9 to 61.4 percent in the percentage of low-education families who hold liquid assets (an increase of about 4 percent). If only a small fraction of the low-income (education) population has the option of joining an IDA program or holding another type of restricted asset account, then the true magnitude of this relationship for families may be larger than what we capture here.

An increase in the restricted account asset limit not only increases the likelihood low-education families hold liquid assets, but also the amount of liquid assets they hold. The estimated Tobit coefficients suggest that a $10,000 increase in the restricted account asset limit increases the amount of liquid asset holdings by 17.9 percent for low-education single mothers and 15.4 percent for low-education families (table 7, columns 3 and 4).[24]

The empirical results suggest that liquid asset holdings are not significantly associated with unrestricted asset limits, welfare benefit levels, vehicle exemptions, or expanded categorical eligibility program rules.

Individual Development Accounts: The empirical results suggest that a more generous maximum amount qualified for match in IDA programs is associated with increased liquid asset

[23] Note that throughout this report, results are presented as percentage point changes for the *liquid assets* and *vehicle assets* outcomes (linear probability models), percent change for the natural logarithm of *amount of liquid assets* and *vehicle equity* outcomes (Tobit models), and as dollar changes for the *net worth* outcomes (OLS models).
[24] To calculate marginal effects for the Tobit coefficients, the coefficients are multiplied by the cumulative normal distribution function, which gives the probability of being above the limit (i.e., holding the asset). The cumulative normal distribution is approximated by the fraction of the sample holding liquid assets (and owning a vehicle when interpreting Tobit vehicle equity coefficients).

holdings for low-education families. Increasing the maximum amount qualified for a match by $10,000 is associated with a 1.1 percentage point increase in the probability that low-education families hold liquid assets (table 7, column 2). It is also associated with a 5.2 percent increase in the amount of liquid assets held by these families (table 7, column 4). These findings are consistent with the income effect hypothesis. We find no statistically significant relationship between two other IDA program rules—match rates and program eligibility beyond welfare recipients—and liquid asset holdings.

EITC and Minimum Wage: We find mixed evidence of the relationship between the state EITC and liquid asset holdings. Higher state EITC amounts are associated with reduced liquid asset holdings. This relationship is consistent with the precautionary savings hypothesis, where families are hypothesized to save less in anticipation of a tax refund. On the other hand, we also find evidence that liquid asset holdings increase as the percentage of the state EITC that is refundable increases. This relationship is consistent with the income effect hypothesis.

The results also provide limited evidence that the state minimum wage for federally covered categories increases the amount of liquid assets held. The results suggest that a $1 increase in the minimum wage increases low-education families' liquid asset holdings by 13.1 percent (table 7).

Demographic and Economic Controls: Liquid asset holdings are found to increase with age until approximately the late 40s or early 50s and decrease with age thereafter for low-education single mothers and families. This turning point is slightly earlier than in the general population, where asset holdings tend to peak in the 55–64 age group and decline thereafter (Carasso and McKernan forthcoming). The results also suggest that liquid asset holdings (1) are lower for blacks and Hispanics than whites, (2) are lower for those with no high school degree than those with a high school degree, (3) decrease with the number of children in the family and increase with the number of adults in the family, and (4) are higher for families living in metropolitan areas than non-metropolitan areas.

Empirical Results, Vehicle Ownership

Three of the 13 state program rules hypothesized to affect asset holdings have a statistically significant relationship to vehicle ownership. Similar to the liquid asset holding models, all of the demographic controls are important determinants of vehicle ownership as are some of the economic controls.

Welfare and Food Stamps: The results suggest that none of the TANF program rules but both Food Stamp Program rules have a statistically significantly relationship to vehicle asset holdings (see table 8).

Table 8. The Effect of State Program Rules on Vehicle Asset Holdings of Low-Education Single Mothers and Families, Age 18–54, 1991–2003 SIPP

	Linear Probability Ind. Owns Vehicle		Tobit Ln (Vehicle Equity)	
	Mothers	**Families**	**Mothers**	**Families**
AFDC/TANF				
Ln (unrestricted account asset limit) ($)	-0.005	-0.016	0.102	-0.077
	[0.022]	[0.011]	[0.251]	[0.071]
Vehicle asset limit, at least one vehicle (0/1)	-0.012	0.012	-0.163	-0.058
	[0.025]	[0.011]	[0.340]	[0.098]
Restricted account asset limit ($10,000)	-0.003	0.014	0.181	0.098
	[0.022]	[0.010]	[0.279]	[0.080]
Ln (maximum monthly benefit for a family of 3) ($)	0.104	0.050	1.080	0.644
	[0.091]	[0.037]	[1.442]	[0.402]
Food Stamps				
Vehicle asset limit, at least one vehicle (0/1)	0.039	-0.010	0.854	-0.065
	[0.020]+	[0.009]	[0.354]*	[0.103]
Expanded categorical eligibility (0/1)	0.022	0.018	0.819	0.354
	[0.019]	[0.014]	[0.364]*	[0.104]**
IDA				
Maximum match rate ($)	0.002	0.009	-0.057	-0.014
	[0.019]	[0.006]	[0.211]	[0.059]
Maximum amount qualified for match ($10,000)	-0.002	0.002	-0.097	0.020
	[0.010]	[0.004]	[0.165]	[0.047]
Eligibility beyond welfare recipients (0/1)	0.023	-0.013	0.239	-0.049
	[0.040]	[0.013]	[0.495]	[0.139]
EITC and Minimum Wage				
State EITC ($100)	-0.001	-0.002	-0.065	-0.009
	[0.004]	[0.002]	[0.065]	[0.018]
Percentage of state EITC refundable (0-1)	-0.007	-0.004	0.492	0.093
	[0.051]	[0.016]	[0.567]	[0.152]
State minimum wage for FLSA covered categories ($)	0.021	0.011	0.446	0.149
	[0.020]	[0.007]+	[0.308]	[0.088]+
State minimum wage for non-FLSA categories ($)	0.005	-0.006	0.058	-0.049
	[0.014]	[0.006]	[0.233]	[0.068]
Demographic and Economic Controls				
Age (years)	0.058	0.037	0.991	0.443
	[0.006]**	[0.002]**	[0.063]**	[0.016]**
Age-squared (years-squared)/100	-0.069	-0.043	-1.205	-0.511
	[.008]**	[.003]**	[.091]**	[.021]**
Black (0/1)	-0.258	-0.264	-3.492	-2.855
	[0.016]**	[0.015]**	[0.164]**	[0.054]**
Hispanic (0/1)	-0.193	-0.113	-2.721	-1.149
	[0.042]**	[0.038]**	[0.202]**	[0.058]**
Education less than high school (0/1)	-0.189	-0.156	-2.820	-1.754
	[0.010]**	[0.008]**	[0.146]**	[0.044]**
Number of children in family (#)	-0.018	-0.012	-0.315	-0.180
	[0.006]**	[0.003]**	[0.065]**	[0.016]**
Number of adults in family (#)	0.045	0.110	0.518	1.213
	[0.013]**	[0.004]**	[0.143]**	[0.025]**
Metro area (0/1)	-0.024	-0.031	-0.555	-0.366
	[0.013]+	[0.010]**	[0.177]**	[0.048]**
State unemployment rate (%)	-0.005	-0.002	-0.200	-0.104
	[0.010]	[0.004]	[0.140]	[0.039]**
State per-capita income ($/person)	0.000	0.000	0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]
State employment population ratio	-0.700	0.074	-12.119	0.517
	[0.807]	[0.351]	[12.276]	[3.450]
Sample Size	15,635	77,664	15,144	75,305

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively. Standard errors in brackets. All regressions weighted and include state and year fixed effects. All dollar values are in year 2000 dollars. Standard errors adjusted for clustering by state in linear probability models. Sample size varies because tobit models exclude observations in top 3 percentiles of vehicle equity values.

Low-education single mothers and families in states with expanded categorical eligibility for the Food Stamp Program have significantly higher vehicle equity than those who live in states without expanded categorical eligibility. Our results suggest that expanded categorical eligibility is associated with increased vehicle equity of 39.6 and 26.6 percent respectively for low-education single mothers and families. The positive relationship between expanded categorical eligibility and vehicle asset holdings is consistent with the hypothesized income effect—additional program benefits help with the purchase or maintenance of a vehicle. These results are also consistent with the hypothesized asset test effects. Expanded categorical eligibility results in more lenient asset tests because families that receive TANF services (not just TANF cash benefits) also qualify for food stamps, even if the Food Stamp Program has more stringent asset tests. Many states use categorical eligibility as a backdoor way to ease vehicle asset limits. These more lenient asset tests for recipients of TANF services are hypothesized to increase vehicle asset holdings.

Also consistent with the asset test hypothesis, exempting at least one vehicle when counting assets for Food Stamp Program eligibility is associated with a 3.9 percentage point increase in vehicle ownership and 41.2 percent increase in vehicle equity for low-education single mothers. While we find evidence that state Food Stamp Program vehicle exemptions increase vehicle ownership, we find no evidence that exempting at least one vehicle from the TANF program increases vehicle ownership, which is contrary to Sullivan (2006). We also find no statistically significant evidence that the unrestricted asset limit, restricted account asset limit, and maximum monthly benefit are related to vehicle ownership for low-education single mothers or families.

Individual Development Accounts: The results provide no statistically significant evidence state IDA program rules are related to vehicle ownership. Specifically, we find no evidence that the maximum match rate, maximum amount qualified for match, or program eligibility beyond welfare recipients are significantly associated with vehicle ownership. Since IDA accounts generally cannot be used to purchase a vehicle, it is not surprising that IDA program rules are not found to increase vehicle ownership or equity. If these IDA programs cause families to shift resources from vehicles into savings, then we could find a negative relationship.

EITC and Minimum Wage: The results suggest that a one dollar increase in the state minimum wage for federally covered categories is associated with a 1.1 percentage point increase in vehicle ownership and 11.2 percent increase in vehicle equity for low-education families. This result is consistent with a positive income effect from an increased minimum wage. We find no evidence that the EITC is related to vehicle ownership or equity.

Demographic and Economic Controls: Similar to the models for liquid asset holdings, all the demographic controls are statistically significant determinants of vehicle asset holdings in the expected directions and the economic controls are weaker determinants of vehicle holdings.

Empirical Results, Net Worth

Asset tests measure liquid assets and vehicle ownership so there is likely to be a strong relationship between asset tests and the level of these holdings. We also consider net worth because asset-related program rules could cause families to shift their assets from one type of asset (those considered in asset tests) to another type of asset (those not counted in asset tests, such as homes), or could cause changes in debt levels (e.g., if a family borrows money to buy a car in response to more lenient vehicle exemptions).

We examine two measures of net worth—net worth including home equity and net worth excluding home equity. We measure net worth including home equity because for families who own a home, the home is likely to be one of their most valuable assets. We measure net worth excluding home equity because of potential measurement issues in trying to value homes. We expect to see potentially larger effects of state program rules on net worth excluding home equity because net worth excluding home equity is more likely to be affected by family saving and debt behavior, while net worth including home equity is more likely to be driven by housing market values, which are outside family control. Seven of the 13 state program rules hypothesized to affect asset holdings have a statistically significantly relationship to net worth though not all of these relationships appear robust (see table 9).

Welfare and Food Stamps: The results suggest that expanded categorical eligibility in the Food Stamp Program increases the net worth (excluding home equity) of low-education single mothers by $401. This finding is consistent with our finding that expanded categorical eligibility increases vehicle equity, and is supported by the asset test and income effects hypotheses. The similar increases in vehicle equity for low-education single mothers associated with the food stamp vehicle asset limit and for low-education families associated with expanded categorical eligibility did not translate into increased net worth.

We find some although limited evidence that more generous restricted asset account limits are negatively associated with net worth. We find a significant negative relationship for only low-income families' net worth including home equity, so this unexpected finding is for only one of the four regressions and for the population (families) less likely to be affected by TANF policy.

Individual Development Accounts: The results provide some evidence that IDA program rules are associated with net worth. The maximum match rate is positively associated with net worth (both including and excluding home equity) for low-education single mothers. Each $1 increase in the match rate (say from 1-to-1 to 2-to-1) is associated with a $923 increase

Table 9. The Effect of State Program Rules on Net Worth of Low-Education Single Mothers and Families, Age 18–54, 1991–2003 SIPP

	OLS Net Worth (Incl. Home)		OLS Net Worth (Excl. Home)	
	Mothers	**Families**	**Mothers**	**Families**
AFDC/TANF				
Ln (unrestricted account asset limit) ($)	83.235	374.659	-129.330	21.290
	[572.425]	[875.387]	[153.100]	[458.079]
Vehicle asset limit, at least one vehicle (0/1)	698.300	-8.868	337.621	-767.295
	[554.448]	[1,085.683]	[204.335]	[532.082]
Restricted account asset limit ($10,000)	58.247	-1467.249	53.852	-255.392
	[481.887]	[616.863]*	[156.300]	[319.877]
Ln (maximum monthly benefit for a family of 3) ($)	790.272	3375.655	-180.010	-2860.396
	[2,155.237]	[5,149.317]	[878.282]	[3,038.589]
Food Stamps				
Vehicle asset limit, at least one vehicle (0/1)	-1003.734	-679.250	-103.082	523.147
	[532.799]+	[1,326.024]	[179.768]	[398.805]
Expanded categorical eligibility (0/1)	130.008	-1935.735	400.737	-562.603
	[509.791]	[1,339.433]	[171.744]*	[550.317]
IDA				
Maximum match rate ($)	923.236	55.033	418.419	-158.881
	[366.248]*	[789.064]	[166.492]*	[305.179]
Maximum amount qualified for match ($10,000)	80.520	-743.448	-162.481	-167.199
	[362.484]	[1,121.859]	[89.171]+	[204.149]
Eligibility beyond welfare recipients (0/1)	-2435.173	1751.237	-1116.35	1547.555
	[875.235]**	[1,435.979]	[375.277]**	[689.218]*
EITC and Minimum Wage				
State EITC ($100)	-175.713	-31.936	-33.051	68.244
	[146.332]	[362.888]	[58.934]	[83.896]
Percentage of state EITC refundable (0-1)	1243.977	-1904.144	387.571	105.357
	[1,085.700]	[2,047.966]	[487.863]	[455.972]
State minimum wage for FLSA covered categories ($)	-723.728	1547.971	-36.487	894.999
	[516.067]	[1,259.613]	[222.914]	[444.097]*
State minimum wage for non-FLSA categories ($)	-164.022	395.526	57.775	-130.717
	[334.910]	[848.403]	[139.045]	[385.812]
Demographic and Economic Controls				
Age (years)	-1.843	41.767	98.821	119.709
	[171.064]	[174.031]	[37.301]*	[98.165]
Age-squared (years-squared)/100	522.337	1631.693	-94.436	286.438
	[279.783]+	[256.210]**	[55.516]+	[150.866]+
Black (0/1)	-4091.780	-18580.41	-749.221	-7010.925
	[513.409]**	[1,291.941]**	[110.482]**	[352.584]**
Hispanic (0/1)	-2698.324	-12155.63	-467.142	-4759.374
	[803.012]**	[2,244.725]**	[166.676]**	[633.731]**
Education less than high school (0/1)	-2902.650	-12550.14	-503.650	-4587.349
	[372.118]**	[769.951]**	[69.953]**	[194.034]**
Number of children in family (#)	-34.828	707.296	-158.200	-124.761
	[133.748]	[306.504]*	[33.896]**	[128.471]
Number of adults in family (#)	1684.587	10693.570	304.064	2800.188
	[425.792]**	[550.108]**	[110.487]**	[218.325]**
Metro area (0/1)	114.116	755.987	84.313	131.794
	[552.452]	[1,001.636]	[128.294]	[374.556]
State unemployment rate (%)	-113.282	184.080	-72.342	-299.412
	[312.119]	[487.584]	[80.991]	[284.619]
State per-capita income ($/person)	0.867	0.125	0.133	-0.147
	[0.301]**	[0.654]	[0.116]	[0.247]
State employment population ratio	513.800	95699.975	5674.903	20781.823
	[22,441.499]	[55,461.453]+	[9,079.566]	[22,233.837]
Sample Size	12,048	58,418	12,059	58,433

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively. Standard errors in brackets. All regressions weighted and include state and year fixed effects. All dollar values are in year 2000 dollars. Standard errors adjusted for clustering by state. Sample sizes vary because top and bottom three percentiles of net worth are dropped.

in net worth including home equity and a $418 increase in net worth excluding home equity. An increase in the maximum match qualified for a match is weakly negatively associated with a decrease in net worth (excluding home equity) for low-education single mothers. Extending eligibility beyond welfare recipients is related to a reduction of $2,435 and $1,116 in the net worth (including and excluding home equity, respectively) of single mothers. This reduction in the net worth of single mothers when eligibility is extended beyond welfare recipients might result from IDA programs with a set amount of funds having fewer funds to target to the more disadvantaged welfare population. Consistent with this hypothesis, extending eligibility beyond welfare recipients is associated with an increase in net worth (excluding home equity) for low-education families.

EITC and Minimum Wage: We also find evidence that a higher minimum wage for federally covered categories is related to increases in the net worth of low-education families. This finding is consistent with the hypothesized income effect. We find no evidence that the EITC is related to net worth.

Empirical Results, Years since the Program Rule Was Implemented

To examine the timing of program rule changes, we estimate an alternate specification that measures the number of years since the program rule was implemented (similar to Nam forthcoming) rather than a precise measure of the rule. It may be that program participants and potential participants understand only blunt measures of rules, such as whether a participant may have a restricted asset account and not the amount she is allowed to hold in it. It may also be that information on the rules takes time to filter down to participants and affect saving behavior. This alternate specification captures blunt rule changes (such as whether restricted asset accounts are available) and the timing of the blunt rule change (the number of years since it is available).

Some results from the years-since-program-rule-implemented specification are similar to those from our primary specification—which captures more precise program rule measures—while other results differ. TANF restricted asset account limits (as measured by the number of years since restricted asset account limits became available in the state) are not significantly related to liquid asset holdings, though the specific measure of the restricted account asset limit was significantly positively related in the primary specification. The unrestricted asset limit (as measured by years since the unrestricted asset limit was greater than $1,000 in the state) is positively and statistically significantly associated with increases in liquid asset holdings while the specific measure of the unrestricted asset limit was, in general, not positively or significantly related to liquid asset holdings in the primary specification. IDA programs continue to be significantly related to asset holdings and suggest that the number of years since a state-sponsored IDA program became available in the state is associated with an increase in liquid asset holdings. We find mixed results for the relationship between the years since at least one vehicle was exempted in determining eligibility in the food stamp program but do find some

evidence that both this variable and the years since expanded categorical eligibility was put in place variable are associated with increased vehicle asset holdings. Detailed results are presented in appendix tables A3–A5.

VIII. CONCLUSION

The results of this study suggest that various state program rules adopted since the mid-1990s, especially those aimed at asset building, are positively related to low-education single mothers' and families' asset holdings. The analysis suggests that more lenient asset limits in means-tested programs and more generous IDA program rules may have positive effects on asset holdings. These results suggest that maintaining and expanding these programs may help promote asset ownership among economically vulnerable populations.

Findings from the primary models suggest that not every asset-building program rule has the same effect. For example, more lenient limits on restricted accounts are positively related to liquid assets, while relaxed asset limits on unrestricted accounts have no significant relationship with any type of asset holdings. More generous IDA rules, on the other hand, are positively related to both liquid asset holdings and net worth. The different incentive structures and program operations may have produced distinct outcomes: restrictions on withdrawals and incentives which are built into IDA and restricted asset account limits may have motivated low-education single mothers and families to save and helped them resist the temptation to spend. Accordingly, asset-building program rules could be designed carefully to achieve policy goals.

Findings from an alternate specification that measures the years since the programs or broad measures of more generous rules were implemented corroborate the IDA rule findings but not the unrestricted versus restricted asset limit findings. This is the first study (known to the authors) to look at the net relationships of restricted and unrestricted asset limits. The results are suggestive, but not conclusive, that restricted account asset limits have different effects on asset building than unrestricted asset limits do. Additional research on this topic could shed further light on the role that unrestricted asset limits, restricted account asset limits, and IDA programs play in asset building.

This study also shows that other non-asset related program rules have a relationship with the asset holdings of low-education single mothers and families. For example, vehicle asset limits and expanded categorical eligibility in the Food Stamp Program are positively related to vehicle assets and net worth. These findings suggest that potential program interactions and indirect effects of program rules on non-target areas are potentially important and could continue to be considered in future research.

The mixed results of this study and previous studies of the effects of asset limits indicate that further research on how people respond to the complex and contradictory incentive structure presented by asset limits and asset-building programs would be helpful. This additional

knowledge would make a meaningful contribution to the policy discussion and could lead to more effective asset policies for low-income people.

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X. APPENDIX TABLES

Appendix Table A-1. A Selection of Reported Effects of Means-Tested Social Programs on Asset Accumulation

Author	Data	Sample/Study Population	Method	Outcome	Key Explanatory Variables	Findings	Effect?
Blank and Ruggles (1996)	1986 and 1987 Survey of Income and Program Participation (SIPP).	All spells of single-motherhood (currently unmarried women caring for children).	Descriptive.	The percentage of families ineligible for welfare due to asset holding.	N/A.	The percentage of months for which single mothers were ineligible increased from 57% (based only on income eligibility) to 60.2% (both on income and asset eligibilities).	N/A.
Gruber and Yelowitz (1999)	1984 and 1993 SIPP and the Consumer Expenditure Survey (CEX).	All households with household head 18–64 and no member over 64 (regressions have more than 40,000 observations).	Instrumental variables regression. Control variables capture gender, age, race, education, marital status, state and year fixed effects, and state-year interactions.	Log of net worth and log of consumption.	Current and future Medicaid-eligible dollars; dummy for whether state has an asset test interacted with Medicaid dollars.	Medicaid eligibility has a significant negative effect on wealth and a strong positive association with expenditures. Medicaid effects are much stronger with an asset test. In 1993, Medicaid lowered eligible households' wealth by 16.3 percent.	Empirically: Medicaid—yes Medicaid asset test—yes.
Hubbard, Skinner, and Zeldes (1995)		Potential and actual social program recipients.	Theoretical and dynamic programming models.			Theoretically, social insurance programs with asset tests discourage precautionary saving (this effect would be present even in absence of asset test) and imply an implicit tax of 100 percent on wealth in the event of an earnings downturn or large medical expense.	Theoretically: program—yes asset test—yes.
Hurst and Ziliak (2006)	Panel Study of Income Dynamics (PSID).	281 at-risk female household heads with children, plus comparison groups.	Regression analysis with comparison groups and individual and state fixed effects.	Change in household liquid assets between 1994 and 2001.	Changes in state liquid asset limits, vehicle limits, and time limits between 1994–2001.	Subjects' savings have not responded economically or statistically to welfare reform induced changes in liquid asset limits, vehicle limits, or time limits. Low asset accumulation is not caused by asset limits but may be because of the consumption floor guaranteed by means-tested programs. A $1,000 increase in liquid assets limits increased asset ownership by no more than $40. A $1,000 increase in asset limits increased car ownership by 14.6 percent.	Empirically: AFDC/TANF asset test—no liquid assets—no vehicle ownership—yes.

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Appendix Table A-1 -- A Selection of Reported Effects of Means-Tested Social Programs on Asset Accumulation (continued)

Author	Data	Sample/Study Population	Method	Outcome	Key Explanatory Variables	Findings	Effect?
Nam (forthcoming)	1994 and 2001 PSID.	277 at-risk female household heads with children, plus comparison groups	Difference-in-difference approach.	The change in liquid asset holding between 1994-2001, vehicle ownership, and bank account ownership.	State liquid asset limit amount and years since asset test changed.	The earlier a state raised its countable asset limit, the more likely welfare recipients were to accumulate liquid assets and to possess bank accounts.	Empirically: AFDC/TANF years since asset test changed - yes.
Neumark and Powers (1998)	1984 SIPP.	675 male household heads 60–64 likely to be eligible for SSI.	Difference-in-difference approach. Identifies the effects of SSI from the difference—between states that do and do not supplement SSI—in the difference in saving between those likely and unlikely to receive SSI.	Change in net wealth, excluding housing, between waves 4 and 7.	State supplemental SSI benefits.	High SSI benefits reduce saving among households with heads approaching SSI eligibility who are likely to end up participating in the program; a $100 increase in SSI benefits decreases savings by $281.	Empirically: SSI—yes
O'Brien (2006)	Qualitative interview data from a convenient sample.	8 TANF participants in Alexandria, VA and 10 welfare-to-work program participants in Gaithersburg, MD.	Qualitative interview analysis.	TANF recipients' decision about TANF application.	N/A.	(1) The existence of asset limits -- or, just as importantly, the perception that these limits exist -- negatively impact the savings behavior of TANF recipients. (2) Nearly every individual feared having a bank account would jeopardized their eligibility for public assistance (p. 5). (3) Welfare recipients perceive TANF eligibility policies to be more stringent than they actually are. (4) The decision to apply for public assistance is typically an option of last resort -- after savings have dried up.	Qualitatively—yes.
Powers (1998)	National Longitudinal Survey of Youth, Young Women.	229 single mothers in both 1978 and 1983.	OLS regressions.	Change in total net wealth (excluding vehicles) between 1978 and 1983.	Changes in asset limits and asset test characteristics between 1978 and 1983.	Between 1978 and 1984, subjects in most states saved approximately 25 cents for each $1 increase in AFDC asset limits.	Empirically: AFDC asset test—yes.
Sullivan (2006)	1992, 1993, and 1996 SIPP.	5,221 single mothers with high school degrees or less.	Probit regression for vehicle ownership and OLS regression for vehicle equity.	Indicators for vehicle ownership and liquid asset ownership.	Indicators for whether each state has a vehicle limit, real dollar value of the vehicle limit, and real dollar value of total asset limit.	Asset restrictions do have an effect on vehicle assets, but no effect on liquid assets. Subjects in a state with a $1,500 vehicle asset exemption are 12 percent less likely to own a car than subjects in a state with a full vehicle exemption. Each $1,000 increase in vehicle exemption results in a 2.3 percent increase in car ownership.	Empirically: AFDC/TANF asset test—yes vehicle ownership—yes liquid assets—no.

Appendix Table A-2. A Selection of Reported Effects of IDAs on Asset Accumulation

Source	Data	Sample/Study Population	Method	Outcome	Key Explanatory Variables	Findings
Hogan,Solheim, Wolfgram, Nkosi, and Rodrigues (2004)	Qualitative data from Family Assets for Independence in Minnesota (FAIM)	25 participants in FAIM (income <200 poverty)	Qualitative	Saving for asset building (saving in IDAs)	N/A.	(1) Despite continuous financial vulnerability (e.g. job layoff and illness), majority of participants succeeded in saving in IDAs. (2) 75% of participants saved $30 per month (maximum monthly deposit) over a period of several years. (3) Social supports from FAIM outreach staff or fellow financial education class participants helped participants stay in IDA programs, especially among those without supports from family and friends. (4) Some reported that they learned budgeting, record keeping and planned saving skills from the required financial education class.
Mills, Gale, Patterson, and Apostolov (2006)	ADD Experiment (ADD-E) Data	Treatment group (N=412) or control group (N=428) randomly assigned from a pool of qualified applicants (income less than 150% poverty line and currently employed). Only those who completed a survey at enrollment and a 4-year followup survey were included.	Desriptive, OLS, and Probit.	Home ownership, home equity, business equity, and liquid assets.	ADD participation (treatment vs. control).	The IDA program: (1) Raised homeownership rates by almost 10 percentage points over 4 years for black renters, but reduced financial assets and business ownership. (2) Had no effects on homeownership for white renters, but their business equity rose. (3) Overall had no statistically significant effect on net worth.
Office of Community Services, DHHS (2004)	Asset For Independence Act (AFIA) Evaluation: Program tracking.	All IDA accounts opened by the end of the program's 4th year. 12,252 TANF eligible for with income <200% of poverty level with net worth <$10,000 were included.	Descriptive.	Saving performance in ADD acounts (savings in ADD accounts; matched withdrawal).	N/A.	(1) Average IDA balance was $592 per account. (2) Among 5,237 withdrawals from IDA accounts, 67% were matched withdrawals.
Schreiner et al. (2005)	American Dream Demonstration (ADD) Account Monitoring Data.	Program participants at 14 ADD programs across the United States (family income of less than 200% of poverty).	Descriptive, Probit (the probability of having at least $100 of net deposit in ADD account), and OLS (average monthly net deposit).	Saving performance in ADD acounts (savings in ADD accounts and whether participant made a matched withdrawal).	N/A for descriptive analysis. Demographics, income, welfare experience, assets and liabilities at the time of enrollment, and program characteristics for multivariate analyses.	(1) About 53 % saved at least $100 in ADD account and average net deposits were $537 (average monthly deposits were $21). (2) About 35% made matched withdrawal and the average value of matched withdrawals (including matches) was $2711. (3) Income and welfare receipt experience at the time of enrollment are not significantly associated with the probability of saving at least $100 after controlling demographic and other factors.(4) Program characteristics (financial education and match rate) are significantly associated with the probability of saving and average monthly net deposit.

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Appendix Table A-2 - A Selection of Reported Effects of IDAs on Asset Accumulation (continued)

Source	Data	Sample/Study Population	Method	Outcome	Key Explanatory Variables	Findings
Shobe and Christy· McMullin (2005)	Qualitative data from a North Carolina IDA program	9 low-income African American women	Qualitative	Saving for asset building (saving in IDAs)	N/A.	(1) Participants believed that IDAs gave low-income families opportunities for asset ownership, taught savings and investments skills, provided personalized supports, and helped them solve their credit problems. (2) A majority of interviewees reported that they saved extra beyond their IDA savings (maximum matchable savings=$1000).
Stegman and Faris (2005)	American Dream Demonstration (ADD) Account Monitoring Data and the Survey of Consumer Finances (SCF).	ADD program participants and SCF households with similar characteristics to ADD enrollees	Simulation (Compare actual savings in ADD accounts and predicted savings without ADD using estimaton based on the SCF sample.	ADD's saving effect [(ADD balance - predicted annualized savings)*years in ADD].	N/A.	(1)The median ADD participant has saved $117 more than he/she would have saved without ADD participation under an assumption of no shuffling (no transferred funds to ADD accounts from other accounts). (2) ADD's saving effect is larger among whites ($ 257 in median) than Blacks ($56) and Hispanics ($175). (3) Under an assumption of 50% of shuffling (50% of savings in other accounts transferred to ADD accounts), the median saving effect of ADD is $40.

Appendix Table A-3. The Effect of the Number of Years since State Program Rules Implemented on Liquid Asset Holdings of Low-Education Single Mothers and Families, Age 18–54, 1991–2003 SIPP

	Linear Probability Ind. Liquid Assets > 0		Tobit Ln (Liquid Assets)	
	Mothers	**Families**	**Mothers**	**Families**
AFDC/TANF				
Years since unrestricted limit > $1,000	0.005	0.006	0.117	0.072
	[0.005]	[0.003]+	[0.065]+	[0.021]**
Years since at least one vehicle exempted	0.005	0.003	0.084	0.027
	[0.005]	[0.003]	[0.057]	[0.019]
Years since restricted account asset limits available	0.002	0.001	0.004	0.000
	[0.004]	[0.003]	[0.050]	[0.017]
Ln (maximum monthly benefit for a family of 3) ($)	0.025	-0.040	-0.459	-0.455
	[0.085]	[0.096]	[1.391]	[0.431]
Food Stamps				
Years since at least one vehicle exempted	-0.002	-0.002	-0.088	-0.050
	[0.006]	[0.006]	[0.127]	[0.046]
Years since expanded categorical eligibility in place	-0.008	0.001	-0.197	0.003
	[0.012]	[0.006]	[0.153]	[0.050]
IDA				
Years since IDAs available	-0.001	0.006	-0.011	0.077
	[0.006]	[0.002]*	[0.069]	[0.023]**
EITC and Minimum Wage				
State EITC ($100)	-0.008	-0.001	-0.101	-0.011
	[0.003]*	[0.002]	[0.056]+	[0.018]
Percentage of state EITC refundable (0-1)	0.032	0.014	0.661	0.126
	[0.028]	[0.011]	[0.464]	[0.150]
State minimum wage for FLSA covered categories ($)	0.002	0.000	0.215	0.117
	[0.025]	[0.015]	[0.308]	[0.103]
State minimum wage for non-FLSA categories ($)	0.014	0.004	0.228	0.057
	[0.014]	[0.007]	[0.205]	[0.068]
Sample Size	16,126	79,946	15,632	77,552

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively. Standard errors in brackets. All regressions weighted and include state and year fixed effects and all the same control variables shown in tables 6-8. All dollar values are in year 2000 dollars. Standard errors adjusted for clustering by state in linear probability models. Sample size varies because Tobit models exclude observations in top 3 percentiles of liquid asset values.

Appendix Table A-4. The Effect of the Number of Years since State Program Rules Implemented on Vehicle Asset Holdings of Low-Education Single Mothers and Families, Age 18–54, 1991–2003 SIPP

	Linear Probability Ind. Owns Vehicle		Tobit Ln (Vehicle Equity)	
	Mothers	**Families**	**Mothers**	**Families**
AFDC/TANF				
Years since unrestricted limit > $1,000	0.006	0.001	0.140	0.009
	[0.005]	[0.002]	[0.071]*	[0.020]
Years since at least one vehicle exempted	-0.006	0.001	-0.080	-0.039
	[0.005]	[0.002]	[0.063]	[0.018]*
Years since restricted account asset limits available	-0.006	0.000	-0.089	0.010
	[0.005]	[0.002]	[0.054]	[0.016]
Ln (maximum monthly benefit for a family of 3) ($)	0.019	0.035	-0.150	0.669
	[0.091]	[0.040]	[1.415]	[0.397]+
Food Stamps				
Years since at least one vehicle exempted	0.007	-0.008	0.248	-0.011
	[0.008]	[0.003]*	[0.140]+	[0.043]
Years since expanded categorical eligibility in place	0.001	0.008	0.161	0.136
	[0.008]	[0.006]	[0.163]	[0.047]**
IDA				
Years since IDAs available	0.008	0.001	0.088	0.002
	[0.004]+	[0.003]	[0.075]	[0.022]
EITC and Minimum Wage				
State EITC ($100)	0.001	-0.003	-0.031	-0.015
	[0.004]	[0.002]+	[0.065]	[0.018]
Percentage of state EITC refundable (0-1)	-0.029	-0.009	0.060	0.076
	[0.047]	[0.014]	[0.538]	[0.145]
State minimum wage for FLSA covered categories ($)	0.020	0.007	0.322	0.099
	[0.027]	[0.008]	[0.341]	[0.098]
State minimum wage for non-FLSA categories ($)	0.004	0.000	-0.032	-0.019
	[0.012]	[0.007]	[0.223]	[0.064]
Sample Size	16,126	79,946	15,622	77,551

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively. Standard errors in brackets. All regressions weighted and include state and year fixed effects and all the same control variables shown in tables 6-8. All dollar values are in year 2000 dollars. Standard errors adjusted for clustering by state in linear probability models. Sample size varies because Tobit models exclude observations in top 3 percentiles of vehicle equity values.

Appendix Table A-5. The Effect of the Number of Years since State Program Rules Implemented on Net Worth of Low-Education Single Mothers and Families, Age 18–54, 1991–2003 SIPP

	OLS Net Worth (Incl. Home)		OLS Net Worth (Excl. Home)	
	Mothers	**Families**	**Mothers**	**Families**
AFDC/TANF				
Years since unrestricted limit > $1,000	39.415	-119.859	-37.755	-64.708
	[110.132]	[260.957]	[48.927]	[97.772]
Years since at least one vehicle exempted	56.871	311.429	-24.583	-67.465
	[112.276]	[228.548]	[28.883]	[94.778]
Years since restricted account asset limits available	-208.872	-664.437	-62.127	-47.318
	[105.423]+	[225.764]**	[46.375]	[69.909]
Ln (maximum monthly benefit for a family of 3) ($)	-1184.869	3955.821	-232.479	-2005.675
	[2,480.576]	[5,904.362]	[647.066]	[2,828.470]
Food Stamps				
Years since at least one vehicle exempted	-429.264	-493.249	18.707	266.732
	[241.194]+	[488.580]	[59.928]	[130.271]*
Years since expanded categorical eligibility in place	18.334	-334.684	124.412	-45.878
	[255.493]	[554.868]	[95.175]	[186.113]
IDA				
Years since IDAs available	-157.138	273.132	-31.199	232.677
	[127.507]	[234.935]	[35.112]	[119.981]+
EITC and Minimum Wage				
State EITC ($100)	-178.564	93.694	-25.277	63.584
	[140.591]	[298.133]	[52.703]	[71.747]
Percentage of state EITC refundable (0-1)	498.854	-1650.928	197.228	433.134
	[1,370.837]	[1,941.355]	[447.923]	[484.404]
State minimum wage for FLSA covered categories ($)	-336.495	2999.611	165.254	900.510
	[605.204]	[1,494.072]+	[340.985]	[527.808]+
State minimum wage for non-FLSA categories ($)	-165.479	922.522	75.745	60.509
	[303.291]	[738.619]	[106.221]	[361.086]
Sample Size	12,496	60,524	12,507	60,536

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively. Standard errors in brackets. All regressions weighted and include state and year fixed effects and all the same control variables shown in tables 6-8. All dollar values are in year 2000 dollars. Standard errors adjusted for clustering by state. Sample sizes vary because top and bottom three percentiles of net worth are dropped.

XI. APPENDIX: PROGRAM RULES DATA DOCUMENTATION

General Notes

Our analysis uses yearly program rule data. Since AFDC/TANF and Food Stamp Program variables are available on a monthly basis, we use the July values of those variables for the entire year. State IDA data come from annual sources.

AFDC/TANF Rules

1. Unrestricted Asset Limit for Recipients

Sources: Welfare Rules Database (WRD)
Transfer Income Model (TRIM3), "Rules of Simulated Programs," http://trim.urban.org/T3Welcome.php

Assumptions:

- One adult and two children in family
- If the asset limit is broken down by liquid and illiquid asset limits, liquid asset limit will be chosen.
- Unit does not include anyone age 60 or over.
- Recipient has signed a self-sufficiency pact (Missouri only).
- Recipient cooperates with case plan (Oregon JOBS/JOBS Plus only).
- No limit = highest capped value in a given year

2. Vehicle Asset Limit for Recipients, At Least One Vehicle Exempt

Sources: Welfare Rules Database (WRD) and Urban Institute databases
First Annual TANF Report to Congress (August 1998), "Specific Provisions of State Programs"

Values: 0/1 (no/yes)

3. Restricted Account Asset Limit for Recipients

Sources: Welfare Rules Database (WRD)

Assumptions:

- One adult and two children in family
- New Mexico (1999-2003) does not restrict amounts saved for postsecondary education or business capitalization, but caps the amount being saved for a home purchase. We code this as no limit on restricted assets.
- Amounts listed as variable or determined by counties are treated as missing for Colorado (1999-2003) and Florida (2002-2003).
- Wisconsin (2003) refers only to WISCAP IDA program, the only one of three IDA programs for which data were available.
- No limit = highest capped value in a given year

4. Maximum Monthly Benefit for Family of Three

Sources: Welfare Rules Database (WRD)

Transfer Income Model (TRIM3), "Rules of Simulated Programs," http://trim.urban.org/T3Welcome.php

Assumption: One adult and two children in family

Note: Values come from TRIM3 (1986-1995) and the WRD (1996-2000)

Food Stamp Program Rules

1. FSP Vehicle Asset Limit, At Least One Vehicle Exempt

Sources: Center on Budget and Policy Priorities (2001-2005); FNS State Options Reports[1]; FNS waiver documentation

Values: 0/1 (no/yes)

Assumptions:

- Ignores special provisions for vehicles used to earn a living (for example, taxicabs and delivery trucks).
- Monthly data: January 1996-June 2001, October 2001, February 2002, February 2003, January 2004; January 1996-September 2001 (Connecticut); February 1996-December 2003 (Montana). Missing values filled in with data from closest month with nonmissing data.

Notes: An option to apply vehicle rules from TANF or other low-income programs, if they were more liberal than the standard FSP rules, was extended to all states as of July 2001. On the basis of waiver documentation, three states are coded as exempting one vehicle per unit before then: Connecticut (January 1996 through September 2001), Michigan (January 1996 through September 1999), and Montana (February 1996 through December 2003). All other states are coded as zero for January 1996 through June 2001.

2. Expanded Categorical Eligibility

Sources: FNS State Options Reports, Federal Register (2000), FNS "Letter to Regions on Categorical Eligibility" (1999)

Values: 0/1 (no/yes)

Assumptions:

- Monthly data: January 1996-June 1999, April 2002, February 2003, October 2003, September 2004. Missing values filled in with data from closest month with nonmissing data.

Notes: all states coded as 0, January 1996-June 1999

[1] FNS State Options reports refers to U.S. Department of Agriculture 2002c, 2003a, 2003b, and 2004b.

State IDA Program Rules

1. Maximum Match Rate

   Assumption:
   - No IDA = 0

2. Maximum Savings Amount Qualified for Match

   Notes: Over entire participation period.

   Assumption:
   - No IDA = 0
   - No limit = highest capped value in a given year

3. Eligibility Beyond AFDC/TANF Recipients

   Values: 0/1 (no/yes)

   Assumption:
   - No IDA = 0

   Sources for all IDA variables:
   CSD 2005 Survey on State IDA Programs.
   CSD's State IDA Policy Information
   (http://gwbweb.wustl.edu/csd/policy/states.htm).
   Welfare Rules Database (WRD).
   TANF Annual Report (1999-2004): Specific Provisions of State Program.
   CFED's IDA directory from IDA network
   (http://www.cfed.org/focus.m?parentid=31&siteid=374&id=374).

   Notes: A state IDA program is defined as a saving program that (1) matches savings when withdrawn for pre-defined purposes; (2) is funded at least partially from state government (programs funded solely with private foundations are excluded); (3) is established through state legislation or administrative rule-making; and (4) is actually implemented.

Other Policies

1. State EITC

   Sources: David Neumark and William Wascher (June 2001), "Using the EITC to Help Poor Families: New Evidence and a Comparison with the Minimum Wage," *National Tax Journal*, Vol. 54 (2).
   Nicholas Johnson (December 2001), Center on Budget and Policy Priorities, "A Hand Up: How State Earned Income Tax Credits Help Working Families Escape Poverty in 2001," http://www.cbpp.org/12-27-01sfp.pdf.

Nicholas Johnson, Bob Zahradnik, and Joseph Llobrera (April 2003),), Center on Budget and Policy Priorities, "State Income Tax Burdens On Low-Income Families In 2002," http://www.cbpp.org/4-11-03sfp.htm.

Nicholas Johnson, Joseph Llobrera, and Bob Zahradnik (March 2003), Center on Budget and Policy Priorities, "A Hand Up: How State Earned Income Tax Credits Help Working Families Escape Poverty in 2003," http://www.cbpp.org/3-3-03sfp.htm.

State of Minnesota (January 2000), "The Federal Earned Income Tax Credit and The Minnesota Working Family Credit."

State of Minnesota (January 2004), "The Federal Earned Income Tax Credit and The Minnesota Working Family Credit," http://archive.leg.state.mn.us/docs/2004/mandated/040054.pdf

State of Minnesota (February 2006), "The Federal Earned Income Tax Credit and The Minnesota Working Family Credit," http://www.house.leg.state.mn.us/hrd/pubs/feicwfc.pdf.

State of Minnesota (1999), Working Family Credit for Tax Year 1998, http://www.taxes.state.mn.us/taxes/individ/prior_years/1998/algorithms/wfc2calc.pdf

State of Minnesota (2000), Working Family Credit for Tax Year 1999, http://www.taxes.state.mn.us/taxes/individ/prior_years/1999/algorithms/wfc.pdf

State of Minnesota (2001), Working Family Credit for Tax Year 2000, http://www.taxes.state.mn.us/taxes/individ/prior_years/2000/algorithms/wfc.pdf

State of Minnesota (2002), Working Family Credit for Tax Year 2001, http://www.taxes.state.mn.us/individ/prior_years/2001/algorithms/wfcalgo.pdf

State of Minnesota (2003), Working Family Credit for Tax Year 2002, http://www.taxes.state.mn.us/individ/prior_years/2002/algorithms/ wfcalgo.pdf

State of Minnesota (2004), Working Family Credit for Tax Year 2003, ttp://www.taxes.state.mn.us/taxes/individ/prior_years/2003/ algorithms/wfc_formula_03.pdf

Assumptions:

- Family of one adult and two or more qualifying children
- Maximum state EITC benefit (generally at end of phase-in range)
- Maryland's EITC (1998-2003) is equal to the value of its non-refundable EITC.

Notes: Minnesota's EITC (1999-2003) varies from other states as the state does not offer a percentage of the Federal EITC. Minnesota offers an EITC composed of varying percentages of earnings dependent on recipient income level.

2. Percentage of State EITC Refundable

Sources: David Neumark and William Wascher (June 2001), "Using the EITC to Help Poor Families: New Evidence and a Comparison with the Minimum Wage," *National Tax Journal*, Vol. 54 (2).

Nicholas Johnson (December 2001), Center on Budget and Policy Priorities, "A Hand Up: How State Earned Income Tax Credits Help Working Families Escape Poverty in 2001."

State of Minnesota (January 2000), "The Federal Earned Income Tax Credit and The Minnesota Working Family Credit."

Assumptions:

- Maryland (1998-2000) has both a refundable and non-refundable EITC. For these observations, the variable is equal to the value of the refundable EITC divided by the value of the non-refundable EITC.

3. Applicable Minimum Wage for Federally (FLSA) Covered Categories

Sources: U.S. Department of Labor, "History of Federal Minimum Wage Rates," http://www.dol.gov/esa/minwage/chart.htm.
Richard Nelson (1985-2001), *Monthly Labor Review*.
Council of State Governments, *The Book of States*, Vols. 27, 28, 30, 31, 33.
Labor Commission of Utah, "Minimum Wage," http://www.labor.state.ut.us/Utah_Antidiscrimination___Labo/Employment_Standards/minwage/minwage.htm.
Jim Mosley (3 May 1990), *St. Louis Post-Dispatch*, "State Minimum Wage To Take Effect Aug. 28," pg 8A.
Larry Tye (2 April 1991), *Boston Globe*, "Minimum Wage Increases To $4.25," pg 3.

Notes: This wage is the higher of the state or federal minimum wage. In general, it is the minimum wage covering the majority of workers in a state for the majority of the month. Although not all state minimum wages cover FLSA-covered occupations, it is assumed that if a state has a higher minimum wage than the federal level, that state minimum wage is effective for FLSA-covered workers (which was the case in 1999 and 2000).

4. State Minimum Wage for Non-FLSA Covered Categories

Sources: Richard Nelson (1985-2001), *Monthly Labor Review*.
Council of State Governments, *The Book of States*, Vols. 27, 28, 30, 31, 33.
Labor Commission of Utah, "Minimum Wage," http://www.labor.state.ut.us/Utah_Antidiscrimination___Labo/Employment_Standards/minwage/minwage.htm.
Wage and Hour Administration of Alaska, "Minimum Wage Standard and Overtime Hours," http://www.labor.state.ak.us/lss/whact.htm
Industrial Welfare Commission of California, "Summary of Interim Wage Order—2000," http://www.dir.ca.gov/Iwc/SummaryInterimWageorder2000.html
Connecticut General Assembly, "Wages," http://www.cga.ct.gov/2001/pub/Chap558.htm
Office of Labor Law Enforcement of Delaware, "Minimum Wage," http://www.delcode.state.de.us/title19/c009/index.htm
Department of Employment Services of the District of Columbia, "Minimum Wages," http://www.does.dc.gov/does/cwp/view,a,1234,q,539346.asp
State Legislature of Iowa, "Iowa Code 2003: Section 91D.1," http://www.legis.state.ia.us/IACODE/2003/91D/1.html
Massachusetts General Laws, "Minimum Fair Wages," http://www.mass.gov/legis/laws/mgl/gl-151-toc.htm
State Legislature of Minnesota, "Labor Standards and Wages," http://www.revisor.leg.state.mn.us/stats/177/

New Hampshire General Court, "Minimum Wage Law," http://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-XXIII-279.htm

Jim Mosley (3 May 1990), *St. Louis Post-Dispatch*, "State Minimum Wage To Take Effect Aug. 28," pg 8A.

Larry Tye (2 April 1991), *Boston Globe*, "Minimum Wage Increases To $4.25," pg 3.

Assumptions:

- A state minimum wage at or below the federal minimum wage for the majority of a state's state-month observations from 1986-2003 is assumed to cover Non-FLSA workers in that state at all times. Otherwise, it is assumed to cover only FLSA workers, in which case the Non-FLSA minimum wage is 0. This assumption is based on the similarities between the exceptions to state minimum wage coverage in states with a higher-than-federal minimum wage and the exceptions to FLSA minimum wage coverage.

Notes: The state minimum wage is often used to cover workers who are not covered by the FLSA, 28 percent of workers in 1999. In most states (82 percent of our state-month observations), the state minimum wage is less than or equal to the federal minimum wage, suggesting non-FLSA coverage. For some states with a state minimum wage higher than the federal minimum wage, the higher wage covers FLSA workers only. The FLSA does not cover most workers in small businesses or in businesses where no interstate commerce is involved, workers in seasonal or recreational jobs, workers delivering newspapers or engaged in fishing operations, many workers in private households, and executive, administrative, and professional employees.