TANF and SNAP Asset Limits and the Financial Behavior of Low-Income Households

A Report to The Pew Charitable Trusts

Maureen Pirog, Ph.D., principal investigator

School of Public and Environmental Affairs

Indiana University

1315 E. Tenth St.

Bloomington, IN 47405

812-855-0732

pirog@indiana.edu

Edwin Gerrish, Ph.D., University of South Dakota, co-PI

Lindsey Bullinger, Indiana University, co-PI

Introduction

Holding assets is an important source of security against sudden job loss and other income shortfalls as well as spikes in expenditures such as medical expenses. Assets can also generate returns that bolster future consumption and improve a household's well-being over time. Asset accumulation of higher-income families is encouraged through tax incentives such as the home mortgage interest deduction and tax breaks for contributions to retirement accounts, college savings plans, and medical savings accounts. Low-income families, however, are less likely to invest in education, homes, businesses, or retirement, often making them unable to take advantage of such institutional structures. Rather, many traditional social programs that assist low-income populations focus on services that fulfill basic and short-term consumption needs. Moreover, social program eligibility requirements historically have dissuaded low-income families from accumulating assets. These diverging savings structures have large implications for patterns of wealth accumulation and inequality in America. For example, although the Great Recession inflicted hardship on many families across the United States, it was especially difficult for low-income households that did not have the resources to cushion themselves against sudden losses such as unemployment, foreclosure, or other economic catastrophes.

The U.S. social safety net includes several programs to provide assistance to low-income families, such as Temporary Assistance for Needy Families (TANF) and the Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps. The federal government provides the majority of funding for these two programs through block grants and sets general eligibility guidelines. States administer the programs and have the authority to set more flexible eligibility requirements. Eligibility is generally restricted to households that meet both the income requirements and asset limits when the latter exists. As such, the presence of asset limits for SNAP and TANF, the limit amounts, and the types of assets included vary across programs and states.

There are no federal requirements for TANF asset tests. States have the discretion to impose a limit, set the amount of the limit, and decide which assets count toward a family's resources. As such, asset tests vary widely across states and have changed quite a bit over time. For example, in 2015, liquid asset[1] limits for TANF ranged from no limit on liquid asset ownership to anywhere between $10,000 in total allowed assets in Delaware to as little as $1,000 in several states. Thirty-nine states allow at least one vehicle to be exempt from an asset test.

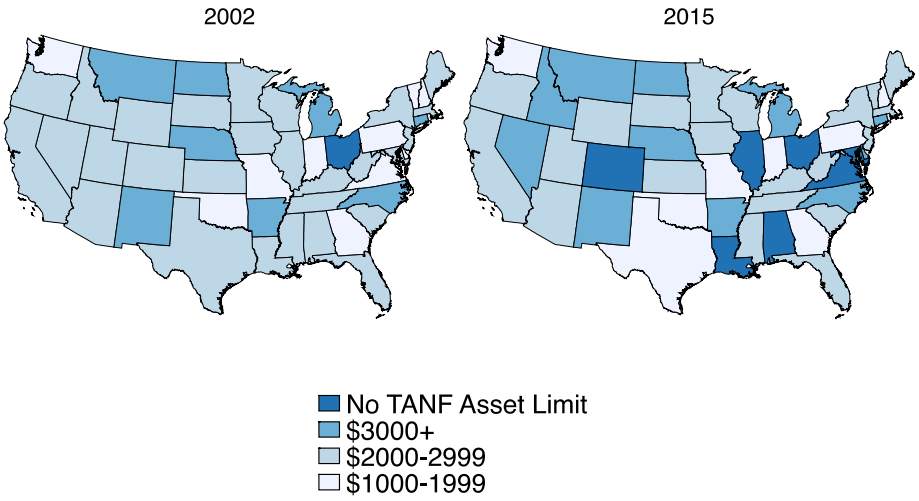
The SNAP program, on the other hand, has a liquid asset limit set by the federal government. Currently, households may have $2,250 in resources, or $3,250 if the household includes an elderly or disabled individual. States can relax or eliminate their asset tests, and many have. Although most states removed their asset limits for SNAP, the asset limits that remain range from $2,000 to $25,000. Resources such as homes, property, supplemental security income benefits, TANF benefits, and most retirement funds do not count toward the asset limit. The treatment of vehicles in asset testing varies across states. States typically take one of the following approaches regarding vehicles: exempting all vehicles, exempting one vehicle per household or driver, or exempting the vehicle's value or equity up to a certain threshold.

Whether these asset limits are good public policy continues to spark debate. Supporters of limitations on asset holdings argue that families with substantial assets should not be eligible for government assistance, as they demonstrate insufficient need for public assistance. Moreover, without asset limits, program participants can take advantage of program generosity while maintaining liquid or property wealth and proliferating program growth. Opponents of asset limits maintain that these restrictions discourage low-income families from saving and impede their goals of achieving financial security and self-sufficiency. Whether either of these claims is true, however, remains largely unanswered.

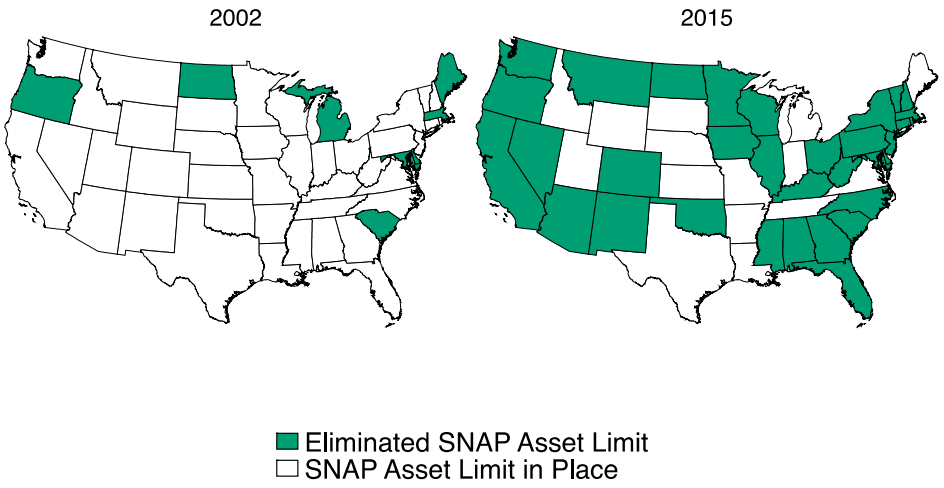
Throughout the past 15 years, federal- and state-level program asset limit rules for both TANF and SNAP have changed dramatically. (Table A.3 in the appendix shows the dates when states changed their policies.) Most policy changes have relaxed asset limits in an attempt to encourage savings among low-income families, though some states—for example, Idaho and Michigan in 2011—have recently reinstated their asset limits for SNAP (Government Accountability Office 2012). Changes to SNAP asset testing have largely been due to the widespread implementation of broad-based categorical eligibility (BBCE), which allows states to expand SNAP eligibility to households that receive noncash TANF-funded benefits.[2] Figure 1 shows the asset limit ranges for TANF and SNAP in 2002 compared with 2015.

Figure 1

Changes in Liquid Asset Limits in TANF and SNAP



Note: Hawaii's TANF asset limit was $5,000 in 2002 and was eliminated by 2015. Alaska's TANF asset limit was $2,000 in both 2002 and 2015.



Note: Hawaii had a SNAP asset limit in 2002 but eliminated it by 2015. Alaska had a SNAP asset limit in both 2002 and 2015.

Despite the contention surrounding the role of asset limits in program eligibility, we know little about how asset limits actually affect financial decision-making. The answer to this question is relevant for several reasons. First, if families spend down their assets to qualify for TANF or SNAP, they are less capable of weathering negative income and health shocks and may remain on public assistance programs longer. Alternatively, program costs may be lower if asset limits reduce the number of people seeking assistance because they were able to accumulate precautionary savings. In addition, there are administrative cost implications of asset limits for states and program participants. The verification of assets by states and accumulation of proof of asset ownership by prospective program participants can be time-consuming and costly. Eliminating asset limits reduces the administrative burden of states and very likely reduces the stigma and burden of the very families these programs are designed to help (The Pew Charitable Trusts 2016).

In this report, we examine whether TANF and SNAP asset limits affect program participation and the financial behaviors of participants. We use data from the Survey of Income and Program Participation (SIPP) from the 2001, 2004, and 2008 panels, containing data on households and families from 2000 to 2013. SIPP covers a wide variety of important subjects, including program participation as well as liquid and capital assets, such as vehicle and home ownership. Combined with policy rules for TANF and SNAP from the Welfare Rules Databook on State Policies, published by the Urban Institute, and the United States Department of Agriculture's SNAP Policy Database, we can study how changes in the rules regarding how these programs treat assets affect program participation and financial decision-making.

Key findings include improvements in the asset holdings of low-income households from eliminating or relaxing asset limits that should increase self-sufficiency. We also find reductions in program participation. Vehicle asset limits are more binding than liquid assets, likely because low-income households hold a substantial proportion of their wealth in vehicles. Finally,

removing TANF liquid asset limits appears to have stronger effects on total wealth accumulation than removing SNAP liquid asset limits, possibly because income eligibility restrictions are generally lower for TANF than for SNAP.

Part I: Asset limits and program participation

Asset tests unambiguously affect eligibility for programs. For example, SNAP households have fewer assets and less wealth than other low-income non-SNAP-participating households (Ratcliffe et al. 2016). Similarly, adopting a BBCE increases the number of households that are eligible for SNAP (Laird and Trippe 2014; Trippe and Schechter 2010).

Eligibility is not the same as participation, however, and asset tests may reduce participation among eligible households even if their assets are below the limit. For example, eligible households may choose not to participate out of concern for having to document their assets, or incorrectly believing that ownership of certain assets may leave them ineligible.

Though scarce, previous research suggests that program participation responses to changes in asset limits differ across TANF and SNAP. After removing asset limits for the TANF program, states had no increase in the number of TANF recipients or applicants (The Pew Charitable Trusts 2016). States with less restrictive SNAP asset limits have higher participation rates, and adopting a BBCE is associated with increases in SNAP participation (Mabli et al. 2014; Ratcliffe, McKernan, and Finegold 2008). Research on how vehicle asset limits affect SNAP participation is less conclusive. Some research finds that exempting vehicles from asset tests increases SNAP participation, while other research does not (Ratcliffe, McKernan, and Finegold 2008; Klerman and Danielson 2011; Hanratty 2006).

In our study, we compare TANF and SNAP program participation before and after a state changed its liquid and vehicle asset limits with that of states that did not change their asset limits at the same time. Specifically, we examine four policy changes: (1) eliminating or relaxing liquid asset limits for SNAP,[3] (2) eliminating or relaxing liquid asset limits for TANF, (3) eliminating or relaxing vehicle asset limits for SNAP, and (4) eliminating or relaxing vehicle asset limits for TANF.

We limit our sample to households with incomes that never exceed 185 percent of the federal poverty line (FPL) from all 50 states plus the District of Columbia.[4] We measure program participation with a binary variable that equals one for receiving any benefit amount in the past month, six months, 12 months, or ever (since the beginning of our sample period in 2000), and zero otherwise. Figures 2a and 2b show the differences in program participation by whether a state eliminated or relaxed its liquid or vehicle asset limit within the study period.

Figure 2a

Program Participation by State Policy Changes, TANF

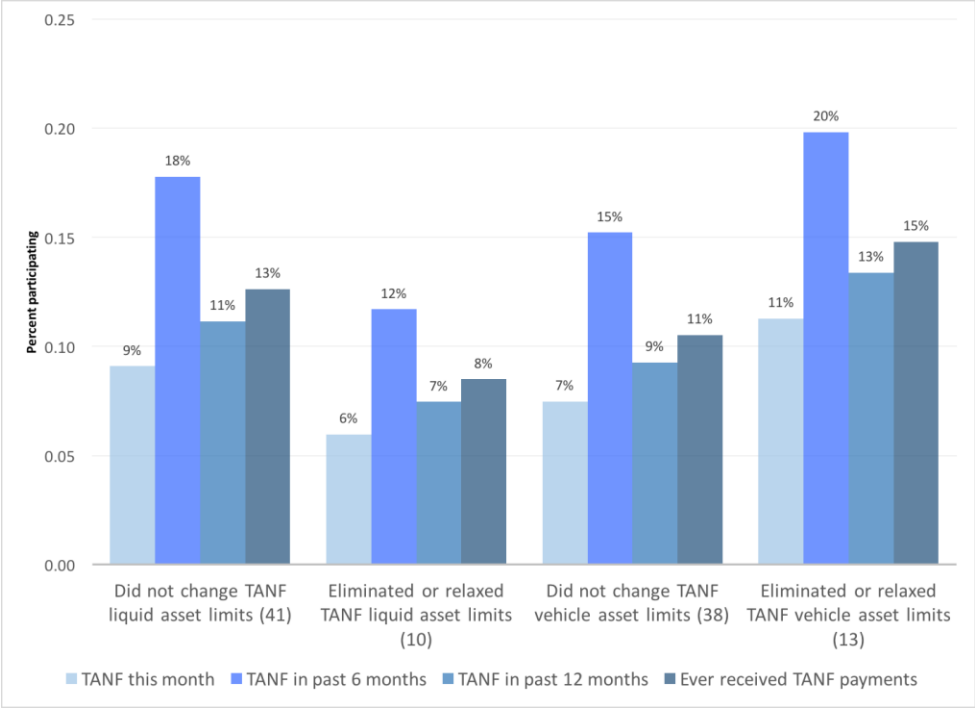
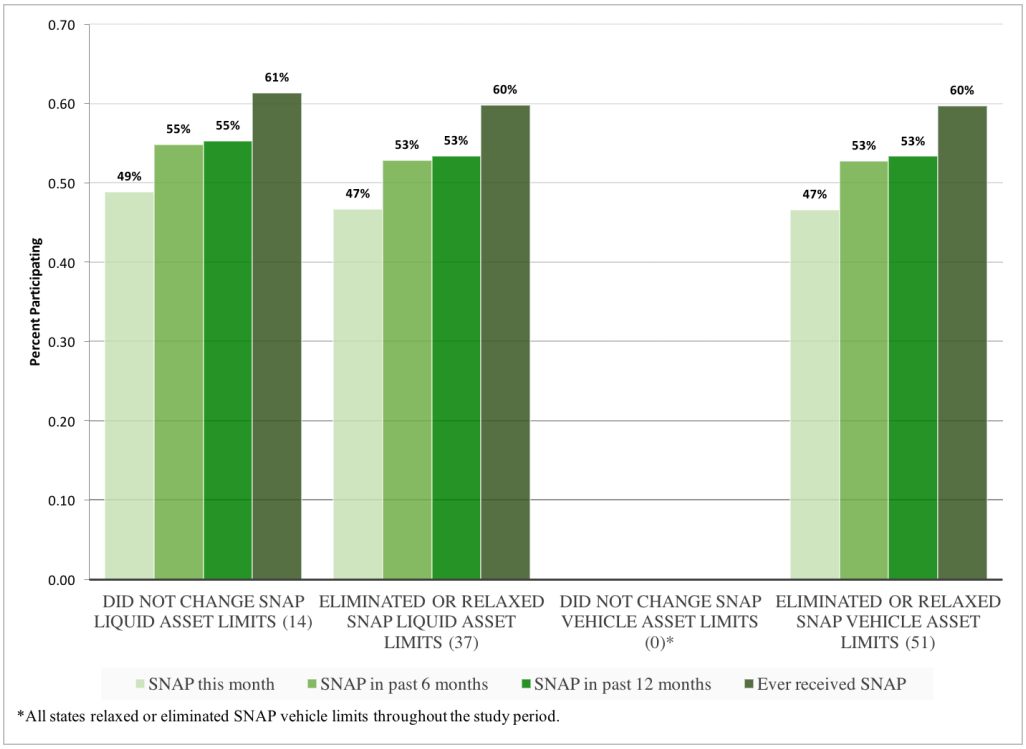


Figure 2b

Program Participation by State Policy Changes, SNAP



*All states relaxed or eliminated SNAP vehicle limits throughout the study period.

Sixty percent of the families in our sample had ever received SNAP benefits, with about 48 percent receiving SNAP benefits in the past month. TANF participation—not surprisingly, due to its typically more restrictive income requirements—is much lower: Some 17 percent of the sample had ever received TANF payments, with about 9 percent receiving TANF payments in the past month.

When comparing program participation across states, we compare households in 10 states that eliminated or relaxed their TANF liquid asset limits during the study period with their counterparts in states that did not. We also compare those in 13 states that eliminated or relaxed their TANF vehicle asset limit rules with households in states that did not change these limits. Similarly, we compare those in 37 states that eliminated or relaxed their SNAP liquid asset limits with those in states that did not. All states and the District of Columbia relaxed their SNAP vehicle limits, so we compare families before and after the policy change with their counterparts residing in states that did not change their policies at the same time. Since we are estimating the effect of eliminating or relaxing asset limits, including both states that had relaxed asset limits throughout the entire study period and states that never relaxed asset limits throughout the period would conflate our comparison group. For this reason, we dropped states that had relaxed asset limits throughout the entire study period.

When making these comparisons, we take into account household-level characteristics such as the age, race, and education of the household head, the family structure, and the number of adults in the household. The analysis also considers characteristics that may be different across states and over time and may affect social safety net program participation. These characteristics include macroeconomic conditions, poverty rates, state per capita income, minimum wage levels, and other program-specific policies. Finally, we consider differences across states that do not change over time that may be related to a state's social safety net generosity, temporal changes in program participation that occur nationwide, and underlying secular trends in program participation specific to each state.

Overall, we find that eliminating or relaxing a liquid asset limit had no detectable effect on SNAP or TANF participation in the past month, six months, or 12 months. (See Figure 3.) When we limit the sample to those who have previously participated in each program—and therefore have some familiarity with the program—we find evidence suggesting that eliminating or relaxing SNAP liquid asset limits reduces the probability that a household participated in SNAP in the past month.

Figure 3

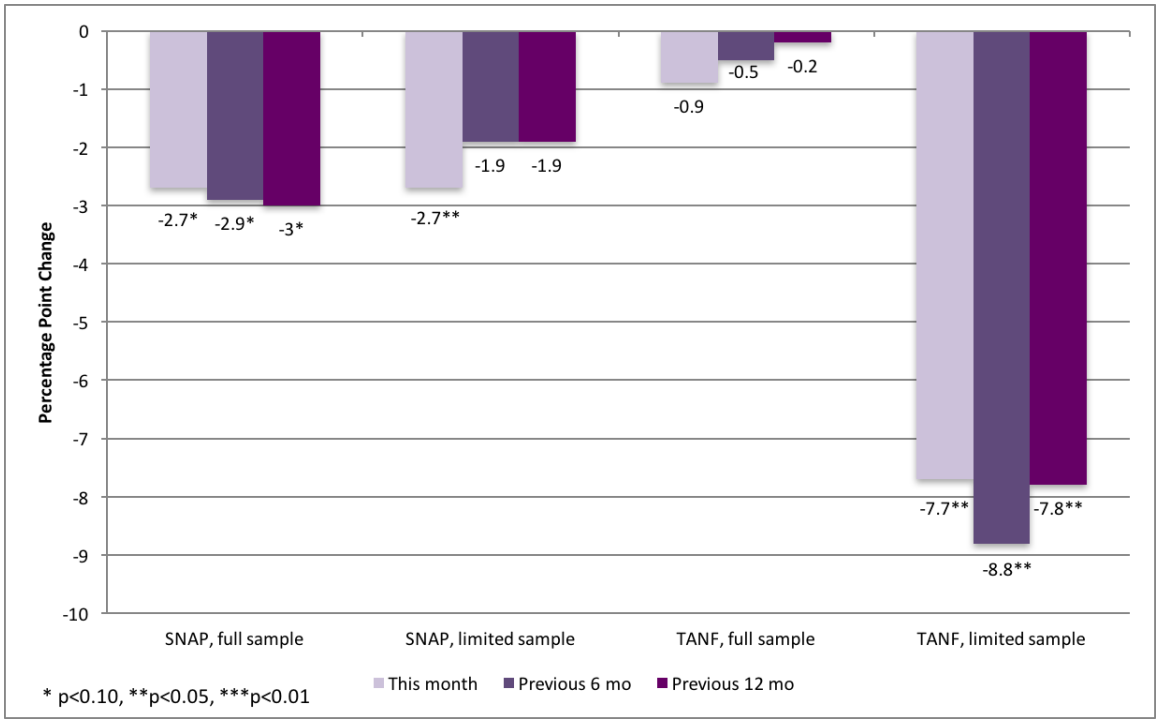
Effect of Eliminating or Relaxing Liquid Asset Limits on Program Participation

Eliminating or relaxing vehicle limits for both programs appears to be more binding for low-income households. (See Figure 4.) Among the full sample, we find that exempting vehicles from SNAP asset tests reduces SNAP participation by about 3 percentage points. This effect is consistent across all three measures of participation: participation in the past month, the past six months, and the past 12 months. The average SNAP participation rate of states that eliminated their vehicle asset limits was 47 to 60 percent, depending on the duration (the past month, the past six months, or the past 12 months). Relative to a mean participation rate of 54 percent, this effect represents a reduction in program participation of about 5 percent.[5] The estimated effect of relaxing or removing TANF vehicle asset limits suggests similar changes: a reduction in TANF participation by about 1 percentage point, or between 2 and 8 percent.

When we limit the sample to households that previously participated in these programs, the effects generally become stronger. For example, relaxing or removing vehicle asset limits reduces SNAP participation by 2 to 3 percentage points and reduces TANF participation by 7 to 8 percentage points. This larger effect for TANF is likely due to our ability to better capture households that are TANF-eligible.

Figure 4

Effect of Eliminating or Relaxing Vehicle Asset Limits on Program Participation



Together, these results conclude that liquid asset limits do not appear to be binding in terms of program participation. Removing them can reduce administrative costs and burden, without increasing program participation (The Pew Charitable Trusts 2016). Vehicle asset limits appear to be far more relevant for low-income households. Exempting vehicles from asset tests reduces program participation, a finding we discuss in detail in the next section.

Part II: Asset limits and asset holding

Asset limits help direct public tax dollars to families most in need, as determined by financial security. But applicants may spend down their resources to qualify for assistance programs. Doing so may prevent families from growing their savings and wealth and becoming self-sufficient. Though merely suggestive, previous research finds that SNAP households in BBCE states have higher assets than those in non-BBCE states (Ratcliffe et al. 2016). For example, one study found that those living in BBCE states are more likely to have a bank account and to have at least $500 in the account, though the authors found no difference in liquid asset amounts, net wealth, or vehicle ownership (Ratcliffe et al. 2016).

Among studies that can identify causal effects of these policies, research indicates that the relationships between asset limits and asset holdings are nuanced. Relaxing asset limits for both SNAP and TANF has been shown to increase vehicle ownership but has shown no effect on liquid asset holdings and negligible or inconclusive effects on net worth (Baek and Raschke 2016; Owens and Baum 2012; McKernan, Ratcliffe, and Nam 2010; Sullivan 2006; Hurst and Ziliak

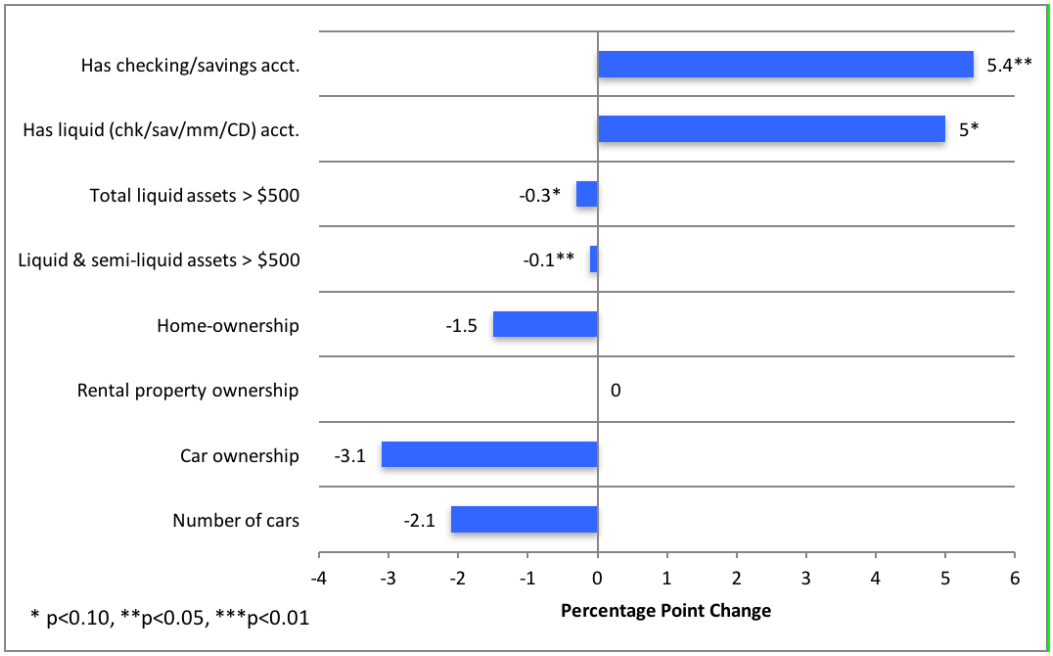
2006). One study finds that program-eligible families investing in vehicles drives the increase in vehicle ownership, and ineligible families do not reduce their vehicle assets to become eligible (Owens and Baum 2012). Together, these results suggest that relaxing or eliminating asset tests may help current program beneficiaries without harming those near eligibility who might try to spend down their assets to become eligible.

We take a similar approach to study the effect of TANF and SNAP asset limits on asset holdings and financial decision-making by comparing households across states and over time before and after changes in asset tests. Asset holdings we consider include liquid assets, semi-liquid assets, vehicle equity, home equity, rental equity, net worth, and net worth excluding home equity. Liquid assets include checking, savings, and money market accounts, and certificates of deposit (CD). Semi-liquid assets include stocks, mutual funds, corporation bonds, municipal bonds, individual retirement accounts (IRAs), Keoghs, 401(k)s, and thrift savings accounts. Our measure of vehicle equity consists of the value of the vehicle less debt on the first three vehicles owned. Home equity is the self-assessed home value less the principal remaining on a home mortgage. Rental equity captures the share of rental property held. Net worth includes all assets less liabilities such as mortgages, loans, debts against accounts, and unsecured loans.

Overall, we find that eliminating or relaxing liquid asset limits for SNAP had no detectable or consistent effect on the likelihood that households own various assets such as liquid accounts, homes, rental properties, or vehicles. Since there are no discernible effects for SNAP, we present only the results for TANF. In contrast, Figure 5 shows that removing or relaxing liquid asset limits for TANF increases by about 5 percentage points the probability that households have a liquid account such as a checking or savings account, a money market account, or a CD. In our sample, 27.5 percent of households have one of these accounts, implying an increase of about 18 percent. The probability that a household has more than $500 in those accounts, however, decreases slightly, by less than 1 percentage point. This decrease is likely the result of a greater number of households having an account.

Figure 5

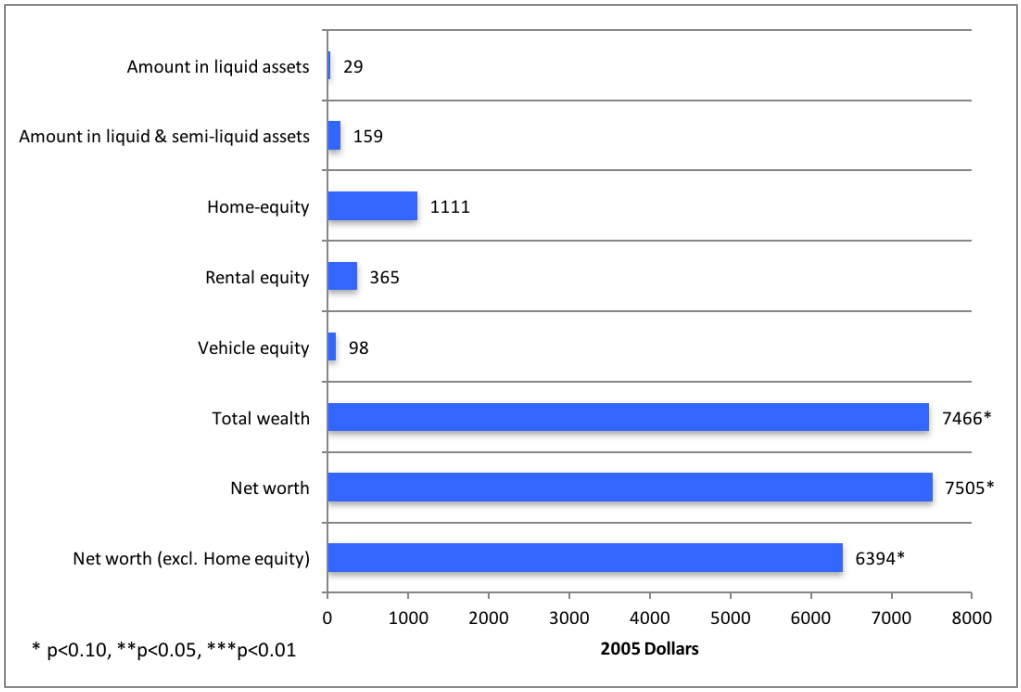
Effect of Eliminating or Relaxing TANF Liquid Asset Limits on the Probability of Holding Assets



There are no discernible effects on the value of liquid assets, semi-liquid assets, home equity, vehicle equity, or vehicle equity held from relaxing liquid asset limits for either SNAP or TANF. Relaxing TANF liquid asset limits, however, increases total wealth, net worth, and net worth excluding home equity by about $7,000. (See Figure 6.) Since we find no effect on specific types of assets held, this effect does not seem to be a result of families spending down their assets to become eligible for TANF. Rather, this finding may suggest that following a relaxation in asset limits, the TANF-eligible population has greater assets. The results for all of these outcomes are similar when we limit the sample to those who have participated in one of these programs in the past. (Results for the limited sample are available upon request.)

Figure 6

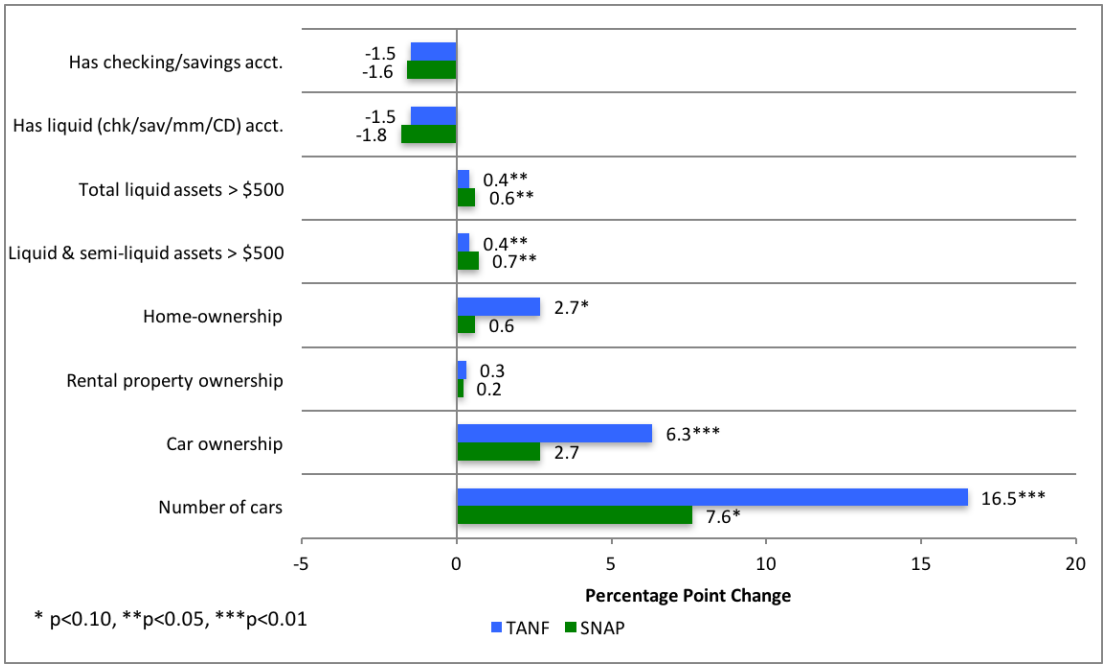
Effect of Eliminating or Relaxing TANF Liquid Asset Limits on the Value of Asset Holdings



As in the case of program participation, restrictions on vehicle ownership for SNAP and TANF eligibility appear to be more binding for low-income households. Eliminating or relaxing SNAP and TANF vehicle limits increases by 3 to 6 percentage points—roughly 5 to 10 percent—the probability that a household owns a vehicle (See Figure 7.) Relaxing vehicle limits also increases the number of vehicles that households own, and the likelihood that total liquid assets and liquid and semi-liquid assets held exceed $500. There is also evidence of an increase in home ownership and home equity following TANF vehicle limit relaxation.

Figure 7

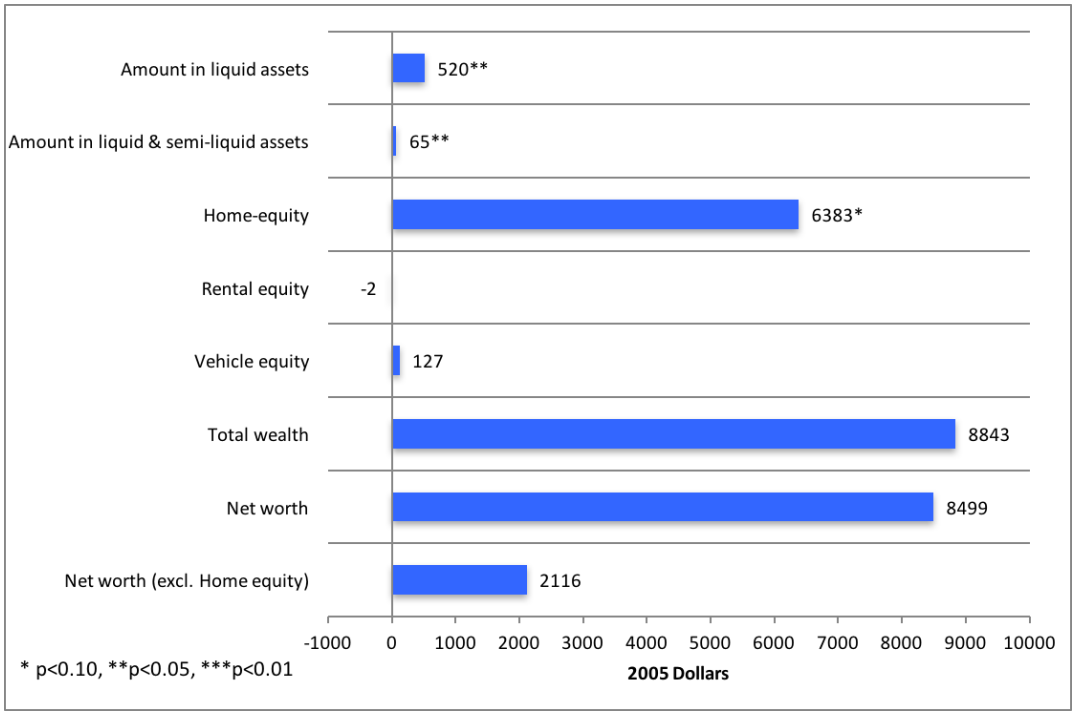
Effect of Eliminating or Relaxing Vehicle Asset Limits on the Probability of Holding Assets



When we look at the impact of eliminating or relaxing vehicle asset limits on the value of assets held, we find no effects for SNAP. In contrast, loosening vehicle asset limits increases the amount of liquid assets, semi-liquid assets, and home equity held. (See Figure 8.) There are no discernible effects on rental equity, vehicle equity, total wealth, and net worth.

Figure 8

Effect of Eliminating or Relaxing TANF Vehicle Asset Limits on the Value of Asset Holdings



We find no consistent impact on the value of vehicle equity held after relaxing vehicle asset limits for either program. Coupled with the earlier finding that households are more likely to own a vehicle and own a greater number of vehicles, these results suggest that once vehicle restrictions for program participation are lifted or relaxed, households respond by increasing vehicle ownership without holding greater vehicle equity. That is, they are likely taking out vehicle loans, which may explain the lack of findings on total wealth and net worth.

Overall, these results are consistent with the previous literature that relaxing asset limits increases vehicle ownership but has no effect on liquid asset holdings and inconclusive effects on net worth (Baek and Raschke 2016; Owens and Baum 2012; McKernan, Ratcliffe, and Nam 2010; Sullivan 2006; Hurst and Ziliak 2006). Our work improves on prior research by using more data over a longer time period than previous studies on the effects of asset limits. For example, in most analyses, we have more than 200,000 observations, giving us confidence in our results, including cases in which there are no discernible effects. We also control for underlying state-specific trends in program participation and financial behaviors, a methodological component missing from earlier studies that may inflate their results.

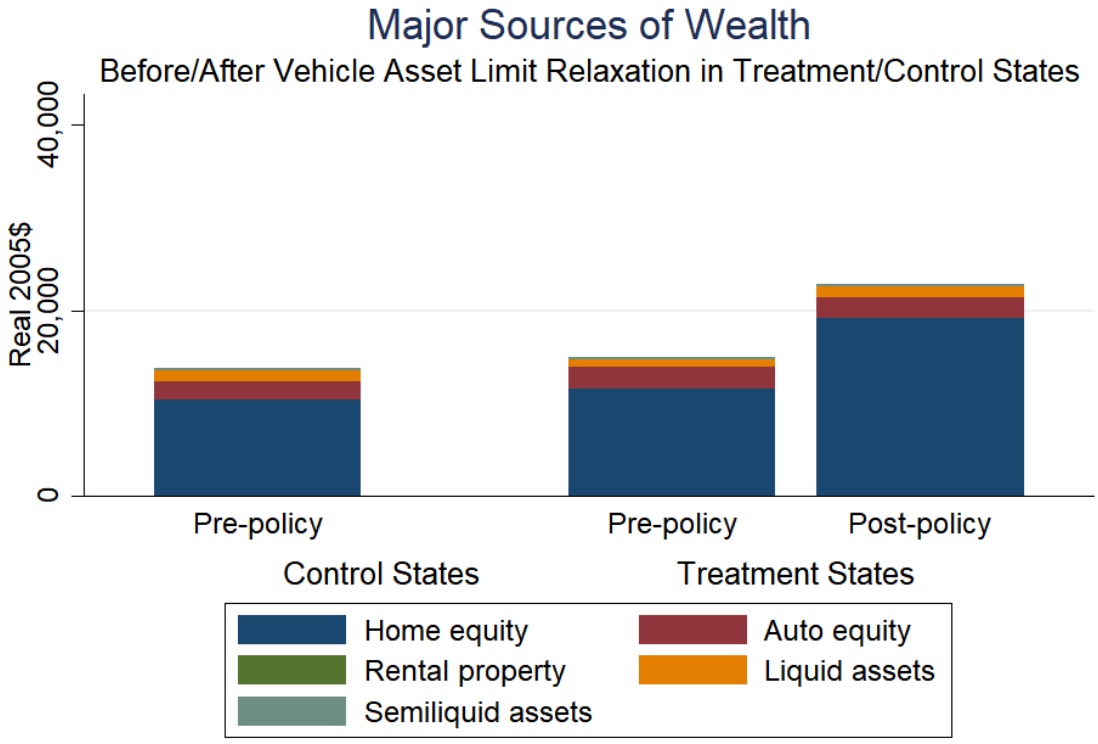
Part III: Policy implications

Vehicle asset limits appear to be more binding for low-income households than liquid asset limits. This may not be surprising, given the asset portfolio of this population. Home equity constitutes more than half of wealth for the households in our sample. Auto equity is the

second-largest component, with liquid assets contributing a small fraction of household wealth. This can be seen in Figure 9, which graphs the equity held in various assets among households before and after TANF vehicle asset limits were eliminated or relaxed relative to households in states that never relaxed their vehicle asset limits during the study period. This figure reflects the findings from Figure 8.

Figure 9

Wealth Portfolio of Low-Income Households Before and After TANF Vehicle Asset Limits Were Eliminated or Relaxed



Source: Survey of Income and Program Participation, 2001-08 Waves (US Census), BLS

Following relaxed vehicle asset limits, households spend more on vehicles. Greater access to vehicles—perhaps through more consistent and sustained employment—appears to allow families to obtain greater home equity, reduce the need for program participation, and achieve greater self-sufficiency. This research, combined with earlier findings from Pew and others, suggests that relaxing asset limits—notably, vehicle assets—helps program-eligible families without harming those near eligibility who might try to spend down their assets to become eligible (Owens and Baum 2012). Relaxing asset limits does not increase program participation—and may even reduce program participation—and it shrinks the administrative costs of operating these programs (The Pew Charitable Trusts 2016). Together, these findings imply that the recent trend of relaxing or eliminating asset limits for SNAP and TANF appears to be efficient and effective public policy. That is, the existence of asset limits may contribute to the diverging savings and asset accumulation structures that manifest across the income distribution.

Conclusion

In this report, we presented findings from studying an important question regarding the social safety net in the United States. We sought to understand how restrictions on asset ownership in programs such as Temporary Assistance for Needy Families (TANF) and the Supplemental Nutrition Assistance Program (SNAP) affect program participation and financial decision-making. Ultimately, we tried to understand whether these asset limits achieve the goals of the programs or are counterproductive to their mission.

We found that the effects of relaxing or eliminating asset limits for SNAP and TANF depend on the type of asset restricted. Broadly speaking, eliminating or relaxing liquid asset limits may modestly improve the asset holdings of low-income households. Removing TANF liquid asset limits appears to have stronger effects on total wealth accumulation than removing SNAP liquid asset limits. In contrast, eliminating or relaxing vehicle asset limits increases vehicle ownership substantially, increases the probability that total liquid and semi-liquid assets held exceed $500, and may increase home ownership and home equity. Lifting asset limits reduces program participation, likely due to greater asset accumulation increasing self-sufficiency. When we take into consideration the reduced administrative burden of verifying assets, relaxing asset limits seems to be doing more good than harm.

Appendix

Data and sample

Survey of Income and Program Participation

Data for this analysis comes from a variety of sources, though the single-largest source of data is the Survey of Income and Program Participation (SIPP, https://www.census.gov/sipp). SIPP is a nationally representative sample of households in the United States structured as both a longitudinal panel and cross-sectional survey via topical modules. We collect data on households and families from SIPP using the 2001, 2004, and 2008 panels that roughly span the years 2001 through 2013.

For this analysis, we use two slices of SIPP. First, we use the "core" interviews that surveys individuals within families and households on topics such as labor force participation, program participation, income, and basic assets. The core wave file is organized in panels with households interviewed every four months (and asked to recall the previous three months). Households are organized by anchoring to a reference person, and then all persons in the household are organized into families, subfamilies, and unrelated families residing in the same household. Households may remain in a SIPP panel for up to 48 months or 12 interview periods. Second, SIPP interviews households sporadically about a wide range of topics. Most relevant for this study are topical modules that ask questions about assets, liabilities, real estate, and vehicles. These modules ask for more in-depth responses on asset holdings, debt, and wealth of respondents but are more sporadic in nature; assets and liabilities were part of three waves in

the 2008 panel (4, 7, and 10). We merged the topical modules and core wave interviews to provide a snapshot of household wealth.

We create two analysis samples, both of which include low-income households and families that are at or below 185 percent of the federal poverty guidelines throughout our entire study period. For TANF, this is a household-level variable, whereas for SNAP, the calculation is at the family level, consistent with the units of observation the federal government uses to determine program eligibility in the respective programs. We also exclude observations when an entire household moved out of state during the panel period because the changes experienced by those households are likely to exceed our ability to control for them adequately. In the second analysis sample, we further restrict observations to include only households/families that had participated in one of the two programs prior to a policy change in their state. That is, the first analysis sample includes households/families that may be eligible for the program, might be affected by programmatic changes, and may change asset holdings in response to program change. In contrast, the second sample includes only individuals who have previously participated in TANF (for our analyses on TANF) and SNAP (for our analyses on SNAP). We expect the individuals in this sample to be the most directly affected by changes in these programs, particularly if they move on and off the programs over time.

Using a long panel of households within states provides a very large sample for outcomes of interest that are tracked in the core wave interviews. As Table A.1 highlights, our largest sample has more than 300,000 household-months (our unit of analysis for TANF analyses; a family-month is the unit of analysis for SNAP). However, the use of the topical module data eliminates more than 90 percent of observations, and one sample leaves us with a modest 3,272 observations.

Table A.1

Analysis Sample Sizes

SIPP		**Families < 185% poverty limit**	**Families < 185% FPL and used SNAP prior to policy change**
	Core wave file	313,098	177,226
	Topical module	21,846	11,498
TANF		**Households < 185% poverty limit**	**Households < 185% FPL and received TANF prior to policy change**
	Core wave file	288,218	48,049
	Topical module	19,907	3,272

Limitations of SIPP

Despite being one of the best and longest-running datasets available for understanding trends in program participation, SIPP is not without its limitations. Two important issues are

measurement error associated with recall bias and nonresponse bias. In order to deal with seam recall bias, we include a control for the reference month of response, as measurement error tends to increase when respondents are asked to recall further and further back in time. We also employ survey weights in the analysis and cluster-robust variance estimators at the state level, though we do not find that the weights meaningfully affect the interpretation of our results.

Other data sources

We use a variety of other data sources as well. First, several independent variables were aggregated by the University of Kentucky Center for Poverty Research (http://www.ukcpr.org/data). This project collects data from a wide variety of sources that will be attributed in more detail later in this document. Second, we also collect monthly consumer price index data for urban residents (CPI-U) directly from the Bureau of Labor Statistics (https://www.bls.gov/cpi) to adjust all dollar values to constant 2005 dollars (specifically, July 2005, roughly a midpoint in our sample). All variables that rely on monetary values have been adjusted for inflation. Finally, we rely on the Urban Institute's Welfare Rules Databook (WRD) and USDA's Economic Research Service (ERS) for state-level policy change variables for TANF and SNAP.

Variable coding and descriptions

Dependent variables

Dependent variables come exclusively from SIPP, examining changes in program participation and household asset holdings and wealth. We divide dependent variables into three categories: program participation, holding of liquid assets, and capital asset holdings (including vehicles, home ownership, and rental shares). A summary of all dependent variables can be found in Table A.2, which includes our short definition, a more detailed definition, and other details.

Program participation

We collect program participation information for both TANF and SNAP. Following state eligibility rules, we identify TANF participation at the household level and SNAP participation at the family level. Because both programs are cash/cashlike programs, we code participation in these programs by whether households or families have nonzero benefits in the current month. Piggybacking on this variable, we subsequently identify whether households have received SNAP in the previous six or 12 months after the policy change conditional on having six or 12 months of observed data in the panel.

Liquid and semi-liquid assets

We code six variables related to liquid and semi-liquid assets. We define liquid assets as holdings in an interest-bearing checking account, a noninterest-bearing checking account, a savings account, a money market fund, or a certificate of deposit (CD). We define semi-liquid assets as holdings that respondents can convert to cash or borrow from within a few days. Semi-liquid assets include holdings of stocks or mutual funds, bonds (corporate or municipal), IRAs, Keoghs,

thrift savings plans, or 401(k)-type plans. The core wave interviews include questions about the existence of assets.

SIPP topical modules contain additional information about the value of assets. We use data from the topical modules to create four variables: the amount in liquid accounts, whether liquid assets exceed $500, the amount in liquid and semi-liquid accounts, and whether all accounts have over $500.

We adjust dollar amounts for inflation and use 2005 as our base year. For analyses of the effect of TANF policy changes, liquid and semi-liquid assets are aggregated at the household level, and for SNAP they are aggregated to the family. Our rationale for this distinction is that TANF eligibility is determined at the household level, while SNAP eligibility is determined at the family level.

Vehicle, home, and other asset holdings and wealth

We have also collected several indicators of household wealth through two main mechanisms: vehicle ownership and home (or rental) equity. SIPP collects these variables at the household level only. First, we ascertain whether the household owns a vehicle (car, van, truck) that is not an RV or motorcycle. We then collect data on how many such vehicles the household owns. We also use data on the value of and any loans against the first three vehicles in the household (as collected by SIPP).

We also collect data on home ownership and home equity. Home equity is determined by the subjective, self-reported home value ("How much do you think it would sell for on today's market if it were for sale?") less the principal of all mortgages held against the house. We determine whether the resident owned any rental property and how much equity residents had in that rental property.

Finally, three values calculated by SIPP measure the total wealth, net worth, and net worth less home equity. Total wealth is all assets held by the household as reported in the SIPP topical module. This includes liquid assets, semi-liquid assets, vehicle equity, and home equity plus any other sources of wealth. Net worth is all assets less mortgages, and all loans. We calculate net worth excluding home equity by subtracting home equity from SIPP's net worth calculations. All of these variables (vehicles, home equity, and wealth/net worth) are household-level measures.

Policy variables

We collect policy change variables for both TANF and SNAP. TANF policy variables come from the WRD (http://wrd.urban.org/wrd/databook.cfm). The WRD tracks policy updates in the TANF program in July of each year. We further identified the month of policy changes by contacting each state individually. WRD contains several variables on TANF rules. We collect data specifically on TANF asset and vehicle limits. First, we code whether states eliminated their liquid asset limits or whether states relaxed their asset limits by increasing the amount of liquid assets that render an individual ineligible for the program. We also capture whether a state had a vehicle asset limit and the equity or market value of the exemption. We track whether states eliminated or relaxed their vehicle asset limit. We created four variables and set them equal to

one in the months and years after states relaxed or eliminated either vehicle or asset limits, and to zero otherwise.

We obtained the policy levers for SNAP from the U.S. Department of Agriculture's Economic Research Service (https://www.ers.usda.gov/data-products/snap-policy-database). The dataset contains information on the month and year of changes in state policies. From this database, we code whether the state employed broad-base categorical exemptions (BBCE) that either eliminated the liquid asset requirements or relaxed the liquid asset requirements for SNAP recipients. Likewise, we use these data to determine whether an asset test excluded all vehicles, one vehicle, or the fair market value above the standard auto exemption ($4,650 in fiscal year 2013). From this information, we create a variable that indicates whether a state eliminated its vehicle limit asset test. This occurs when states change from exempting no vehicles or one vehicle to exempting all vehicles. We also create a variable that indicates whether states relaxed their vehicle asset limit by exempting one vehicle or exempting greater than the standard auto exemption. From this information, we create four variables that are set to zero until a state relaxes/eliminates its asset/vehicle limits, after which the variables equal one.

For each of the four policy areas, Table A.3 lists each state, whether the state relaxed its asset limits, and the month and year in which it relaxed or eliminated its asset limits (conditional on a policy change). We dropped states that always eliminated their asset limits to have a comparison group of states that had asset limits in this period. This resulted in dropping four states that eliminated their SNAP asset limits through BBCE before the study period, and therefore always had eliminated or relaxed asset limits; five that always eliminated SNAP vehicle limits; just one (Ohio) that always eliminated TANF asset limits; and 26 states that exempted automobiles from TANF asset limits throughout the study period.

Independent variables from SIPP

Control variables come from SIPP and other sources. From SIPP, we code the age of the reference person in the household or family, whether the reference person is a racial minority or Hispanic, whether anyone in the household/family has attained a high school diploma, and (separately) whether anyone in the household/family has attained a college degree. We also include the number of children and adults in the household and a dummy variable controlling for whether the household is a female-headed household (either family or pseudo-family).

Independent variables from other sources

Macroeconomic controls are collected from a variety of sources and aggregated by the University of Kentucky Center for Poverty Research (http://www.ukcpr.org/data). These variables include state population (from the U.S. Census Bureau, Population Division), state per capita income (Bureau of Economic Analysis), the state poverty rate (U.S. Census Bureau, Housing and Household Economic Statistics Division), the state earned income tax credit (EITC) rate (Tax Policy Center, http://www.taxpolicycenter.org/taxfacts/Content/PDF/state_eitc.pdf), the binding (higher between state and federal) minimum wage rate (Department of Labor, Wage and Hour Division), and the unemployment rate (Bureau of Labor Statistics, Local Area Unemployment Statistics, https://www.bls.gov/lau/staadata.txt). For all variables, dependent

and independent, TANF and SNAP, descriptive statistics (means and standard deviations) are presented in Table A.4.

Analytic methods and model specification

Our analytic method involves examining states that change their liquid and vehicle asset limits and comparing them, over time, to states that did not change their asset limits. With the inclusion of state fixed effects, this takes on some of the logic of a difference-in-differences model, with the key difference that we are not able to specify a unique "post-policy" period for states that did not change their asset limits because states adopted policy changes at various times. Rather than specify a pseudo "average" treatment start date or define "post" at first adoption in our sample, we specify variables for after the elimination or relaxation of limits. As mentioned above, our analytical approach drops states that did not have asset limits throughout our sample period to avoid treatment contamination.

Because there is potential state self-selection into this policy change, this method assumes that microeconomic conditions (change in income or assets, etc.) did not affect states' decisions to ease asset limits, after holding macroeconomic conditions and a state-specific linear trend constant.

In a cursory check of whether the variables included help to predict policy implementation (and thus whether omitted variables may do the same), we conduct an analysis where we drop all but the first post-implementation observation. We then run a model similar to the main specification, above, and conduct a generalized F-test of whether the individual demographic or macroeconomic controls predict policy implementation. In other words, we examine whether demographic trends and/or macroeconomic trends predict whether a state eliminated or relaxed liquid/vehicle asset limits for TANF/SNAP. We do not include state fixed effects and state linear trends, as state fixed effects would be perfectly collinear with implementation. Of the 48 control variables tested, we found just one to be statistically significant in predicting adoption (a result you would expect by chance alone) and we were not able to reject the null hypothesis of no effect in three of the four models (largely because of that single statistically significant variable, available upon request). We consider this to be an important check on the likely endogenous response of states and particularly given the power of the test (the smallest sample contained more than 140,000 household-months).

Thus, we specify the following baseline model:

$$\begin{aligned} Y_{ist} = \ & \beta_0 + \beta_1\{asset\ limit\ relaxation\}_{st} + \beta_2\{other\ asset\ policy\ changes\} \\ & + \beta_3'\{micro\ (SIPP)\ controls\}_{ist} + \beta_4'\{macroeconomic\ controls\}_{st} \\ & + refmonth_t + \lambda_s + \tau_s + \tau_y + \epsilon_{ist} \end{aligned}$$

Where Y is one of the dependent variables listed, above, indexed by (i) TANF households (TANF) or (i) SNAP families, within states (s), and by month (t). All households or families have all observations below 185 percent of the federal poverty level to ensure that they are in the universe of households or families who may be affected by a policy change. Households and families are weighted by their household or family survey weight as identified by SIPP. Asset limit relaxation is the elimination or relaxation of asset limits within the respective programs

(SNAP or TANF); either liquid asset limits or vehicle asset limits. "Other asset policy changes" are controls for the other changes occurring at the same time. For example, if we are modeling the easing of liquid asset limits, we also control for whether the state relaxed vehicle limits or whether control states strengthened their asset limits, to avoid treatment contamination. Micro (SIPP) controls are identified at the household or family level in the SIPP. Macroeconomic controls are identified at the state level and vary by either month or year depending on the specificity of the data source. For models examining SNAP policy changes, we also include the additional set of SNAP policy control variables. "Refmonth" represents three dummy variables to control for the reference month to combat known seam measurement error resulting from inaccurate recall between an interview month and other months. λ_s are state fixed effects, and τ_s are state-linear trend controls, one for each state in our sample (50+DC). τ_y are year fixed effects, and ϵ_{ist} are presumed independent and identically distributed error terms that are clustered at the state level. Dependent variables are either dichotomous indicator variables or continuous variables. For dichotomous indicators, we use a linear probability model.

We also include a set of models where Y is conditional on whether households or families used the program prior to a policy change. In those models, the observation of Y is conditional on both the household being below 185 percent of the poverty level in all months and having used TANF or SNAP in at least one month prior to a state's changing its policy on either liquid or vehicle assets.

Table A.2

Variable Short Names, Definitions, SIPP Survey, Aggregation Unit

Short name	Definition	Core or topical module	Household or family unit (TANF)	Household or family unit (SNAP)
Program participation				
TANF receipt this month	Has nonzero TANF receipt this month	Core	Household	
TANF receipt, previous six months	Has nonzero benefit receipt in the TANF program in the previous six calendar months	Core	Household	
TANF receipt, previous 12 months	Has nonzero benefit receipt in the TANF program in the previous 12 calendar months	Core	Household	
SNAP receipt this month	Has nonzero SNAP receipt this month	Core		Family

SNAP receipt, previous six months	Has nonzero benefit receipt in the SNAP program in the previous six calendar months	Core		Family
SNAP receipt, previous 12 months	Has nonzero benefit receipt in the SNAP program in the previous 12 calendar months	Core		Family
Liquid and semi-liquid assets				
Has checking/savings account?	Whether someone in the unit has an interest checking or savings account this month	Core	Household	Family
Has a liquid account?	Whether someone in the unit owns an interest checking account, savings account, money market account, or certificate of deposit this month	Core	Household	Family
Total liquid assets > $500 (2005 dollars)	Amount in an interest checking account, noninterest checking account, savings account, money market account, or certificate of deposit exceeds $500 (in real 2005 dollars)	Topical	Household	Family
$ liquid assets (2005 dollars)	Amount in an interest checking account, noninterest checking account, savings account, money market account, or certificate of deposit (in real 2005 dollars)	Topical	Household	Family
Liquid and semi-liquid assets > $500 (2005 dollars)	Amount in liquid (above) and semi-liquid accounts like stocks, mutual funds, corporation bonds, municipal bonds, IRAs, Keoghs, 401(k)-type accounts, and thrift savings exceeds $500 (in real 2005 dollars)	Topical	Household	Family
$ liquid and semi-liquid assets (2005 dollars)	Amount in liquid (above) and semi-liquid accounts (stocks, mutual funds, corporation bonds, municipal bonds, IRAs, Keoghs, 401(k)-type accounts, and thrift savings (in real 2005 dollars)	Topical	Household	Family
Vehicle, home, and total wealth				
Car ownership	Whether someone in the household owns a car, van, or truck, excluding RVs and motorcycles	Topical	Household	Household

Number of cars	Number of cars, vans, or trucks (excluding RVs and motorcycles) in the household	Topical	Household	Household
Vehicle equity	Assigned value of vehicle (make, model, year) less debt on the first three vehicles owned	Topical	Household	Household
Home ownership	Whether someone in these living quarters has or is buying a home	Topical	Household	Household
Home equity	Value of self-assessed home value less principal remaining on a home mortgage, if applicable	Topical	Household	Household
Rental property ownership	Whether someone in the household owns rental property, either alone or jointly	Topical	Household	Household
Rental equity	Share (in dollars) of rental property held	Topical	Household	Household
Total wealth	Total assets held by household (calculated by SIPP); includes liquid, semi-liquid, vehicles, homes, businesses, and rental property	Topical	Household	Household
Net worth	Total assets held by household less liabilities such as mortgages, loans, debts against accounts, and unsecured loans	Topical	Household	Household
Net worth (excluding home equity)	Total assets less liabilities less home equity	Topical	Household	Household

Table A.3

Month and Year That States Relaxed Asset Limits

	TANF asset limits		SNAP asset limits	
	Liquid	Vehicle	Liquid	Vehicle
	When state relaxed or eliminated asset limits in study period			
Alabama	10/2009	Always; dropped	2/2010	9/2001
Alaska	10/2001	Always; dropped	Never; control	9/2001
Arizona	Never; control	Always; dropped	6/2007	6/2003
Arkansas	Never; control	Always; dropped	Never; control	9/2001
California	Never; control	1/2004	6/2011	12/2003
Colorado	11/2006	1/2002	6/2011	9/2001
Connecticut	Never; control	Never; control	7/2009	9/2002
Delaware	11/2009	11/2009	Always; dropped	Always; dropped
D.C.	Never; control	10/2001	4/2010	9/2001
Florida	Never; control	Never; control	7/2010	9/2001
Georgia	Never; control	Never; control	3/2008	12/2005
Hawaii	Never; control	Always; dropped	10/2010	9/2002
Idaho	7/2012	7/2011	6/2011	5/2007
Illinois	Never; control	Always; dropped	3/2010	9/2001
Indiana	Never; control	Never; control	Never; control	1/2002
Iowa	Never; control	7/2001	10/2010	6/2004
Kansas	Never; control	Always; dropped	Never; control	9/2001
Kentucky	Never; control	Always; dropped	6/2010	9/2001
Louisiana	1/2011	7/2000	5/2010	9/2001
Maine	Never; control	Always; dropped	Always; dropped	Always; dropped
Maryland	5/2010	Always; dropped	3/2010	3/2001
Massachusetts	Never; control	Never; control	11/2011	9/2001
Michigan	Never; control	Always; dropped	10/2011	Always; dropped
Minnesota	Never; control	Never; control	12/2006	6/2003
Mississippi	Never; control	Always; dropped	6/2010	10/2003

Missouri	Never; control	Always; dropped	Never; control	9/2001
Montana	Never; control	Always; dropped	3/2009	6/2004
Nebraska	Never; control	Always; dropped	6/2011	1/2002
Nevada	Never; control	Always; dropped	4/2009	9/2001
New Hampshire	Never; control	Always; dropped	5/2009	9/2001
New Jersey	Never; control	10/2006	4/2010	9/2001
New Mexico	Never; control	Always; dropped	4/2010	1/2002
New York	Never; control	1/2007	1/2008	1/2002
North Carolina	Never; control	Always; dropped	7/2010	9/2001
North Dakota	Never; control	Always; dropped	Always; dropped	Always; dropped
Ohio	Always; dropped	Always; dropped	10/2008	9/2001
Oklahoma	Never; control	Never; control	6/2009	9/2001
Oregon	Never; control	Never; control	Always; dropped	Always; dropped
Pennsylvania	Never; control	Always; dropped	10/2008	9/2001
Rhode Island	Never; control	1/2001	4/2009	6/2003
South Carolina	Never; control	Always; dropped	4/2001	4/2001
South Dakota	Never; control	Always; dropped	Never; control	9/2001
Tennessee	Never; control	Never; control	Never; control	12/2003
Texas	Never; control	Never; control	9/2001	9/2001
Utah	Never; control	1/2007	Never; control	9/2001
Vermont	4/2008	Always; dropped	1/2009	9/2001
Virginia	1/2004	7/2003	Never; control	9/2002
Washington	Never; control	Never; control	5/2004	5/2004
West Virginia	Never; control	Always; dropped	10/2008	9/2001
Wisconsin	Never; control	Never; control	7/2004	9/2001
Wyoming	Never; control	7/2004	Never; control	9/2001
Treatment/ control/ dropped	9/41/1	13/12/26	37/10/4	46/0/5

Never; control indicates that a state never eliminated nor relaxed its asset limits and is used as a control state. **Always; dropped** indicates that the state never had a particular asset limit and has been dropped as a comparison state. All other values indicate the month and year a state eliminated or relaxed its asset limits.

Table A.4

Descriptive Statistics

	TANF (household level)			SNAP (family level)		
Program participation	**Mean**	**SD**	**Range**	**Mean**	**SD**	**Range**
TANF/SNAP receipt this month	0.09	0.28	0-1	0.47	0.50	0-1
TANF/SNAP receipt, previous six months	0.11	0.31	0-1	0.54	0.50	0-1
TANF/SNAP receipt, previous 12 months	0.12	0.33	0-1	0.54	0.50	0-1
Liquid and semi-liquid assets						
Has checking/savings account?	0.27	0.44	0-1	0.26	0.44	0-1
Has a liquid account?	0.28	0.45	0-1	0.26	0.44	0-1
Total liquid assets > $500 (2005 dollars)	0.01	0.09	0-1	0.01	0.09	0-1
$ liquid assets (2005 dollars)	948	7737	0-314851	880	7465	0-314851
Liquid and semi-liquid assets > $500 (2005 dollars)	0.01	0.11	0-1	0.01	0.10	0-1
$ liquid and semi-liquid assets (2005 dollars)	347	11217	0-1786837	318	10660	0-1786837
Vehicle, home, and total wealth						
Car ownership	0.59	1.26	0-1	0.59	1.27	0-1
Number of cars	0.39	1.26	0-15	0.41	1.27	0-15
Vehicle equity	2124	3427	-34682-39407	2142	3424	-34682-39407
Home ownership	0.29	0.45	0-1	0.29	0.45	0-1
Home equity	11473	42128	-232117-900217	33406	151300	-919964-5108995
Rental property ownership	0.01	0.09	0-1	0.01	0.08	0-1
Rental equity	51	1998	0-183118	49	1939	0-183118
Total wealth	18498	67219	-645105-	28073	1023013	-645105-

			2523306			5346766
Net worth	16068	67948	-1031814-2520816	25519	1023093	-1031814-2520816
Net worth (excluding home equity)	4596	46313	-1063621-2157160	-7887	1028568	-4452903-2523306
Micro controls						
Age of reference person	41.50	13.71	15-89	41.66	13.78	15-89
Reference person is minority/Hispanic	0.51	0.50	0-1	0.51	0.50	0-1
Someone in household/family has a high school diploma	0.76	0.42	0-1	0.75	0.44	0-1
Someone in household/family has a college degree	0.07	0.26	0-1	0.07	0.25	0-1
Number of children in the household	1.43	1.53	0-12	1.28	1.49	0-12
Female-headed household	0.55	0.50	0-1	0.54	0.50	0-1
Number of adults in the household	1.62	0.79	0-8	1.49	0.75	0-7
Macroeconomic controls						
Seasonally adjusted unemployment rate	6.95	2.27	2.3-14.9	6.96	2.27	2.3-14.9
State per capita income (thousands)	36.27	6.36	22.8-74.6	36.26	6.34	22.8-74.6
Minimum wage—higher of state or federal	6.34	1.09	5.2-9	6.34	1.09	5.2-9
State EITC rate	0.05	0.10	0-0.8	0.05	0.10	0-0.8
Poverty rate	13.98	2.99	5.4-23.1	13.99	2.99	5.4-23.1

References

Baek, Deokrye, and Christian Raschke. 2016. “The Impact of SNAP Vehicle Asset Limits on Household Asset Allocation.” *Southern Economic Journal* 83, no. 1 (February): 146–75.

Falk, Gene. 2014. “Temporary Assistance for Needy Families (TANF): Eligibility and Benefit Amounts in State TANF Cash Assistance Programs.” Congressional Research Service, Report No. R43634.

Government Accountability Office. 2012. “Supplemental Nutrition Assistance Program: Improved Oversight of State Eligibility Expansions Needed.” Report No. GAO-12-670.

Hanratty, Maria J. 2006. “Has the Food Stamp Program Become More Accessible? Impacts of Recent Changes in Reporting Requirements and Asset Eligibility Limits.” *Journal of Policy Analysis and Management* 25, no. 3 (Summer): 603–21.

Hurst, Erik, and James P. Ziliak. 2006. “Do Welfare Asset Limits Affect Household Saving? Evidence From Welfare Reform.” *Journal of Human Resources* 41, no. 1 (Winter): 46–71.

Klerman, Jacob Alex, and Caroline Danielson. 2011. “The Transformation of the Supplemental Nutrition Assistance Program.” *Journal of Policy Analysis and Management* 30, no. 4 (Fall): 863–88.

Laird, Elizabeth, and Carole Trippe. 2014. “Programs Conferring Categorical Eligibility for SNAP: State Policies and the Number and Characteristics of Households Affected.” Washington: Mathematica Policy Research.

Mabli, James, Thomas Godfrey, Nancy Wemmerus, Joshua Leftin, and Stephen Tordella. 2014. “Determinants of Supplemental Nutrition Assistance Program (SNAP) Participation From 2008 to 2012.” Arlington, VA: Decision Demographics.

McKernan, Signe-Mary, Caroline Ratcliffe, and Yunju Nam. 2010. “The Effects of Welfare and Individual Development Account (IDA) Program Rules on Asset Holdings.” *Social Science Research* 39, no. 1 (January): 92–110.

Owens, Mark F., and Charles L. Baum. 2012. “The Effects of Welfare Vehicle Asset Rules on Vehicle Assets.” *Applied Economics* 44, no. 13: 1603–19.

The Pew Charitable Trusts. 2016. “Do Limits on Family Assets Affect Participation in, Costs of TANF?” http://pew.org/29n0ICJ.

Ratcliffe, Caroline, Signe-Mary McKernan, Laura Wheaton, Emma Cancian Kalish, Catherine Ruggles, Sara Armstrong, and Christina Oberlin. 2016. “Asset Limits, SNAP Participation, and Financial Stability.” Washington: Urban Institute.

Ratcliffe, Caroline, Signe-Mary McKernan, and Kenneth Finegold. 2008. “Effects of Food Stamp and TANF Policies on Food Stamp Receipt.” *Social Service Review* 82, no. 2 (June): 291–334.

Sullivan, James X. 2006. “Welfare Reform, Saving, and Vehicle Ownership: Do Asset Limits and Vehicle Exemptions Matter?” *Journal of Human Resources* 41, no. 1 (Winter): 72–105.

Trippe, Carole, and Jessica Gillooly. 2010. “Non-Cash Categorical Eligibility for SNAP: State Policies and the Number and Characteristics of SNAP Households Categorically Eligible Through Those Policies.” Washington: Mathematica Policy Research.

Trippe, Carole, and Bruce Schechter. 2010. “Assets of Low-Income Households by SNAP Eligibility and Participation in 2010.” Washington: Mathematica Policy Research.

Endnotes

[1] Liquid assets typically include checking accounts, savings accounts, savings bonds, IRA accounts, and stocks.

[2] For example, all households in Oregon with gross income at or below 185 percent of the poverty line receive a pamphlet providing resources for low-income families. By receiving this pamphlet, a family is considered categorically eligible for SNAP (Trippe and Gillooly 2010).

[3] This measure includes moving to BBCE for SNAP.

[4] The unit of analysis is the family level for SNAP and the household level for TANF. For consistency, we use the term "household" throughout this report. The federal income limit for SNAP is 130 percent FPL. Though there is variation in income eligibility thresholds across states, the median income threshold in 2012 was about 48 percent FPL (Falk 2014). We expand the limit to account for income measurement error in SIPP.

[5] On the high end, .03/.47=6 percent, and on the low end, .03/.6=5 percent.