

THE RELATIONSHIP BETWEEN ASSET HOLDINGS AND MATERIAL HARDSHIP
FOLLOWING ECONOMIC SHOCKS IN A HOUSEHOLD

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By

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ABSTRACT

Beginning in the 1990s, many scholars have theorized the possible positive effects of holding assets. One hypothesized benefit is that holding assets can reduce the likelihood of experiencing material hardships, such as the inability to pay for food, shelter, basic utilities, or medical care. This benefit could be particularly strong for households experiencing economic shocks, such as job loss, the onset of work-limiting health conditions, or changes to household composition. Such events can destabilize a household's income. This study builds on the work of McKernan, Ratcliffe, and Vinopal (2009) to explore whether holding assets, both liquid assets and homeownership, is associated with lower levels of material hardship for households that experience economic shocks. I utilize data from the 2008 Survey of Income and Program Participation. I find that asset poor households have higher rates of material hardships and that this relationship is strongest for households in the bottom third of the income distribution. I also find that homeownership is generally associated with lower hardship rates, but few of the results are statistically significant.

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Many thanks,
BETSY KEATING

TABLE OF CONTENTS

I. Introduction.....	1
II. Literature Review.....	3
III. Conceptual Model and Hypotheses.....	7
IV. Empirical Strategy.....	10
V. Data.....	14
a. Structure of the SIPP.....	14
b. Variable Definitions.....	15
c. Survey Attrition.....	19
d. Descriptive Statistics.....	21
VI. Results.....	23
a. Model 1: Asset Poverty.....	23
b. Model 2: Homeownership.....	30
c. A Cautionary Note.....	31
VII. Discussion.....	31
VIII. Conclusion.....	35
IX. References.....	37

LIST OF TABLES

Table 1: Descriptive Statistics.....	20
Table 2: Descriptive Statistics, By Income Third.....	22
Table 3: Model 1- Asset Poverty, OLS Regression Results with No Controls.....	25
Table 4: Model 1- Asset Poverty, OLS Regression Results with All Controls.....	27
Table 5: Model 2- Homeownership, OLS Regression Results with All Controls.....	32

LIST OF FIGURES

Figure 1: Conceptual Model.....	8
Figure 2: Variable List, by SIPP Wave and Calendar Month.....	18
Figure 3: Model 1- Asset Poverty, OLS Regression Results, By Income Third.....	28
Figure 4: Model 2- Homeownership, OLS Regression Results, By Income Third.....	33

I. Introduction

A small but not non-trivial number of households in the United States cannot meet their basic needs and experience material hardship, including the inability to pay for health care, food, basic bills, or housing. Material hardship can be measured empirically through data from the Survey of Income and Program Participation (SIPP). The SIPP is a longitudinal survey of the civilian, non-institutionalized population of the U.S. administered every three to four years by the U.S. Census Bureau. During and following the Great Recession of 2007 to 2009, material hardship levels increased (Pilkauskas, Garfinkel, and Currie, 2011). According to the SIPP, about 7 percent of households reported in April to August 2010 that they did not pay their rent or mortgage at some point in the last year, while 9.3 percent did not pay their gas, oil, or electric bill during the previous year. Likewise, the SIPP indicates 8.7 percent did not see a dentist when needed because of cost during the same period and 10.7 percent experienced two or more hardships. For comparison, in the 2001 SIPP, 5.5 percent of respondents did not pay their rent or mortgage, while 8.7 did not pay their utilities (Rogers and Ryan, 2007). Generally, households that experience an economic shock like job loss, a change to household composition, or a work-limiting medical condition, are more likely to experience material hardships (McKernan, Ratcliffe, and Vinopal, 2009).

The U.S. government has historically invested in programs intended to minimize the experience of material hardship. These programs typically base eligibility on income with additional asset caps that limit the amount of assets participants can own and remain eligible. Current means-tested programs to help the poor, like Temporary Assistance for Needy Families

(TANF), the Supplemental Nutrition Assistance Program (SNAP, formerly Food Stamps), and Supplemental Security Income (SSI) reduce the poverty rate and improve the economic situation for many low-income families (Short, 2011). However, these programs are not meeting all the needs of families as demonstrated by the sizable number of Americans experiencing material hardships.

Over the past two decades, many scholars have suggested that a welfare system that encourages and incentivizes asset accumulation will improve the lives of the poor and allow them greater financial stability (Sherraden, 1991; Shapiro and Wolff, 2005). Assets are a stable, stock resource that can be built up during strong economic times and then drawn down during economic downturns or shocks. The likelihood of assets being used for consumption depends on the type of asset and its liquidity. Some assets, like savings or checking accounts, are easily drawn upon, while others, like retirement accounts that penalize early withdrawals or real estate, are less liquid. Income, on the other hand, is a flow resource that is more volatile over time due to often unpredictable variations in individuals' labor market participation levels and wages. The roles of assets and income within the household may be quite different, and assets may be a stronger vehicle than income for avoiding any hardship over the long-term.

While the importance of assets is generally well-accepted from a theoretical standpoint, there is relatively little empirical evidence illustrating the role of assets, particularly during national recessions. During the Great Recession, heightened unemployment and the financial market collapse led to increased income volatility for individuals and households not seen since the Great Depression. This instability could heighten the usefulness of assets, as many more people would need to rely on their stock of assets to avoid hardships. Yet, this period also saw

decreases in the value of assets, particularly stocks, bonds and housing. Between 2007 and 2008 the average wealth holding per household declined by 24 percent, largely due to the collapsing housing and stock markets (Taylor et al., 2010). Although wealth holdings began to rebound in 2009, the Great Recession had a lasting impact on the value of assets. Because of this atypical volatility in both assets and income, it is somewhat unclear how the Great Recession affected the relationship between asset holdings and material hardship for households that experience economic shocks. Thus, this period requires greater examination and analysis.

This study explores the role of assets following economic shocks during the Great Recession. In particular, do households with assets have a lower likelihood of experiencing a hardship after an economic shock than those without assets? Does the relationship between asset holdings and material hardship vary by income level? I analyze data at the household level, and to answer the second question, I divide my sample into thirds based on the sample's income distribution.

II. Literature Review

The study of material hardship measures largely began with an analysis by Mayer and Jencks (1989) which addressed whether Chicago survey respondents could afford food, housing, and medical care. Mayer and Jencks argued the official poverty measure and other income-based measures do not fully capture material hardship, as income explained only 14 percent of the variation in those who experienced hardship in their study. Many later studies concluded that there are significant differences in hardship across income levels (Iceland and Bauman, 2004; Short, 2005; Sullivan, Turner, and Danziger, 2007) as well as some observable characteristics like household composition and marital status (Lerman, 2002). Yet, few of the material hardship

studies thoroughly examined assets and their possible role in mitigating experiences of hardship.

Emerging separately but around the same time period, Michael Sherraden (1991) proposed a new welfare system that would use assets, rather than income, as the frame of reference. Sherraden (1991) suggested that an asset-based approach is “in part social reform and in part financial planning” and would help welfare policy “empower as well as protect” its recipients (p. 7). Building on Sherraden’s theoretical framework, researchers began to study empirically the benefits of holding both liquid assets and non-liquid assets like houses, cars, or other property (Lerman and McKernan, 2008). Liquid assets like savings accounts can increase income through interest and dividends, give people a means to purchase further assets, and decrease dependency on welfare (Cho, 1999). Likewise, homeownership can increase social capital and good citizenship, including greater involvement in elections and civic organizations (DiPasquale and Glaeser, 1999), as well as improve social and psychological well-being (Yadama and Sherraden, 1996). Additionally, Scanlon and Adams (2005) found that homeownership is associated with fewer behavioral problems for children, and Williams (2004) concluded that net worth and specific assets, including stocks, Individual Retirement Accounts (IRAs), and bank accounts, are associated with higher cognitive outcomes and lower incidences of behavioral problems for children, although these results vary by race.

Despite these positive empirical results, other studies (Reid, 2004; Goetzmann and Spiegel, 2001) have questioned the benefits of assets, particularly homeownership, for lower income families. In an analysis of the effects of homeownership for low-income households, Bostic and Lee (2008) found that homeownership did not always confer benefits on low-income families, and these households often faced the threat of foreclosure. Because the burden of

paying for and maintaining a home is high for low-income households, they have to expend much of their income on housing, so they may be more likely to experience hardships. Compounding this issue, weak underwriting standards from the late 1990's to 2007 led to households, including many low-income households, obtaining mortgages that were beyond their means (Schwartz, 2010). My study focuses on the period from January 2009 to August 2010, which followed the housing collapse and economic downturn. So, my period of analysis may have seen particularly large challenges for low-income homeowners.

The possibility that assets lead to greater hardship may also be true for more liquid assets. Moore et al. (2001) analyzed the behavior of those who held Individual Development Accounts (IDAs), or matched savings accounts into which participants contribute and later purchase assets like a home or small-business. To make their required monthly deposits in these accounts, some participants acknowledged they postponed seeing the doctor or dentist (17 percent), did not pay their bills (16 percent), or gave up food or other basic necessities (8 percent) (Moore et al., 2001). While an IDA is a very specific type of asset-building strategy that has rigid compliance rules, this study raises a potential concern with asset accumulation. Because low-income families have few resources to start, even a minor investment in assets may lead to material hardship because they will have less available money for basic needs in the present. This concern is also applicable to higher income families that acquire assets beyond their current income levels. Families attempt to maximize their lifetime utility by investing in assets and limiting consumption in the present. This trade-off can be considered using a simple model of consumer choice, wherein individuals seek to maximize their overall utility by selecting a certain level of good X (current consumption) and good Y (savings, which is linked to future consumption). In the short term,

though, those who choose to save are worse off comparatively than those who choose to not save, holding all else constant (Bernstein, 2005). It is possible that for low-income households that “increased saving might reduce consumption to the point of harm” (Bernstein, p. 364, 2005).

McKernan, Ratcliffe, and Vinopal (2009) directly brought the analysis of assets and material hardship together by assessing the effects of asset poverty on households that experience adverse events like job loss, work-limiting injury, or an adult leaving the household. Asset poverty is defined as holding liquid assets that are less than the amount needed to subsist at the poverty level for three months. Work-limiting injuries are any medical conditions that either fully or partially prevent people from working to their full physical or mental capacity. For families that experience an economic shock, McKernan, Ratcliffe, and Vinopal’s analysis suggests that asset poor families are 14 percentage points more likely to experience “general deprivation” (which is categorized as experiencing two or more material hardships) than those who are not asset poor. Separating their sample by income thirds, they found that asset poverty is associated with higher rates of material hardship for lower and middle income families than the top income third, suggesting assets are most beneficial for lower and middle income families. Their study draws on data from the 1996 and 2001 SIPP and controls for income prior to the economic shocks but no other demographic characteristics.

My study builds on McKernan, Ratcliffe, and Vinopal’s study by using a more complete estimation approach that controls for other mechanisms, such as governmental programs and social networks, which households can also utilize to lessen the experience of material hardships following adverse events. I also examine homeownership as well as liquid assets. By examining both liquid assets and homeownership, I hope to illuminate whether the high maintenance costs

and lower liquidity of homes make them less useful mechanism than liquid assets to avoid hardship.

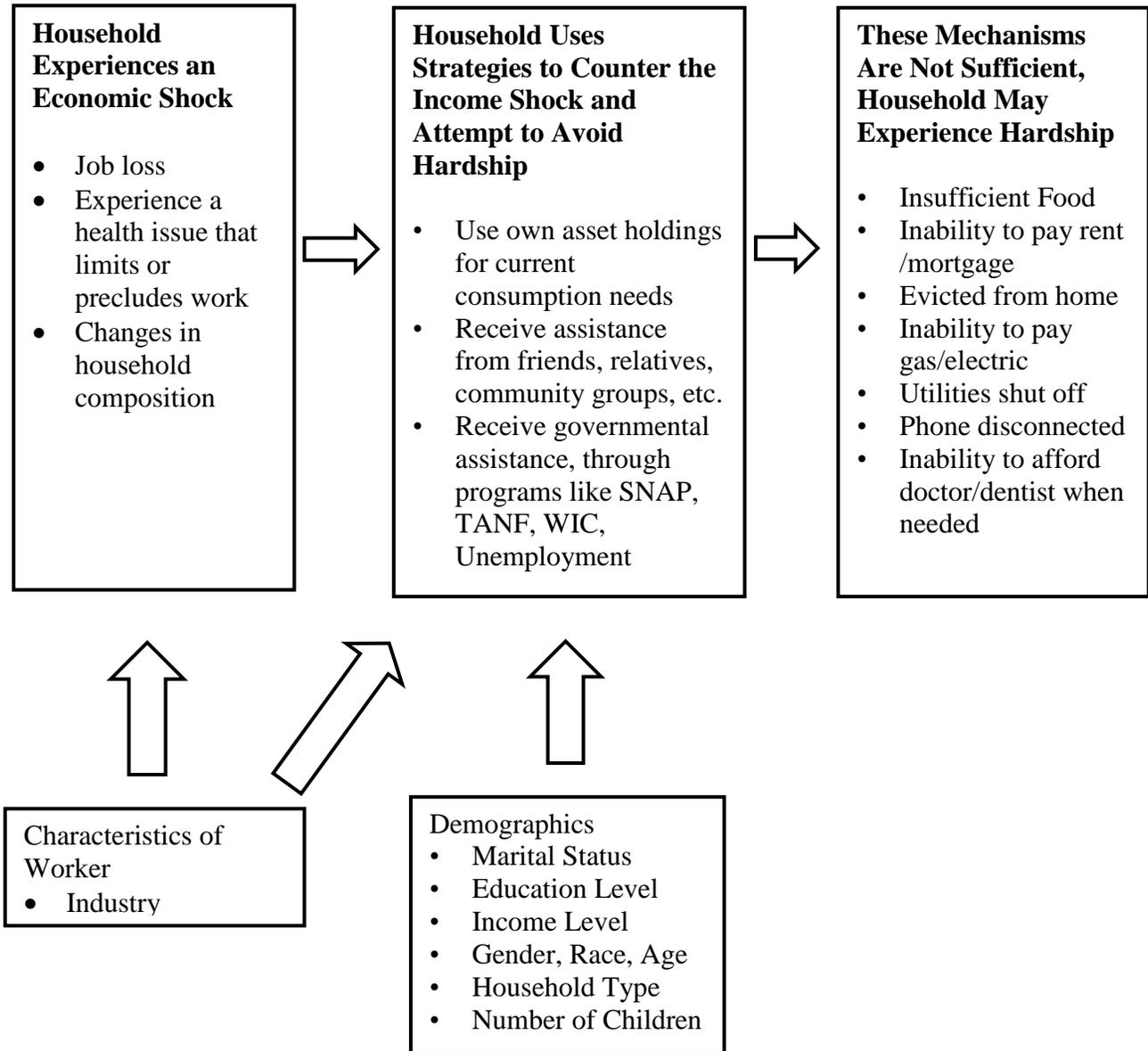
III. Conceptual Model and Hypotheses

This study examines the relationship between holding assets and the likelihood of experiencing material hardship following three economic shocks: job loss, a work-limiting medical condition, or a change in household composition. After economic shocks, income may decrease greatly and regular expenditures may increase. To deal with these changes, households attempt to avoid hardship through strategies like drawing upon existing asset holdings, enrolling in public benefit programs, or seeking assistance from social networks. Which strategy is employed can vary depending on demographic and worker characteristics. If these strategies are inadequate, households may be unable to afford housing, food, basic bills, or medical care, which can lead to material hardship (Figure 1).

Governmental programs (e.g., SNAP, TANF, SSI, unemployment insurance benefits, Women, Infants, and Children (WIC), Social Security, Medicare, and Medicaid) play a key role in the lives of families that experience economic shocks. These programs were established to provide a social safety net, and they can protect against hardship. In addition to the public safety net, many families have social networks on which they rely in times of need. Families, friends, and other social connections, including religious and cultural groups, can be a source of assistance that can mitigate instances of hardship. Mayer and Jencks (1989) found that families that were able to borrow \$500 from any source had greatly reduced instances of hardship, equal to multiplying their family income by three. Thus, even households with very low incomes may survive economic shocks without experiencing hardship if they can lean on extended family,

friends, other connections, or even financial institutions for loans. Similarly, Cotter, Hermsen, and Vanneman (2002) concluded that people with weak support networks (kin, friends, and charities) experience more hardship.

FIGURE 1: CONCEPTUAL MODEL



Demographic or household characteristics may also affect the instances of hardship because they are potentially correlated with the three strategies enumerated above. Previous research has demonstrated that asset accumulation varies by gender (Schmidt and Sevak, 2006), race (Oliver and Shapiro, 1995; Atonji and Doraszelski, 2005), and age (Cagetti, 2003). Likewise, people with different demographic characteristics will likely have different community support networks available to them and also will likely have different take-up rates of public benefit programs, due to both program eligibility rules and norms of behavior. In addition to demographic characteristics, those with more income (Iceland and Bauman, 2004) or education (Bernheim, 1998) may use different strategies to address adverse events than those with less income or education. Low-income households are more likely to be eligible for and enroll in public benefit programs, and although saving can be challenging for these households, they also can utilize assets as a means to avoid hardship (McKernan, Ratcliffe, and Shanks, 2011; Mills and Amick, 2010). On the other hand, higher income households likely will not be eligible for many public programs so will use different strategies to avoid hardship.

Worker characteristics also influence the likelihood of experiencing a hardship, particularly in the Great Recession. For example, the industry in which a worker is employed affects the likelihood of the worker experiencing job loss, as some industries, like manufacturing and construction, severely contracted in this time period (Levine, 2009). The riskiness of the industry in which a person works may also influence the likelihood of experiencing a work-limiting health condition. In addition, one's industry can impact the household's strategies for addressing the economic shock: for those working in more unstable industries, the worker may be able to anticipate and prepare for job loss, through encouraging another household member to

enter the workforce, saving more, or cutting back on consumption. Therefore, worker characteristics can influence the likelihood of a household experiencing an adverse event as well as the decisions the household would make following such an event.

Drawing upon this conceptual model, I hypothesize that those households which are asset poor are more likely to experience a hardship following an economic shock. Households may utilize other mechanisms, like support from family or public assistance benefits, to avoid hardship. After controlling for these mechanisms, though, I expect those who are asset poor will experience greater material hardship. I hypothesize that the negative relationship between asset poverty and material hardship will be strongest for the lower and middle income thirds, as these households have less income to rely on and therefore have a greater need for their asset holdings following economic shocks. Because the financial value of the home is at least partially non-liquid, it may be harder for people to draw on their home as an asset following a sudden economic shock. Therefore, I hypothesize that homeownership will still be negatively correlated with hardship, but with a smaller magnitude than liquid assets. The relationship will likely be small, or even positive, for the lowest third of the income distribution, as these households would have a much more difficult time paying the many associated costs of homeownership following an economic shock.

IV. Empirical Strategy

To test my first hypothesis that asset poor households experience more hardship following economic shocks than households that are not asset poor, I estimate the following regression model:

$$\text{Model 1: } Y_i = B_0 + B_1 * \textit{asset_poor} + B_2 * \textit{economic_shock} + B_3 * \textit{economic_shock} * \textit{asset_poor} \\ + B_4 * \textit{income} + B_5 * \textit{demographics} + B_6 * \textit{occupation} \\ + B_7 * \textit{other_assistance}$$

where Y_i is one of nine binary variables measuring material hardship. Respondents were asked if they were unable to pay (1) their rent or mortgage or (2) their electricity, gas, or oil bill. The survey also asked if their (3) electricity or (4) telephone services were suspended due to lack of payment and if they were (5) evicted from their home. Respondents answered if they have failed to go to a (6) doctor or (7) dentist because of cost. They were asked if they had (8) sufficient food. In addition to estimating each hardship separately, for the ninth hardship measure, I use a dummy to indicate whether the household experienced two or more of the eight hardships. This measure is similar to a “general deprivation” definition used in McKernan, Ratcliffe, and Vinopal (2009) and can demonstrate whether asset poverty is linked to greater experiences of multiple hardships. Heflin, Sandberg, and Rafail (2009) argued that while the four dimensions of hardship, namely housing, medical needs, food, and basic utilities, are “obviously associated,” they are “best understood as arising from processes that are [not] identical” (p. 761). Accordingly, I utilize the individual measures to ensure that I observe differences across the four dimensions, but also use the “experienced two or more hardships” variable to provide further details on more severe instances of material hardship.

Asset_poor is a binary variable measuring asset poverty, which is equal to one if the household’s asset holdings (bonds/securities, interest-earning accounts, stocks, checking accounts, IRA’s, savings bonds, Keogh accounts, and 401(k), 403(b), or thrift accounts) are less than the amount needed to subsist at the poverty level for three months. This measure is comparable to the definition of asset poverty used in McKernan, Ratcliffe, and Vinopal and also

adheres to a generally accepted definition of asset poverty (Caner and Wolff, 2004; Haveman and Wolff, 2004). This measure combines totally liquid assets, like checking accounts and savings bonds, with semi-liquid assets like IRA or 401(k) accounts. *Economic_shock* is also a binary variable that equals one if the household experienced a job loss, work-limiting health condition, or change in household composition.

The interaction term (*economic_shock*asset_poor*) shows whether the relationship between asset poverty and hardship is stronger or weaker for households that experience an economic shock. The coefficient on the interaction term needs to be positive and significant to match my first hypothesis that, all else equal, those who experience an economic shock and are asset poor have the highest likelihood of material hardship.

Income is total monthly household income. The *demographics* variable listed above is shorthand for the following controls used in the analysis: *age*, *age squared*, a dummy for *gender*, dummies for *race* (*white*, *black*, *Hispanic*, *Asian*, *other race*), *number of children*, dummies for *household type* (*married*, *female headed family*, *male headed family*, *female headed non-family*, *male headed non-family*, *group quarters*), and *education* dummies (*less than a high school degree*, *high school graduate*, *some college*, *Bachelor's degree*, *post-Bachelor's degree*). The *occupation* variable represents a series of 19 dummy variables for broad fields of occupation: managers, business operations, math and social sciences, law, counseling, education, fine arts and broadcasting, health, law enforcement, food services, personal care services, retail, administrative, agriculture, construction, mechanics, production and operating, transportation, and material moving. As my unit of analysis is the household, all demographic and worker characteristics refer to those of the household head.

The *other_assistance* variable encompasses three binary variables: public assistance received, other assistance received, and expectations of help. The “public assistance received” variable is a dummy equal to one if anyone in the household received any public assistance benefits from Social Security, unemployment insurance, SSI, WIC, SNAP, TANF, Medicare, Medicaid, Section 8 Housing Vouchers, Public Housing, Veterans Compensation, Worker’s Compensation, or Energy Assistance. A “receipt of other assistance” variable is a dummy equaling one if anyone in the household received severance, child support, alimony, employer disability payments, payments from their own health insurance, or monetary assistance from family or friends. The “expectations of help from family, friends, or others” variable is a dummy equal to one if the household expects to receive “all” or “most” of the help they need from family, friends, or others when they face a problem. The SIPP questions do not define specifically what “help” from these groups would entail, so “help” may include monetary assistance as well as physical or emotional assistance. Although not a perfect measure of actual help received, the “expectations of help” variable helps control for the strength of social networks.

I estimate Model 1 by Ordinary Least Squares (OLS) for the full model and then separately for each third of the income distribution, so that the importance of assets can be compared across various income levels.

I next consider the following model:

$$\text{Model 2: } Y_i = B_0 + B_1 * \textit{own_home} + B_2 * \textit{economic_shock} + B_3 * \textit{economic_shock} * \textit{own_home} + B_4 * \textit{income} + B_5 * \textit{demographics} + B_6 * \textit{occupation} + B_7 * \textit{other_assistance} + B_8 * \textit{liquid_assets_value}$$

Model 2 is analogous to Model 1, except instead of considering the relationship between asset poverty and material hardship, I examine the relationship between homeownership and material

hardship. The *own_home* variable is a binary variable equal to one if the household has reported their living quarters are “owned or being bought by the occupant.” As homeownership is likely highly correlated with other types of asset accumulation, I control for the total value of liquid assets. The *income*, *demographics*, *occupation*, and *other assistance* variables are the same as in Model 1. My second hypothesis suggests the coefficient on the interaction term in this model will be negative, but smaller in magnitude (in terms of absolute value) than the interaction term from Model 1. Like Model 1, Model 2 is first estimated by OLS for the full sample and then estimated separately for each third of the income distribution to determine if the relationship between homeownership and hardship varies by income level.

V. Data

Structure of the SIPP

This study utilizes data from the 2008 panel of the SIPP. The Census Bureau has conducted the SIPP since 1983, and each panel lasts roughly two to four years. A new panel begins approximately every four years. The SIPP’s purpose is to better understand the economic well-being of individuals and households in the United States, as well as to evaluate the effectiveness of federal and state programs and estimate these programs’ future costs. The survey follows the same people over time, questioning them once every four months. Each four month period is referred to as a “wave,” and each SIPP panel typically has 8 to 12 waves. Every wave asks the same core questions, pertaining to demographics, income, labor force participation, and involvement in public benefit programs. Most waves also have an additional “topical module” with more in-depth questions on a variety of subjects. The SIPP selects participants by picking addresses within clusters based on housing information from the decennial census; each panel

selects new participants using this technique. All available individuals in the household over age 15 are surveyed, and other members of the household can answer for those that are unavailable. With survey weights, the SIPP is representative of the non-institutionalized, civilian population of the United States (Ratcliffe et al., 2007).

Variable Definitions

The *economic_shock* variable is equal to one if anyone in the household over age 15 experiences job loss, the onset of a work-limiting health condition, or a change in household composition (this could include either the addition or subtraction of a household member) between September 2009 to August 2010 (Waves 4, 5, or 6). Job loss is tabulated using the “had a paid job during reference period” question. If one has a job in Wave 4 and then does not have one in Wave 5, he/she has experienced job loss. Similarly, if one has a job in Wave 5 and does not have one in Wave 6, he/she has experienced job loss. My initial analysis was at the person level and then collapsed to the household level, which means that if anyone in the household (over age 15) lost their job, the household is coded as having a job loss. This measure of employment on the SIPP limits my ability to measure all job loss, as it only asks if the person had any paid job in the period, regardless of the hours of the position or the length of time the job was held. Therefore, people who lost one job but quickly gained a new job are not considered in my measure of job loss. In addition, if one lost a full-time job but was able to find a part-time position during the reference period, they are also not within the “job loss” group. Finally, during the Great Recession many people experienced substantial reductions in their working hours or reduction in their pay, although they technically maintained their job (Taylor et al., 2010); again, these individuals are not counted in my definition of job loss. Therefore, my measure likely

understates the true level of employment instability and job loss in this time period.

For a work-limiting health condition, data again come from September 2009 to August 2010 (Waves 4, 5, and 6). To be considered as having a condition, an individual (over age 15) responded that he/she did not have a work-limiting condition in Wave 4 and did have one in Wave 5; similarly, a person who did not have a condition in Wave 5 and had one in Wave 6 is considered to have a work-limiting condition. I only consider individuals whose status on this question changed from “no” to “yes” in subsequent waves; consequently, the *economic_shock* counts those individuals who have newly experienced the health condition and not those that have chronically suffered from such a condition. Like job loss, all individuals (over age 15) are analyzed at the person level and then data is collapsed to the household level. Therefore, if anyone experiences the event in the household, the household is coded as having experienced the event. Changes in household composition are considered from a question asked in each wave concerning whether there was a change in household composition during the wave. All households that experienced a change in household composition at any point during September 2009 to August 2010 (Waves 4, 5, or 6) are coded as having experienced an economic shock.

For the hardship variables, each is a binary variable equaling one if the household experienced the event. Hardship is measured in the adult well-being topical module of Wave 6. The reference period for hardship measures, other than the food hardship, is September 2009 to August 2010 (Waves 4, 5, and 6). For these hardships, then, I measure hardship and economic shock over the same three wave period. The food hardship refers just to May to August 2010 (Wave 6). The question about eviction is only asked of those who answered that they had not paid their mortgage. However, I have considered all those who did not have trouble paying their

mortgage as also not having an issue with eviction. Consequently, the eviction question in my analysis has the same sample size as all other hardship questions. Similarly, the question about whether the household's gas or electricity was turned off was only asked of those households who answered they have not paid their gas, oil, or electricity bills. I consider all those who did pay their gas, oil, or electric bill as not having experienced gas or electric service shut off, making the sample for this question the same size as all other hardships. The reference period for hardship questions, other than food security, is September 2009 to August 2010 (Waves 4, 5, and 6). Consequently, I measure hardship and economic shocks during the same three wave period.

Demographic, income, and worker characteristic data as well as income come from January to April 2009 (Wave 2). Income is measured as total monthly household income. All demographic and worker information refers to the household head. As the economic shock variable uses data from September 2009 to August 2010 (Waves 4, 5, and 6), all household, worker, and demographic characteristics are measured prior to any economic shocks considered in this analysis. The "other assistance" variables address the period May to August 2010 (Wave 6). The value of assets used in the asset poverty definition comes from data in the Wave 4 topical module on assets and liabilities, meaning liquid assets are measured from September to December 2009. Homeownership data also is measure from September to December 2009 (Wave 4). Both those with and without mortgages are counted as homeowners. Essentially, those coded as one are non-renters, while those coded as zero are renters. See Figure 2 for a summary of variables by wave and calendar date.

FIGURE 2: VARIABLE LIST, BY SIPP WAVE AND CALENDAR MONTH

	Wave 2				Wave 4				Wave 5				Wave 6			
Months	January 2009	February 2009	March 2009	April 2009	September 2009	October 2009	November 2009	December 2009	January 2010	February 2010	March 2010	April 2010	May 2010	June 2010	July 2010	August 2010
Variables Taken from Wave	Household Income Demographic Characteristics Occupation				Asset Poverty (and Total Value of Liquid Assets) Homeownership Economic Shocks				Economic Shocks				Material Hardship Other Assistance Economic Shocks			
Hardship Reference Period					Reference Period for the Rent/Mortgage, Eviction, Doctor, Dentist, Gas/Electric Bill, Gas/Electric Shut Off and Phone Hardships				Reference Period for the Rent/Mortgage, Eviction, Doctor, Dentist, Gas/Electric Bill, Gas/Electric Shut Off and Phone Hardships				Reference Period for the Rent/Mortgage, Eviction, Doctor, Dentist, Gas/Electric Bill, Gas/Electric Shut Off, Phone, and Food Hardships			

Survey Attrition

For the 2008 panel, the survey began in September 2008 with 42,032 interviewed households and will last for 13 waves until December 2012. Waves 2 (September-December 2008), 4 (May-August 2009), 5 (September-December 2009), and 6 (January-April 2010) are utilized in this analysis. The Census interviewed 34,891 households in Wave 6, which means the sample loss from the first wave is 17 percent. The Census Bureau “makes nonresponse adjustments to the longitudinal weights to compensate for panel attrition and poststratification adjustments to make the weighted sample totals conform to population totals for key variables” (SIPP User Guide, 2009). These actions perhaps lessen the effects of survey attrition issues, but do not eliminate them, particularly if attrition is non-random based on unobservable factors. Consequently, although the original sample was representative of the non-institutionalized, civilian U.S. population, the sample that I examine may no longer be representative, leading to potential threats to the external validity of my study.

To assess the difference between those households that appear in all waves and those that attrite from the sample, Table 1 compares the mean of demographic characteristics for those in all waves against those present in Wave 2 but not present in at least one of the following waves. For most measures, there are significant differences between those that attrite and those that remain. Those who remain are significantly more likely to have an IRA, a checking account, or a savings account. Those that remain have about \$500 more in monthly income, on average, and are about 7 years older, than those that attrite. Most education levels are not statistically significantly different between the two groups. Race and household type do vary significantly: those who remain are more likely to be white and from a married household and less likely to be

TABLE 1: DESCRIPTIVE STATISTICS

Variable	Those in All Waves	Attriters	T-statistic of Difference Between Attriters and Those in All Waves
<i>Observations</i>	25,920	13,010	
Wave 2			
Married Household	0.533	0.438	16.4***
Male Headed Family Household	0.041	0.054	-4.97***
Female Headed Family Household	0.109	0.150	-10.8***
Male Headed Non-Family Household	0.139	0.175	-8.29***
Female Headed Non-Family Household	0.176	0.174	0.420
Age (in years)	52.6	45.2	38.6***
Female	0.525	0.526	-0.31
Less than High School Degree	0.100	0.101	-0.300
High School Graduate	0.254	0.248	1.16
Some College	0.342	0.370	-4.92***
Bachelor's Degree	0.191	0.186	1.14
Post-Bachelor's Coursework or Degree	0.113	0.095	4.97***
White	0.727	0.675	9.42***
Black	0.110	0.132	-5.42***
Asian	0.028	0.039	-5.23***
Hispanic	0.111	0.129	-4.16***
Monthly Income (in thousands)	5.40	4.94	7.60***
Have an IRA	0.365	0.276	16.8***
Have a Checking Account	0.453	0.403	8.82***
Own Stocks	0.193	0.151	10.1***
Have a Savings Account	0.607	0.578	5.25***
Waves 4,5,6			
Experienced Economic Shock	0.178		
Experienced Job Loss	0.068		
Experienced Change in Household Composition	0.090		
Experienced Onset of Work-Limiting Health Condition	0.041		
Asset Poor	0.388		
Own a Home	0.756		

Notes: Sample means are presented. The unit of analysis is the household. All demographic characteristics refer to the household head; data for income, assets, economic shocks, and homeownership combines information from all members of the household. The control variables from Wave 2 compare those observations that are present through all four waves (2, 4, 5 and 6) with attriters-- those who appear in Wave 2 but do not appear in all later waves. Using a dummy variable for whether the observation was present in all waves as the independent variable, a simple bivariate regression was run with each control variable as the dependent variable, with the resulting t-statistics listed in Column 3. All estimates from Wave 2 are weighted using the Wave 2 household weights. Statistical significance is denoted (***=significant at 1% level. **=significant at 5% level. *= significant at 10% level). The variables from Waves 4, 5, and 6 are weighted by the Wave 6 household weights. "Experienced an economic shock" is a binary variable equal to 1 if anyone in the household experienced a job loss, household change, or work-limiting health condition in Waves 4, 5, or 6. "Experienced Job Loss," "Experienced Change in Household Composition," and "Experienced Onset of Work-Limiting Health Condition" are binary variables equal to one if any member of the household experienced the respective shock. Households are considered asset poor if the value of their liquid assets is less than three times the poverty rate. "Own a home" is a dummy for whether the household owns its living quarters. Asset poverty and homeownership are measured in Wave 4.

black, Hispanic, or Asian or from a male headed family or female headed family household.

Some of these differences mirror attrition in other longitudinal surveys, which tends to be concentrated amongst those with lower socioeconomic status and higher marital instability

(Fitzgerald, Gottschalk, and Moffitt, 1998). Because of these differences, the sample which I use in this study may not be representative of the entire U.S. population, and therefore broad generalizations to the whole population should be made with caution.

Descriptive Statistics

For those present in all four waves, the full sample is 25,920 households. This number is lower than the total interviewed in Wave 6 because of the interview process of the SIPP. If individuals within one household in Wave 2 later leave that household and establish their own household, the SIPP continues to follow them as a new household. Because this new household did not exist in all four waves of my study, I do not use these households in my sample. In addition, the SIPP continues to follow households even if they miss one wave. Consequently, people can drop out and then return to the survey later. Such households are not included in this study, as I need data from all four waves for my analysis.

Of the full sample, 53 percent of households are headed by a married couple, while nearly 11 percent are female headed family households. Nearly 73 percent of household heads are white, while 11 percent of household heads are black and 11 percent are Hispanic. In terms of the key independent variables, 17.8 percent of households experienced an economic shock. Almost 39 percent of households are asset poor, and over 75 percent of households in the full sample live in homes they own (this includes both those who have mortgages and those that have paid off their mortgages). According to the 2010 American Community Survey, about 65 percent of Americans live in owner-occupied housing units. So, my sample has a much higher proportion of homeowners than is true of the broader population. This discrepancy may be explained by the fact that the average age of householders in my sample is much higher than the national average.

Also according to the 2010 American Community Survey, the median age in the U.S. is 37.2 years old, which is significantly lower than my sample’s median age of 53 years. As elderly individuals are more likely to be homeowners (AoA, 2010), it makes sense that my sample has more homeowners than is expected. Table 1 provides additional descriptive statistics.

TABLE 2: DESCRIPTIVE STATISTICS, BY INCOME THIRD

Mean	Bottom Income Third	Middle Income Third	Top Income Third
<i>Observations</i>	8,630	8,649	8,641
Asset Poor	0.674	0.378	0.140
Experienced Economic Shock	0.140	0.186	0.204
Experienced Job Loss	0.047	0.069	0.086
Experienced On-set of Work Limiting Health Condition	0.041	0.043	0.041
Experienced Change in Household Composition	0.068	0.096	0.103
Own a Home	0.557	0.766	0.898
Did Not Have Enough Food	0.040	0.020	0.007
Did Not Pay Rent/Mortgage	0.095	0.073	0.043
Evicted From Home	0.004	0.002	0.0003
Did Not Go to Dentist Because of Cost	0.135	0.089	0.043
Did Not Go to Doctor Because of Cost	0.113	0.071	0.035
Phone Disconnected	0.046	0.030	0.014
Did Not Pay Gas, Oil, or Electric Bill	0.145	0.097	0.043
Gas or Electric Turned Off	0.025	0.015	0.006
Experienced Two or More Hardships	0.165	0.108	0.052

Notes: These values are the sample means, weighted using the household weight from Wave 6. Households are considered asset poor if the value of their liquid assets is less than three times the poverty rate. “Own a home” is a dummy for whether the household owns its living quarters. Asset poverty and homeownership are measured in Wave 4. The economic shock variable is a binary equal to one if the household experienced any of the following events: job loss, onset of a work-limiting health condition, or a change in household composition. The economic shock variable uses data from Waves 4, 5, and 6. The nine hardship measures are binary variables equal to one if the household experienced the hardship; material hardship is measured in Wave 6. The bottom income third earns \$2,567 or less a month. The middle income third earns between \$2,568 and \$5,695. The top income third earns over \$5,695 a month.

The bottom income third restricts the sample to just those households with total monthly income less than \$2,567. The middle income third includes only households with monthly income between \$2,568 and \$5,695. The top income third includes those earning over \$5,695 per month. The bottom income third has the highest asset poverty rate, with over 67 percent of households being asset poor, compared to just 14 percent of the top income third (Table 2).

Similarly, homeownership rates are much higher for the upper income levels, but are still relatively high in the bottom income third at 55.7 percent. Somewhat surprisingly, the top income third is more likely to experience an economic shock, on average, than those in the bottom or middle income thirds. Table 2 reports further descriptive statistics broken down by income level.

VI. Results

Model 1: Asset Poverty

In Table 3, the results of running the asset poverty model without controls are displayed. I include this model to compare my results to those of McKernan, Ratcliffe, and Vinopal. Before comparing the results, I must consider some key differences between the studies. First, they used the U.S. Census Bureau's definition of a social family, rather than households. Their definition of "social family" was also further restricted to those families with an adult aged 25 to 58 and at least one child in the household under age 18. I did not make either of these restrictions on my sample. Second, they consider a different time frame (the 1996 SIPP and 2001 SIPP); third, they consider two additional hardships, food insecurity and trouble paying basic bills, along with the nine measures in my study. Finally, the structure of the SIPP panels utilized in their analysis allowed for more lagged results of hardship. They measure hardship a full year after adverse events, whereas I measure hardship and adverse events over the same period. Hardship likely does occur after some time has passed after an economic shock, but unfortunately, due to the structure of the 2008 SIPP, I cannot incorporate much lag time into my analysis.

Using no controls in their model, McKernan, Ratcliffe, and Vinopal found that among those that experience an economic shock, asset poor families were 23 percentage points more

likely to have “general deprivation” (two or more hardships) than non-asset poor families. In my study, asset poor households that experience economic shocks are 7.3 percentage points more likely to experience two or more hardships than households that are not asset poor and/or did not experience an economic shock. The differences in results between the two studies may be slightly attributable to the different definitions of family used, the two additional hardships measured in their study, and their time-lag. In addition to these factors, the time periods of study are likely a substantial contributor to the difference. Although McKernan, Ratcliffe, and Vinopal’s study does include some recession years with the 2001 SIPP panel, the 2008 SIPP covers a much deeper recession. One would expect that as income volatility increased during the Great Recession, asset poverty would be associated with greater material hardship because assets would be particularly useful during periods of macroeconomic uncertainty and fluctuations in the flow of income into the household. Yet, my results suggest just the opposite: asset poverty was associated with lower instances of hardship than McKernan, Ratcliffe, and Vinopal found. Overall, though, my results match their conclusion that asset poverty has a statistically significant association with material hardships for households that experience economic shocks.

When all the controls are added to the model, the coefficient on the interaction term (*economic_shock*asset_poor*) is positive and significant for all hardships except eviction (Table 4). These results indicate that asset poor households that have had economic shocks are considerably more likely to experience hardship. Using the rent hardship as an example, the coefficient on the interaction denotes that asset poor households with economic shocks are 5.8 percentage points more likely to be unable to pay their rent or mortgage than those households that are non-asset poor and/or do not experience an economic shock. This represents an 84

TABLE 3: MODEL 1- ASSET POVERTY, OLS REGRESSION RESULTS WITH NO CONTROLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Did Not Have Enough Food	Did Not Pay Rent or Mortgage	Evicted from Home	Did Not Go to Dentist When Needed Because of Cost	Did Not Go to Doctor When Needed Because of Cost	Phone Disconnected	Did Not Pay Gas, Oil, or Electric Bill	Gas or Electric Turned Off	Experienced Two or More Hardships
<i>Sample Mean</i>	0.022	0.069	0.002	0.087	0.072	0.029	0.093	0.015	0.107
Asset Poor	0.034*** (0.002)	0.071*** (0.004)	0.003*** (0.001)	0.090*** (0.005)	0.073*** (0.004)	0.041*** (0.003)	0.114*** (0.005)	0.017*** (0.002)	0.127*** (0.005)
Experienced Economic Shock	0.006** (0.003)	0.023*** (0.006)	0.001 (0.001)	0.019*** (0.006)	0.019*** (0.005)	0.003 (0.004)	0.027*** (0.006)	0.002 (0.003)	0.026*** (0.007)
Experienced Economic Shock*Asset Poor	0.015** (0.007)	0.069*** (0.012)	0.0004 (0.003)	0.038*** (0.012)	0.047*** (0.011)	0.030*** (0.008)	0.051*** (0.012)	0.025*** (0.007)	0.073*** (0.013)
<i>R-squared</i>	0.016	0.034	0.001	0.031	0.028	0.020	0.048	0.011	0.056

Notes: Robust standard errors are in parentheses. Statistical significance is noted with asterisks (***=significant at 1% level. **=significant at 5% level. *= significant at 10% level). The “Sample Mean” row is the mean of each hardship measure for the full sample, weighted using the household weights from Wave 6. All other rows are results from an OLS regression with a binary hardship measure as the dependent variable and a dummy for asset poverty, a dummy for experiencing an economic shock, and an interaction term between the asset poverty and economic shock dummies as the key independent variables. Separate regressions for each hardship are run, with results in the corresponding columns. For all columns, n=25,920, with the unit of analysis being the household. No controls were used in this analysis. Households are considered asset poor if the value of their liquid assets are less than three times the poverty rate. The economic shock variable (measured in Waves 4, 5, and 6) is a binary equal to one if the household experienced any of the following events: job loss, onset of a work-limiting health condition, or a change in household composition. All estimates are weighted using the household weight from Wave 6.

percent increase in the likelihood of experiencing this hardship (relative to the 6.9 percent average likelihood of experiencing this hardship for the full sample).

I next ran the OLS regression of Model 1 separately for each third of the sample's income distribution. Figure 3 graphs the coefficients on the interaction terms and the 95 percent confidence interval around each estimate. The bottom income third has coefficients on the interaction term which are significant and positive for the rent/mortgage, dentist, doctor, phone, gas/electric bill, gas/electric turned off, and two or more hardship measures. For the middle income third, only the coefficients on the interaction for the rent/mortgage and two or more hardships measure are significant and positive, and for the top income third, only the coefficient on the eviction hardship is significant, and it is negative. No strict pattern holds when comparing the interaction coefficients across the three income groups and the nine hardships. However, two general trends can be noted. First, looking at the rent/mortgage, dentist, phone, gas/electric bill, gas/electric turned off, and the two or more hardships measures, the magnitude of coefficient on the interaction terms is greatest for the lowest income third and declines as income increases. Second, the bottom income third is more likely to have significant positive coefficients on the interaction than either the middle or top income thirds.

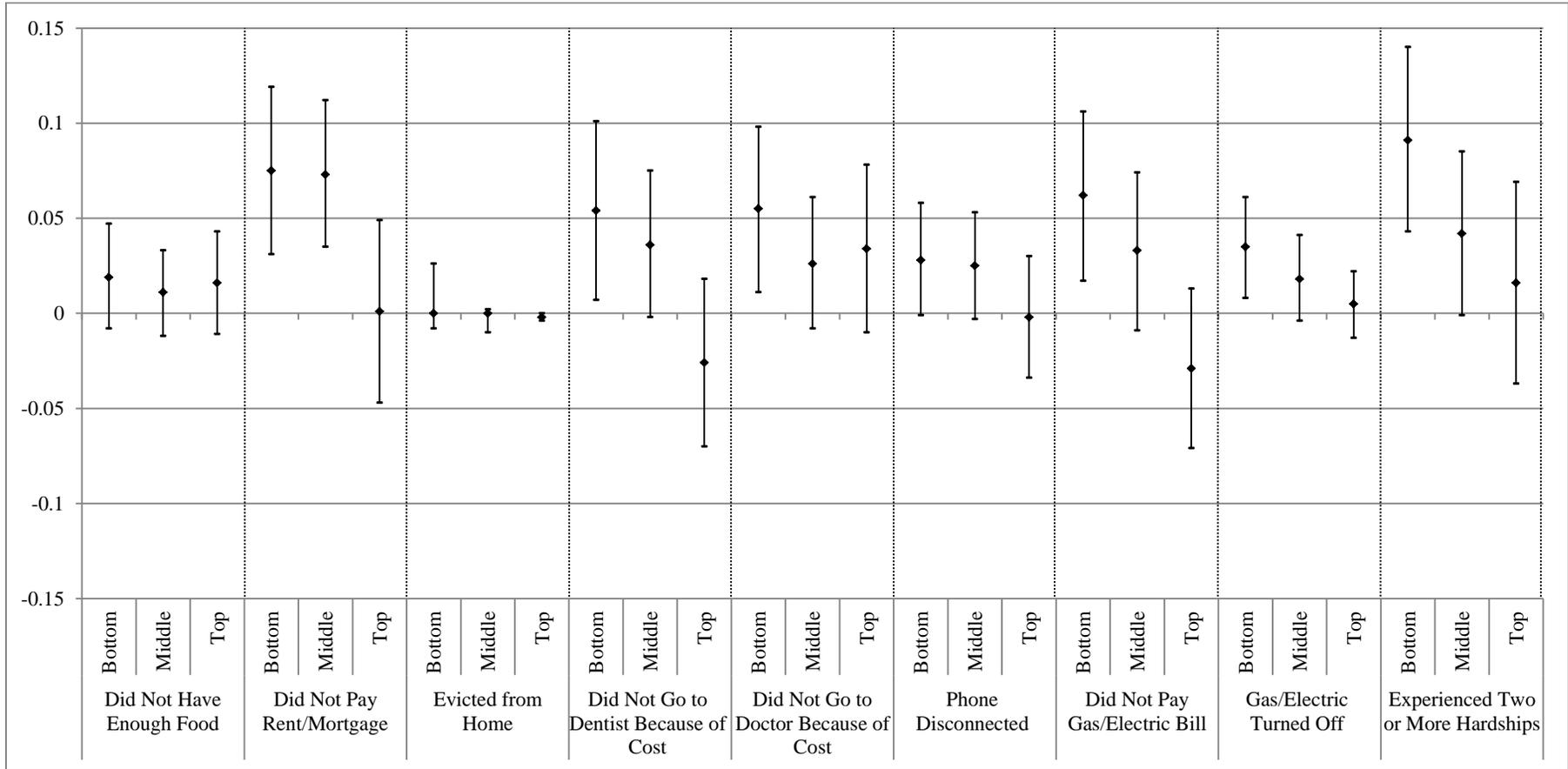
For example, in the gas/electric bill hardship, households in the lowest third of the income distribution that experienced an economic shock and are asset poor have an associated 6.2 percentage point increase in the likelihood of experiencing the hardship. The sample mean for the lowest income third for the gas/electric bill hardship is 0.145. Thus, being asset poor and experiencing an economic shock represents a roughly 43 percent increase of the likelihood of experiencing this hardship relative to the sample mean. For the middle income third, asset

TABLE 4: MODEL 1- ASSET POVERTY, OLS REGRESSION RESULTS WITH ALL CONTROLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Did Not Have Enough Food	Did Not Pay Rent or Mortgage	Evicted from Home	Did Not Go to Dentist When Needed Because of Cost	Did Not Go to Doctor When Needed Because of Cost	Phone Disconnected	Did Not Pay Gas, Oil, or Electric Bill	Gas or Electric Turned Off	Experienced Two or More Hardships
<i>Sample Mean</i>	0.022	0.069	0.002	0.087	0.072	0.029	0.093	0.015	0.107
Asset Poor	0.019*** (0.003)	0.039*** (0.004)	0.002* (0.001)	0.057*** (0.005)	0.046*** (0.005)	0.020*** (0.003)	0.061*** (0.005)	0.005*** (0.002)	0.073*** (0.005)
Experienced Economic Shock	0.003 (0.003)	0.005 (0.006)	0.0004 (0.001)	0.008 (0.006)	0.011** (0.005)	-0.006* (0.004)	0.006 (0.006)	-0.002 (0.003)	0.004 (0.007)
Experienced Economic Shock*Asset Poor	0.012* (0.007)	0.058*** (0.012)	0.0001 (0.003)	0.030** (0.012)	0.040*** (0.011)	0.024*** (0.008)	0.037*** (0.012)	0.022*** (0.007)	0.058*** (0.013)
Received Any Public Assistance Benefits	0.018*** (0.003)	0.033*** (0.005)	-0.001 (0.001)	0.043*** (0.005)	0.021*** (0.005)	0.021*** (0.003)	0.057*** (0.005)	0.009*** (0.002)	0.058*** (0.006)
Expect to Receive “All” or “Most” of Help Needed	-0.051*** (0.005)	-0.092*** (0.007)	-0.003** (0.001)	-0.114*** (0.007)	-0.102*** (0.007)	-0.040*** (0.005)	-0.108*** (0.007)	-0.024*** (0.004)	-0.149*** (0.008)
<i>R-squared</i>	0.042	0.078	0.004	0.074	0.066	0.046	0.106	0.027	0.124

Notes: Robust standard errors are in parentheses. Statistical significance is noted with asterisks (***)=significant at 1% level. **=significant at 5% level. *= significant at 10% level). The “Sample Mean” row is the mean of each hardship measure for the full sample, weighted using the household weights from Wave 6. All other rows are results from an OLS regression with a binary hardship measure as the dependent variable and a dummy variable for asset poverty, a dummy for experiencing an economic shock, and an interaction term between the asset poverty and economic shock dummies as the key independent variables. Separate regressions for each hardship are run, with results in the corresponding columns. For all columns, n= 25,920, with the unit of analysis as the household. All regression estimates are weighted using the household weight from Wave 6. Controls included in the analysis are: household type dummies (Female Headed Family Households, Male Headed Family Households, Female Headed Non-Family Households, Male Headed Non-Family Households, Group Quarters), race dummies (Hispanic, Asian, Black, Other Race), education dummies (Post-Bachelor’s study, Bachelor’s degree, Some College, Less than a High School Degree), female dummy, age, age squared, household size, income, occupation code dummies (managers, business operations, math and social sciences, law, counseling, education, fine arts and broadcasting, health, law enforcement, food services, personal care services, retail, administrative, agriculture, construction, mechanics, production and operating, transportation, and material moving), expectations of help from family, friends, or others, receipt of public assistance, and receipt of other assistance. All demographic characteristics are those of the household reference person. The reference group is white, married households with a high school degree and missing occupation code. The “any public assistance” variable is a dummy equal to one if anyone in the household received any of the following: Social Security, unemployment benefits, SSI, WIC, SNAP, TANF, Medicare, Medicaid, Section 8 Housing Vouchers, Public Housing, Veterans Compensation, Worker’s Compensation, or Energy Assistance. The “receipt of other assistance” variable is a dummy equaling one if anyone in the household received severance, child support, alimony, employer disability payments, own sickness insurance payments, or monetary assistance from family or friends. The “expect ‘all’ or ‘most’ of help needed” variable is a dummy equal to one if the household expects to receive “all” or “most” of help needed from family, friends, or others; this variable combines separate questions on each group.

FIGURE 2: MODEL 1- ASSET POVERTY, OLS REGRESSION RESULTS, BY INCOME THIRD



Notes: Results graphed here are the coefficients on the interaction term from the model, with the upper and lower 95% confidence interval. The asset poor model is run for each income third. The “Bottom,” “Middle,” and “Top” labels denote results for each hardship for each third of the income distribution. For each income third, the sample is restricted to only those within that income third. For the bottom income third of the distribution, just those households with total monthly income less than \$2,567 are included, making 8,630 observations. For the middle income third, the sample is 8,649 observations and includes only households with monthly income between \$2,568 and \$5,695. For the top income third, the sample is 8,641 and includes those households earning over \$5,695 a month. The model is specified exactly as in Table 4; see the Table 4 notes for further details.

poverty coupled with experiencing an economic shock is associated with a 3.3 percentage point increase in the likelihood of experiencing the hardship, and the top income third actually has a lower likelihood of experiencing the hardship, with a coefficient on the interaction of -0.029. This suggests that the top income third is less likely to experience the hardship if they are asset poor and have an economic shock. These results do roughly follow my hypothesis that asset poverty will hurt the lowest income third the most, but I did not anticipate the highest income third actually having a negative coefficient on the interaction term. The interaction coefficient for the top-income third is not statistically significant, though, so no firm conclusions can be reached from this result.

As a further example, for the rent hardship, households in the bottom and middle thirds of the income distribution that are asset poor and experience an economic shock have much higher predicted hardship levels than the top income third. Households in the bottom and middle thirds of the income distribution both have an approximately 7.5 percentage point increase in the likelihood of experiencing the rent hardship. This is a 79 percent increase from the sample mean for the bottom third, and a 103 percent increase from the sample mean for the middle income third. In contrast, the top income third again has just a 0.01 percentage point increase. This result suggests that assets are most valuable for avoiding hardship at lower and middle income levels during economic shocks, for asset poverty at the lower income levels is associated with greater experiences of hardship than at higher income levels. In fact, four of the coefficients on the interactions are negative for the top income level, suggesting that assets may not be very important following economic shocks for these households. McKernan, Vinopal, and Ratcliffe similarly found that assets were most beneficial for lower and middle income families.

Model 2: Homeownership

Model 2 addresses homeownership, rather than asset poverty. With the controls, the coefficients on the interaction term are negative for the all hardships except eviction, but only the coefficient on the gas/electric turned off is significant (Table 5). Households that own their home and experience an economic shock have a predicted 1.3 percentage point decrease in the likelihood of experiencing their electric or gas being shut off. This result represents an approximately 87 percent decrease in the likelihood of experiencing the hardship (relative to the 1.5 percent average likelihood of experiencing the hardship for the full sample).

Overall, though, homeownership did not have a statistically significant association with hardship measures for those households that experience economic shocks. I hypothesized that the coefficients on the interaction term would be significant and negative, although with smaller magnitudes than the asset poverty model. In general, the results from Models 1 and 2 suggest that for households that experience an economic shock, asset poverty has a significant, positive association with hardship while homeownership has a negative, but largely insignificant association with experiences of hardship. My hypothesis that liquid assets would be more beneficial than homeownership seems largely reinforced by these findings. However, my hypothesis that homeownership would still have a significant, negative relationship with material hardship is not supported by these results.

I also estimated the homeownership OLS regressions separately for each income third. Figure 3 displays the coefficients on the interaction term along with the 95% confidence interval. Many coefficients are actually positive in this estimation, contrary to my expectation that homeownership would be negatively associated with material hardship or those that experience

economic shocks. These results indicate that homeownership may actually be associated with greater hardship for lower and middle income households. Yet, these results are not statistically significant, as only the interaction coefficient on the eviction term for the lowest income households is significant. Consequently, it is difficult to rigorously analyze the differences in the results. Further research into the likelihood of experiencing hardship for homeownerships following economic shocks can be explored to provide additional empirical evidence on the benefits and costs of homeownership, particularly for low-income households.

A Cautionary Note

Estimates from both Model 1 and Model 2 may suffer from omitted variable bias as I am not able to control for all factors that influence hardship and also are related to acquiring assets. Those who do choose to and are able to acquire assets may have personal characteristics (motivated, future-oriented, etc.) that also would limit their experience of hardship. I have controlled for demographic characteristics that may address some of these personal characteristics, like age, household size, and education level. Yet, these controls cannot fully capture motivation or other traits that are hard to measure. For the asset poverty model, omitted variables could create positive bias in the estimated coefficients, meaning I have overstated the true effect of holding assets. Likewise, for the homeownership model, I have likely overstated the true effect of homeownership due to omitted variable bias.

VII. Discussion

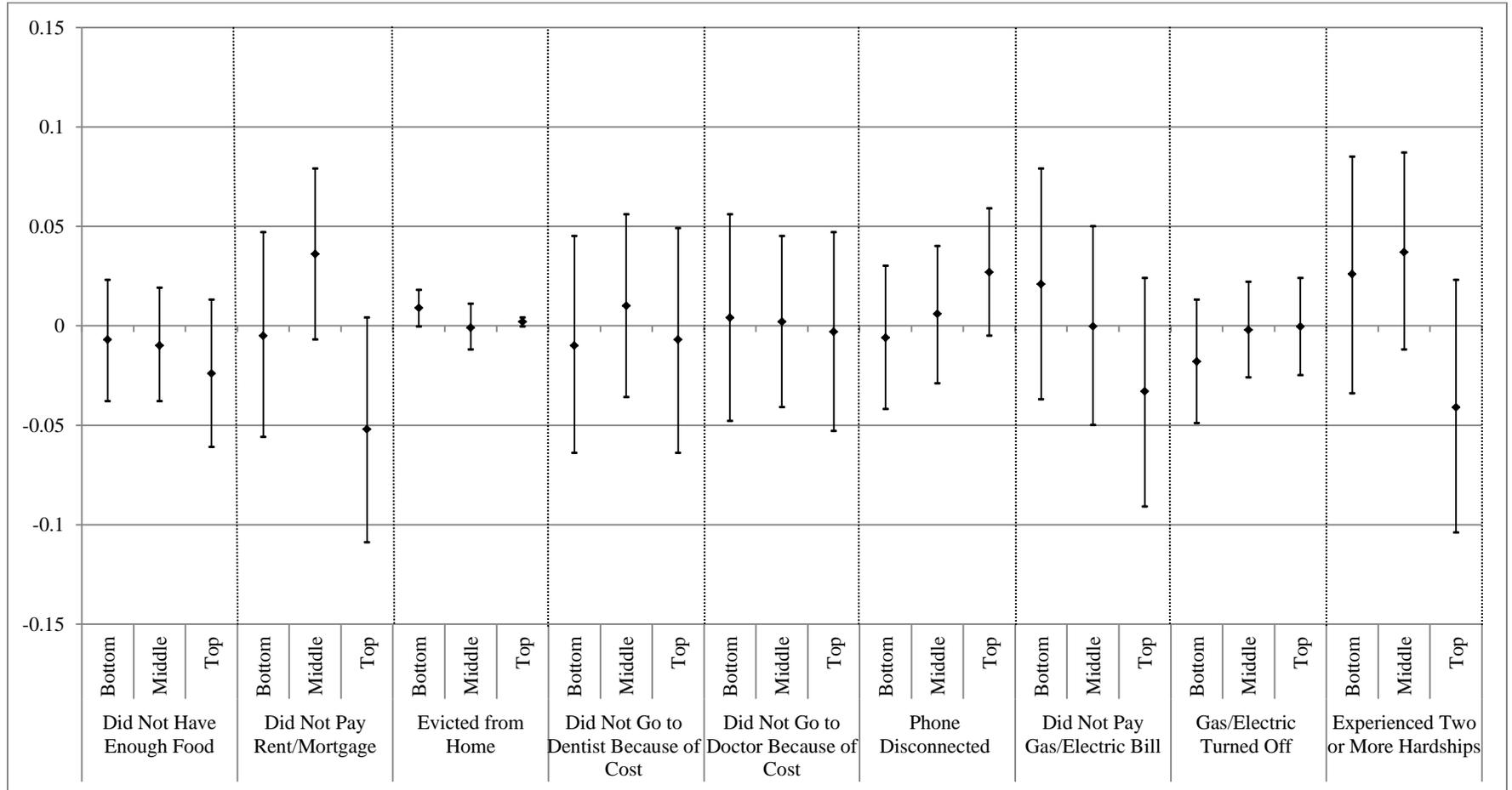
Beginning in the early 1990's, many scholars have suggested that a welfare system that promotes asset building, rather than our current income-based system, would better serve the

TABLE 5: MODEL 2- HOMEOWNERSHIP, OLS REGRESSION RESULTS WITH ALL CONTROLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Did Not Have Enough Food	Did Not Pay Rent or Mortgage	Evicted from Home	Did Not Go to Dentist When Needed Because of Cost	Did Not Go to Doctor When Needed Because of Cost	Phone Disconnected	Did Not Pay Gas, Oil, or Electric Bill	Gas or Electric Turned Off	Experienced Two or More Hardships
<i>Sample Mean</i>	0.022	0.069	0.002	0.087	0.072	0.029	0.093	0.015	0.107
Own Home	-0.020*** (0.003)	-0.013** (0.005)	-0.004*** (0.001)	-0.024*** (0.006)	-0.018*** (0.005)	-0.020*** (0.004)	-0.028*** (0.006)	-0.002 (0.003)	-0.037*** (0.006)
Experienced Economic Shock	0.015* (0.008)	0.033** (0.013)	-0.002 (0.002)	0.029** (0.013)	0.035*** (0.012)	0.006 (0.009)	0.035** (0.014)	0.016** (0.007)	0.030** (0.015)
Experienced Economic Shock*Own Home	-0.011 (0.009)	-0.008 (0.014)	0.004 (0.003)	-0.014 (0.015)	-0.013 (0.014)	-0.004 (0.010)	-0.022 (0.015)	-0.013* (0.008)	-0.006 (0.016)
Received Any Public Assistance Benefits	0.019*** (0.003)	0.040*** (0.005)	-0.001 (0.001)	0.050*** (0.005)	0.028*** (0.005)	0.023*** (0.003)	0.064*** (0.005)	0.010*** (0.002)	0.068*** (0.006)
Expect to Receive “All” or “Most” of Help Needed	-0.051*** (0.005)	-0.093*** (0.007)	-0.003** (0.001)	-0.115*** (0.007)	-0.103*** (0.007)	-0.040*** (0.005)	-0.109*** (0.007)	-0.024*** (0.004)	-0.151*** (0.008)
<i>R-squared</i>	0.041	0.071	0.005	0.068	0.059	0.044	0.099	0.025	0.114

Notes: Robust standard errors are in parentheses. Statistical significance is noted with asterisks (***=significant at 1% level. **=significant at 5% level. *= significant at 10% level). The “Sample Mean” row is the mean of each hardship measure for the full sample, weighted using the household weights from Wave 6. All other rows are results from an OLS regression with a binary hardship measure as the dependent variable and a dummy for homeownership, a dummy for experiencing an economic shock, and an interaction term between the homeownership and economic shock dummies as the key independent variables. Separate regressions for each hardship are run, with results in the corresponding columns. For all columns, n= 25,920, with the unit of analysis being the household. All estimates are weighted using the Wave 6 household weights. Total value of liquid assets is controlled for in this model. Other controls included in the analysis are: household type dummies (Female Headed Family Households, Male Headed Family Households, Female Headed Non-Family Households, Male Headed Non-Family Households, Group Quarters), race dummies (Hispanic, Asian, Black, Other Race), education dummies (Post-bachelor’s degree, Bachelor’s degree, Some College, Less than a high school degree), female dummy, age, age squared, household size, income, occupation code dummies (managers, business operations, math and social sciences, law, counseling, education, fine arts and broadcasting, health, law enforcement, food services, personal care services, retail, administrative, agriculture, construction, mechanics, production and operating, transportation, and material moving), expectations of help from family, friends, or others, receipt of public assistance, and receipt of other assistance. All demographic characteristics are those of the household reference person. The reference group is married, white households with a high school degree and missing occupation code. The “any public assistance” variable is a dummy equal to one if anyone in the household received any of the following public assistance benefits: Social Security, unemployment benefits, SSI, WIC, SNAP, TANF, Medicare, Medicaid, Section 8 Housing Vouchers, Public Housing, Veterans Compensation, Worker’s Compensation, or Energy Assistance. The “receipt of other assistance” variable is a dummy equaling one if anyone in the household received severance, child support, alimony, employer disability payments, own sickness insurance payments, or monetary assistance from family or friends. The “expect ‘all’ or ‘most’ of help needed” variable is a dummy equal to one if the household expects to receive “all” or “most” of help needed from family, friends, or others; this variable combines separate questions of expectation of help from each group.

FIGURE 3: MODEL 2- HOMEOWNERSHIP, OLS REGRESSION RESULTS, BY INCOME THIRD



Notes: Results graphed here are the coefficients on the interaction term from the model, with the upper and lower 95% confidence interval. The homeownership model is run separately for each third of the income distribution. The “Bottom,” “Middle,” and “Top” labels denote results for each hardship for each third of the income distribution. For each income third, the sample is restricted to only those within that income third. For the bottom income third of the distribution, just those households with total monthly income less than \$2,567 are included, making 8,630 observations. For the middle income third, the sample is 8,649 observations and includes only households with monthly income between \$2,568 and \$5,695. For the top income third, the sample is 8,641 and includes those households earning over \$5,695 a month. The model utilized here is exactly the same as in Table 5; see the Table 5 notes for the further details.

poor. This theory generally assumes that assets, particularly liquid assets, will help families build wealth that can help them avoid needing public programs, particularly following economic shocks. If a family is able to draw on their own assets, they should be less likely to need public assistance, thereby increasing their own autonomy and reducing the government's expenses. In my analysis, being asset poor following economic shocks is associated with higher levels of hardship. The government wants to limit the number of people experiencing hardship, so encouraging people to build liquid asset wealth may be one mechanism through which to lower the levels of hardship experienced.

The positive association between asset poverty and hardship was strongest (for many hardship measures) for the lowest and middle income thirds. My findings suggest that being asset poor is most detrimental for the lower and middle income groups, and therefore, asset accumulation amongst lower and middle income households may particularly help alleviate hardship. Many of these households, especially those in the lowest income third, are eligible for some government programs. Most current means-tested programs have asset caps, which limit the level of asset holdings an individual can have to remain eligible for the program. If asset poverty really is most detrimental to lower income households, the government may wish to consider liberalizing asset caps, to allow households to accrue more assets without losing eligibility for public programs. This change would alter the incentives for low-income families, who currently may have disincentives to save if they fear asset holdings will make them ineligible for public assistance. In addition to increasing or eliminating asset caps for public programs, policymakers should examine other strategies to specifically target low-income households' asset accumulation. The government does extol some tax benefits for savings in retirement accounts and college tuition accounts, which can incentivize people to accumulate

these assets. Yet, low-income households are likely less responsive to current tax deductions than upper income households because they do not have substantial tax liability. Therefore, strategies other than tax breaks may be needed to target low-income families.

Additionally, the federal government has long incentivized homeownership through the mortgage interest tax deduction and federally insured loans. The benefits of homeownership, both social and financial, are considered great enough to encourage people to acquire a home. My results suggest that homeownership has few significant associations with lower material hardship for households experiencing an economic shock. Likewise, the results for Model 2 broken down by income third also produced few significant results. Further study into this question is needed, particularly examining possible negative consequences of homeownership for low-income households. If homeownership appears to extol fewer benefits for low-income households than high-income households, than policymakers may wish to examine policies that incentivize homeownership, as their effects may be disparate across the income spectrum.

Finally, the period I am studying is unique in recent American history, the worst economic recession since the Great Depression. The 2008 SIPP follows households through a period of high unemployment, a housing crisis, and general economic downturn. This situation is not representative of most time periods, so the data, and any analysis of it, may not apply to other periods of time, particularly during periods of economic boom.

VIII. Conclusion

Assets are theoretically a very useful resource for households to draw upon to avoid material hardship. This study demonstrates that even during a deep economic recession, holding assets is associated with significantly lower levels of material hardship after a household experiences an economic shock. The relationship was strongest for the bottom third of the

income distribution for most hardship measures. However, this study also demonstrates that homeownership is generally not associated with lower levels of hardship following economic shocks. Together, these findings suggest that while the government aims to minimize the experience of hardship through public means-tested programs like SNAP and TANF, it may also be able to limit material hardship by incentivizing the accumulation of liquid assets, particularly for lower income households.

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