

# The Potential for Savings Accounts to Protect Young-Adult Households from Unsecured Debt in Periods of Macroeconomic Stability and Decline

**TERRI FRIEDLINE**

*University of Kansas*

**ALLISON FREEMAN**

*University of North Carolina at Chapel Hill*

**ABSTRACT** The effects of different types of debt can vary widely: some debt is considered productive by advancing financial health, while other debt can be unproductive, pushing financial health out of reach. A savings account may be associated with young-adult households' reduced reliance on unproductive debt and their increased access to productive debt that can facilitate wealth building. This article tests the association between a savings account and debt in the lives of American young adults during periods of macroeconomic stability and decline. Owning a savings account in 1996 was associated with a 14 percent decrease (\$844) in young-adult households' accumulated unsecured debt, while closing an account in 2008 was associated with a 12 percent increase (\$1,320) in this type of debt. Thus, a savings account may help young adults invest in their debt by entering better, healthier credit markets and protecting them from riskier ones, especially during bad economic times.

## **INTRODUCTION**

Following the Great Recession of 2007–9, public discussion has increasingly focused on the financial well-being of young-adult households and, in particular, on the potential effect of indebtedness on their financial health and life transitions (Mazumder 2012; Pew Charitable Trusts 2013). The average overall debt—including mortgage, vehicle, credit card, and student loan debt—of households headed by those in their mid-20s was approximately \$60,000 in 2010 (Hodson and Dwyer 2014), and the current generation of young adults may be delaying marriage, parenthood, and homeownership in part due to their accumulated debt (Hodson and Dwyer 2014; Houle and *Social Service Review* (March 2016). © 2016 by The University of Chicago. All rights reserved. 0037-7961/2016/9001-0003\$10.00

Berger 2015). Beyond the relationship that debt has with young adults' immediate life transitions, mounting debt can push financial health out of reach for young adults and limit their chances for economic mobility over the life course.

#### PRODUCTIVE AND UNPRODUCTIVE DEBT

Not all debt is a drain on the balance sheet, and, for this reason, some have called debt a “double-edged sword” (Hodson and Dwyer 2014). In some cases, debt can be used productively to promote financial health through building one's credit and improving one's financial standing (Dwyer, McCloud, and Hodson 2011). Mortgage debt undertaken on a home that might generate equity is one example of this (Houle and Berger 2015). Mortgage debt is considered secured or collateralized because it is connected to a tangible asset, a home. If a borrower falls behind on his or her mortgage payments, a lender can repossess the home in order to settle the debt. However, a borrower who makes regular mortgage payments has the benefit of improving his or her credit score and of investing in a type of debt that may eventually increase wealth via home equity. While secured debt is not always associated with improved financial health—as was the case during the Great Recession when equity on some home mortgages was negative and many households found themselves overleveraged (Ferreira, Gyourko, and Tracy 2010)—its collateralized nature allows borrowers to leverage existing assets and to bend credit markets to their advantage (Campbell and Hercowitz 2005). In other words, the use of secured debt could also be considered a type of investment.

In other cases, however, debt can act as a drain on resources rather than as an investment in future gain. For instance, paying down high interest on credit through long repayment plans is an example of unproductive debt (Caskey 2001, 2005; Houle 2014). Credit card and payday loan debt are both considered unsecured because existing assets have not been leveraged as collateral for payment of the debt (Chatterjee et al. 2007). A borrower who falls behind on his or her credit card payments, for example, pays high interest on the outstanding debt. If the debt remains unpaid, the credit card company could file a lawsuit against the borrower or report the borrower to a credit reporting agency in order to settle the debt. Regular payments may still improve the borrower's credit score, but these payments are not an investment in an income-generating asset in the same way as payments

toward secured debt. While there may be times when unsecured debt from credit cards or payday lenders helps young-adult households meet short-term goals on their path to financial health (Morse 2011; Fitzpatrick and Coleman-Jensen 2014), generally speaking, unsecured debt costs its borrowers more and places them at greater financial risk than does secured debt.

Unfortunately, unsecured debt is more widely available to lower-income households than secured debt (Bolton and Rosenthal 2005). Households often do not have to put up collateral in order to use this type of debt, making it more accessible for lower-income households, who, by definition, have fewer financial resources to leverage (Sullivan 2008), and lenders of unsecured tend to be located in closer proximities to lower-income households (Bhutta 2014; Dunham and Foster 2015). This demonstrates a potential bifurcation within the borrowing system that may steer higher-income, more advantaged households toward secured, productive debt and lower-income, less advantaged households toward unsecured, unproductive debt (Brown and Taylor 2008; Sullivan 2008; Houle 2014). The different types of debt and their potentially productive and unproductive effects are what make debt an important component of young Americans' balance sheets and worthy of exploration.

#### THE ASSOCIATION BETWEEN A SAVINGS ACCOUNT AND DEBT

Of course reliance on and use of debt is intricately tied to a household's assets. Young adults who hold liquid assets and have positive net worth may have the financial resources to weather unexpected changes in income or expenses and to further invest in their futures (Rank and Hirschl 2010; Bell and Blanchflower 2011). Thus, finding strategies that facilitate asset acquisition and accumulation may help steer young adults toward healthier balance sheets and may increase their chances for economic mobility.

Research suggests that ownership or acquisition of a savings account may be associated with a decrease in reliance on unproductive debt among young adults (Sherraden 1991; Grinstein-Weiss, Oliphant et al. 2015). For example, Terri Friedline, Paul Johnson, and Robert Hughes (2014) find that the young adults who owned or acquired savings accounts had more diverse asset portfolios, exemplified by their ownership of checking, stock, and retirement accounts. While these researchers found that the acquisition of a savings account contributed \$50 to young adults' accumulated liquid

assets, they also discovered that the contribution exceeded \$5,000 when a savings account was combined with a diverse asset portfolio (Friedline et al. 2014). These researchers hypothesize that a savings account is associated with asset diversification and accumulation, potentially serving as a gateway to financial health.

Just as a savings account may be associated with building the assets of young Americans, a savings account may also be associated with debt. Specifically, a savings account may be associated with young-adult households' access to and accumulation of secured, productive debt that may be used to achieve financial health and upward economic mobility. It may also be associated with protection against accessing and accumulating unsecured, unproductive debt that may damage their financial health.

In this article, we assess whether having a savings account is associated with the increased use of productive debt and reduced reliance on unproductive debt among young-adult Americans, a financially vulnerable population. To probe fully the association between a savings account and debt in the lives of young adults, we examine these relationships during two very different economic times: 1996, a year amid a period of macroeconomic stability and credit market expansion, and 2008, a year of macroeconomic decline and credit market retraction. We hypothesize that households without savings accounts will be more likely to acquire and accumulate unsecured debt than households that hold savings accounts and that this difference will be more pronounced during difficult economic times. We also suspect that a savings account may relate to the use of secured debt and that this relationship will be more pronounced during difficult economic times. Our findings provide some evidence in support of these hypothesized associations between a savings account and debt, even though our analyses are unable to rule out whether the associations are driven by unobserved factors or the comparison of young-adult households with and without a savings account.

## **BACKGROUND**

### **LENDING AND BORROWING DURING MACROECONOMIC STABILITY AND DECLINE: THE 1990S AND 2000S**

The latter years of the 1990s are well known for being a period of macroeconomic stability and growth. Low inflation and unemployment rates are typically attributed to this period's strong economy. The inflation rate

remained below 3 percent for the majority of the decade, and the 8 percent unemployment rate that was recorded at the beginning of the 1990s dropped by half by the decade's end (Frankel and Orszag 2002; Bureau of Labor Statistics 2015). An unemployment rate of 4 percent can be interpreted as an unemployment rate of zero in a capitalist economy (Board of Governors of the Federal Reserve System 2015). The economy (measured by growth in the real gross domestic product) grew by 4 percent each year during the nineties, and growth from productivity nearly doubled, averaging almost 3 percent by the end of the decade (Weller 2002).

Some of this macroeconomic growth trickled down to households.<sup>1</sup> Workers' hourly wages experienced moderate increases in the latter half of the 1990s despite having been relatively stagnant since the 1970s (Mishel et al. 2012), although households' personal saving rates were at all-time lows and neared zero percent (Guidolin and La Jeunesse 2007). The homeownership rate also increased from approximately 63 percent to 67 percent, and the total value of home mortgages increased from \$2 billion to \$4 billion between 1990 and 2000 (Dynan and Kohn 2007; Aughinbaugh 2013; Joint Center for Housing Studies 2015).

Banking legislation in the 1990s also changed the ways in which banking institutions were regulated and households accessed and used debt (FDIC 1997). A banking crisis—spurred in part by regional recessions, excessive lending risks, and a high number of bank closures—coincided with the start of the 1990s (FDIC 1997). Since it was believed that deregulation could lessen or reverse the crisis, legislation was enacted during the middle and latter parts of the 1990s that relaxed restrictions on banking institutions. In 1994, the Riegle-Neal Interstate Banking and Branching Efficiency Act permitted banks to offer services across state lines (FDIC 1997). The Gramm-Leach-Bliley Act of 1999 was passed to replace the Glass-Steagall Act of 1932,

1. While the United States as a whole experienced macroeconomic growth in the 1990s, as evidenced in part by expanded productivity (Jorgenson et al. 2008), this growth did not necessarily translate into healthy balance sheets for all Americans. For instance, in the late 1990s, younger households headed by someone age 42 or less had about 29 percent of the median net worth held by older households, female-headed households had about 9 percent of the median net worth of male-headed households, black households had about 14 percent of the median net worth held by white households, and high school-educated households had about 19 percent of the median net worth held by college-educated households (Friedline, Nam, and Loke 2014). Likewise, beginning in 2007, the United States experienced one of the most widespread and deepest economic recessions since the Great Depression.

which had been responsible for limiting banks' size by separating commercial and investment banking. The Gramm-Leach-Bliley Act allowed for the combination of commercial and investment banking and contributed in part to the rise of large and complex banking institutions (Hanc 2004). In other words, a series of legislative changes allowed banks to grow in size, serve larger geographic regions, and take on additional risks. At this same time, households' total debt-to-income ratio increased by 3–4 percentage points during the 1990s, and their amount of credit card debt increased by 53 percent (Draut and Silva 2003; Federal Reserve Bank of San Francisco 2009). Mortgage lending quadrupled, and delinquency and foreclosure rates remained low (5 percent and 1 percent, respectively; Aughinbaugh 2013).

In contrast to the macroeconomic growth of the 1990s, a substantial macroeconomic recession has characterized the latter years of the 2000s. Known as the Great Recession, it lasted from approximately 2007 to 2009 (Mishel et al. 2012). Economic growth slowed from an average of 4 percent in the 1990s to an average of 2 percent in the 2000s, with some quarters experiencing negative growth after 2007 (Hodge, Pomerleau, and Cole 2014). A continued low inflation rate that hovered around 3 percent was not enough to help the economic downturn, and the unemployment rate jumped from 4 percent to 10 percent between 2000 and 2010 (Bureau of Labor Statistics 2015). Workers' wages remained unchanged during the first half of the 2000s, yet their wages declined and they brought home less money in their paychecks in the second half of the 2000s (Mishel et al. 2012). Households' debt-to-income ratio continued to rise through 2007 until it fell off sharply in 2008 as credit markets retracted in response to the recession (Federal Reserve Bank of St. Louis 2015). Households' personal saving rates rebounded slightly, climbing from near zero percent at the beginning of the decade to a high of 8 percent in 2010 (Federal Reserve Bank of St. Louis 2015).

A deregulated banking industry (an artifact of 1990s legislation) that took on unadvisable risks by widely selling risky mortgages is largely blamed for the Great Recession (Mian and Sufi 2014). Many banking institutions made gambles in home mortgage loans and did not seek federal backing in their lending practices (Mian and Sufi 2014). Even though mortgage debt is secured and considered potentially more productive for promoting households' financial health, banking institutions did not require households to make down payments or to demonstrate their credit or employment histories prior to qualifying for mortgages over the course of the 1990s. Many mortgages also had variable interest rates, meaning that the initial interest

on the loan was low and increased over time (Mian and Sufi 2014). Thus, while the debt was secured, it was also risky. The total value of home mortgages more than doubled between 2000 and 2006, increasing from \$4 billion to \$9 billion (Dynam and Kohn 2007). Unfortunately, housing prices stalled, and many households discovered that their mortgages were worth more than the values of their homes (Mishel et al. 2012; Baker 2014). Banking institutions responded by contracting and making mortgage borrowing more difficult. As a result, the homeownership rate dropped from its peak of 69 percent in 2004 to 66 percent in 2010, and delinquencies and foreclosures rose (by 9 percent and 5 percent, respectively; Aughinbaugh 2013; Joint Center for Housing Studies 2015). Given the limited availability of home mortgages, it is unsurprising that the percentage of households holding debt declined after peaking in 2008. At the same time, however, households headed by young adults actually accumulated more unsecured debt in the late 2000s than in the preceding 2 decades (Vornovytssky, Gottschalck, and Smith 2011). The Great Recession completely shifted the financial footing of all households, especially those headed by young adults, and it undoubtedly altered the ways in which they used debt.

Some social scientists suggest that the Great Recession would not have been as wide or as deep if borrowers had been more financially educated about different types of mortgages or risky debt (Lusardi 2011; Lusardi, Schneider, and Tufano 2011; Klapper, Lusardi, and Panos 2012). Such suggestions have renewed conversations about the importance of teaching financial education and improving financial knowledge, particularly among young Americans. For instance, the President's Advisory Council on Financial Capability for Young Americans (2015) asserts a basic right to financial education and recommends mandating the teaching of financial education in public schools. In other words, just like reading and math were deemed critical skills taught in public schools at the turn of the twentieth century, the President's Advisory Council recognizes that being able to make healthy financial decisions and manage money are critical skills for the twenty-first century. But while financial education may help a young adult to create a budget or choose between credit card offers, for example, it cannot supplement a young adult's wages after he or she loses his or her job in a recession. Therefore, understanding the macroeconomic contexts of the 1990s and 2000s is critical to interpreting households' borrowing during these same decades. This is not meant to imply that financial education is unimportant, but to recognize that borrowers also need opportunities within the broader

macroeconomic context that support financial health. That is, financial education might be more useful in a stable or expanding economy with high productivity and growth, low unemployment, and a banking industry with appropriately managed risks than in an economy fraught with volatility.

#### YOUNG ADULTS' INDEBTEDNESS AND THE RELATIONSHIP BETWEEN SAVINGS AND DEBT

Access to a savings account is one opportunity that may support young adults' financial health. As we consider the association between holding a savings account and young adults' use of debt, we are really looking at two interrelated things: young adults' reliance on debt in general and the relationship between a savings account and debt use among households more generally.

An overview of debt trends among young adults reveals that most recent cohorts of young adults have relied on debt (Chiteji 2007; Hodson and Dwyer 2014; Houle 2014). From early baby boomers, who entered adulthood in the mid-1970s, to Generation Y, who entered adulthood in the mid-2000s, at least 75 percent of young adults have held some type of debt (Houle 2014). Interestingly, debt has also captured an increasing share of young-adult households' balance sheets over time. For example, the reported debt burden—the ratio of debt relative to assets—in young-adult households increased from about 2 percent to 23 percent between early baby boomers and Generation Y, and the percentage reporting negative net worth almost doubled (Houle 2014). Young adults' debt use appears to be increasing while their assets and net worth appear to be diminishing. And, unfortunately, the rise in debt usage has come at the expense of productive debt: the share of collateralized, productive debt has decreased over time relative to uncollateralized, unproductive debt (Houle 2014).

What does research reveal about the debt use of young adults? Minna Autio and colleagues (2009) examine the use of consumer credit by young adults, discovering that young adults in all income brackets and employment positions use consumer credit. However, they find direct links between certain life transitions (young single parent), financial positions (lower-income), employment situations (marginal), and the likelihood of taking out instant loans and consumer credit. Narrowing in on just credit card use by the young, Jill Norvilitis and colleagues (2006) find that a lack of financial knowledge, age, number of credit cards, the ability to delay gratification, and attitudes toward credit card use are all related to credit card indebtedness.

In addition to research exploring life transitions in credit use, a number of authors examine how financial education might affect the debt use of young adults. For example, Alexandra Brown and colleagues (2014) find state-mandated financial education in schools to be associated with slightly better credit scores and lower delinquency rates for young people who attended public school after the mandates were implemented. Moreover, a different study assessing the relationship of young adults' financial training on their debt outcomes in early adulthood finds a positive relationship between financial education and young adults' likelihood of accessing their credit reports (Brown et al. 2013). Alexandra Brown and colleagues (2013) suggest that accessing a credit card evidences both the ability and desire to manage one's financial life.

We turn now to the link between savings and the use of different types of debt, given that our study presumes a link between savings and debt use. That is, having a savings account may relate to a decreased likelihood that one will acquire unsecured, unproductive debt and an increased likelihood that one will acquire secured, productive debt. The importance of savings in keeping financially vulnerable households out of detrimental credit markets (as well as in promoting their financial health overall) is documented by a number of researchers. For example, Stephen Brobeck (2008) examines the association between emergency savings and the financial health of low- and moderate-income households. His research reveals that low- and moderate-income households with less than \$500 in emergency savings were more than twice as likely as respondents with higher amounts of savings (\$500 or more) to report financial difficulties such as making regular bill payments and using high-cost payday loans. Annamaria Lusardi, Daniel Schneider, and Peter Tufano (2011) examine households' capacity to come up with \$2,000 in 30 days for an unexpected expense and discover that roughly 25 percent of Americans would not be able to come up with these funds. These authors also explore the means people used to deal with unexpected expenses, finding that savings appear to be most important, followed by reliance on family and friends and formal and alternative credit markets. Finally, Signe-Mary McKernan, Caroline Ratcliffe, and Katie Vinopal (2009) use 1996 and 2001 data from the Survey of Income and Program Participation (SIPP) to assess the potential for assets to promote households' financial health. In their study, households that experienced a job loss or lapse in work were significantly more likely to suffer financially, and households with little accumulated savings and assets experienced greater levels of

hardship. Overall, the literature suggests that those with savings may weather financial shocks more smoothly than those without, and it provides some evidence that possession of savings helps keep one out of high-cost, unproductive credit markets.

Our analysis is not just focused on the association between savings and households' reduced reliance on unsecured, unproductive debt but also on the possibility that possession of a savings account—a specific financial product—might be associated with increased access to secured, productive debt. Research shows that holding a savings account is associated with owning a diversity of financial products and accumulating savings (Friedline and Elliott 2013; Friedline and Song 2013; Friedline et al. 2014; Friedline and Rauktis 2014). Researchers find that owning and acquiring a savings account between the ages of 18 and 40 almost always coincides with or precedes the acquisition of financial products, including checking, stock, and retirement accounts (Friedline et al. 2014). Adolescents with a savings account at ages 15–19 accumulated medians of \$1,000 in savings and \$4,600 in total assets 5 years later, more than triple the savings and assets accumulated by their counterparts without a savings account (Friedline and Song 2013). In a study evaluating the effects of a policy within the United Kingdom that changed electronic transfer payments from optional to required, savings account ownership increased by 9–12 percentage points, and the estimated effect of account ownership was a 13 percentage point increase in having at least \$109 saved (Fitzpatrick 2015). The amount of financial assets held across bank, bond, stock, and investment accounts also increased by 137 percent as a result of this policy change requiring savings account ownership.

#### THE FINANCIAL HIERARCHY OF A SAVINGS ACCOUNT AND DEBT

A savings account, as one of the first financial products acquired, may be associated with developing and maintaining a balance sheet that maximizes the accumulation of secured debt and minimizes the accumulation of unsecured debt (Friedline et al. 2014; Boshara, Emmons, and Noeth 2015). There is good rationale for why a healthy balance sheet may begin with a savings account. Jing J. Xiao and Geraldine Anderson (1997) draw on Abraham Maslow's (1948, 1954) human needs theory to show how the acquisition of financial products may ascend a hierarchy based on the needs the products are designed to meet. Human needs are assumed to be hierarchical, with the achievement of higher-level needs conditional on the achievement of

lower-level ones (Maslow 1948, 1954). These assumptions have been applied to the acquisition and use of financial products (Xiao and Olson 1993; Xiao and Noring 1994; Xiao and Anderson 1997). Here, lower-level needs are referred to as “survival” and higher-level needs are referred to as “growth” (Xiao and Anderson 1997), labels that also provide some indication of financial health. From this perspective, it makes sense that a savings account is one of the first financial products acquired because it is designed for the achievement of daily, lower-level needs.

While the financial hierarchy is not meant to explain why some young adults come to have savings accounts and others do not, it does help to explain how a savings account, once acquired, may relate to secured and unsecured debt. The use of unsecured, unproductive debt from carryover credit card balances or alternative credit markets may be similar in some ways to meeting daily lower-level needs rather than an investment in future gain. Productive secured debt, such as a home mortgage or a small business loan, is designed for long-term investments. Young adults may acquire savings accounts that facilitate their achievement of daily lower-level needs such as buying groceries or paying utility bills and that protect them from relying on unsecured, unproductive debt. At the same time, based on a hierarchically arranged financial portfolio, the ownership and acquisition of savings accounts may facilitate their transition to achieving long-term higher-level needs and making investments in productive secured debt.

## **METHOD**

This article explores what predicts young-adult households’ debt-holding and tests whether ownership and acquisition of a savings account is associated with increased access to productive debt and reduced reliance on unproductive debt.<sup>2</sup> Specifically, we examine whether young-adult households’ ownership or acquisition of a savings account relates to the protection against the acquisition and accumulation of unsecured debt and to the acquisition and accumulation of secured debt. We do this using data from 1996 and 2008 to better understand the different relationships a savings

2. It should be noted for clarity that, based on the data that were available to us, we measure savings account ownership at the individual level (savings accounts owned by young-adult heads of households) and debt acquisition and accumulation at the household level (households headed by young adults).

account may have with debt during periods of macroeconomic stability and decline.

#### DATA

In order to analyze household debt among young-adult households over time, we needed a large sample that provided information at multiple and frequent time points. The Panel Study of Income Dynamics (PSID) and the Survey of Consumer Finances (SCF) are often used to explore questions about wealth, including assets and debts (Curtin, Juster, and Morgan 1989; Wolff 1999; Czajka, Jacobson, and Cody 2003). However, these surveys have small sample sizes and only measure data every other year at most (potentially missing sensitive changes that occur monthly or quarterly), and only one of them is a longitudinal panel study. We therefore use data from the 1996 and 2008 panels of the Survey of Income and Program Participation (SIPP), which were collected on a monthly basis over a period of 4 years and were made publicly available by the Census Bureau. We rely on data from 1996 and 2008 because the former were gathered during a period of economic prosperity (i.e., a time of wealth gains for many households and for the economy as a whole) and the latter were gathered during a period of economic decline (i.e., a time of wealth losses for many households and for the economy as a whole). Because of this, the 1996 and 2008 data provide insight into the balance sheets of households headed by young adults during periods of macroeconomic stability and instability when balance sheets might have appeared the most and least optimistic (Jorgenson, Ho, and Stiroh 2008).

Between December 1995 and February 2000, the 1996 SIPP drew a random sample of households grouped within geographic regions based on population counts from the most recent census (US Census Bureau 2012) and oversampled those with lower incomes ( $N = 380,609$  individual respondents from 40,188 eligible households;  $n = 1,634,357$  number of rows). The 2008 SIPP used similar procedures to draw a random sample between September 2008 and December 2013 ( $N = 421,911$  individual respondents from 52,031 eligible households;  $n = 4,221,119$  number of rows). Each household member over age 15 participated in data collection, which occurred once during every 4-month period. During each interview, respondents recalled their previous 4 months' experiences, resulting in 12 observations per year for a 48-month or 68-month period on many variables depending on the panel. This allowed for the construction of monthly and

quarterly histories of young adults' savings account acquisition for up to 48 or 68 months, which was ideal for addressing the research questions. We took information from the fourth month in the reference period, when respondents were interviewed in person and their recall was likely the most accurate. The 1996 and 2008 SIPP also collected annual information in topical modules, including topics such as health, education, child care, and household assets and debts. Annual information on household debt was collected in topical modules during waves 3, 6, 9, and 12 of the 1996 SIPP and during waves 4, 7, and 10 of the 2008 SIPP.

For the current research, we included in our sample heads of households between the ages of 18 and 40 who provided 2 years' worth of reference month and topical module information.<sup>3</sup> This means that a young-adult head of household who entered the sample at age 16 was included when he or she provided at least 2 years' worth of information, making the respondent age 18 at some time during the sampling frame. Likewise, 2 years' worth of information was retained for a young-adult head of household who entered the sample at age 40, making him or her age 42 at some time during the sampling frame. Restricting the sample in this way minimized the inclusion of young-adult heads of households who cycled in or out of the 1996 or 2008 SIPP within a shorter time and ensured more equal sample sizes across age groups. The age range of 18–40 was chosen for consistency with previous research and because households whose heads are age 40 and under accumulate assets and debts below national medians (Bricker et al. 2014; Boshara et al. 2015). Moreover, restricting by head of household status means that the young adults in our samples were not living with their parents or families of origin, which minimized confounding young adults' household debt with that of their parents' households. There were 43,455

3. We restricted our 1996 and 2008 SIPP samples to a 2-year time frame in order to minimize the influences of attrition on our analysis, even though each panel was conducted over a 4-year time frame. A true longitudinal design, for example, would have selected all young-adult heads of households who began the 2008 SIPP at wave 1 in 2008, retrieved the independent and control variables from wave 1, and retrieved household debt 2 years later from wave 7 in 2010. Instead, our design employed a cross-sectional logic by selecting young-adult heads of households based on their age and having provided at least 2 years' worth of data. This meant that the 2 years' worth of data provided by an individual respondent could have come at any time during the 4-year panel between 2008 and 2012. However, for each individual respondent, we temporally ordered the independent and control variables so that they were retrieved from waves that preceded the waves and/or topical modules from which information on their household debt was retrieved.

young-adult heads of households from the 1996 SIPP and 71,428 from the 2008 SIPP, making a sample of 114,883. All dollar values from the 1996 panel were inflated to 2008 US dollars using the Bureau of Labor Statistics' Consumer Price Index inflation calculator. This article reports all dollar values in 2008 US dollars.

#### SAMPLE

The sample characteristics are reported in table 1 for households whose young-adult heads did not have any debt (debt = \$0) and for households whose young-adult heads did have debt (debt > \$0). Young-adult heads of households had an average age of approximately 30. Small percentages of young adults were new heads of households (between 4 percent and 7 percent), meaning that they had become heads of households within the previous 2 years. Between one-third and one-half of young-adult heads (between 33 percent and 50 percent) had at least some college education, while smaller percentages had earned a college degree or more (between 7 percent and 16 percent). Median household quarterly earned income ranged between \$1,947 and \$4,393 (in 2008 US\$), which translated to between \$7,788 and \$17,572 annually. Households with debt holdings also reported higher incomes.

The percentages of savings account ownership and acquisition are mostly consistent between 1996 and 2008, while the amounts of median household debt nearly doubled between these years (see table 2). In 1996, 46 percent of young-adult heads owned a savings account, and 4 percent acquired one during the course of the panel. In 2008, these percentages were, respectively, 40 percent and 4 percent. Among households that accumulated debt, the median total debt in 1996 was valued at \$46,306 (in 2008 US\$) compared to \$82,001 median total debt in 2008. Median secured debt increased by \$31,500—from \$68,500 in 1996 to \$100,000 in 2008. The median amount of unsecured debt was valued at \$5,686 in 1996 and \$10,000 in 2008, an amount that also nearly doubled.

Table 3 reports the percentages of households headed by young adults that held debt and the median amounts of debt based on their savings account ownership status. A majority of households appeared to accumulate all types of debt in 1996 and 2008, regardless of the status of savings account ownership: for most households, the median amounts of debt more than doubled. Among households whose young-adult heads owned a savings

account, roughly equal percentages accumulated secured debt in 1996 and 2008—78 percent and 76 percent, respectively. Among these households, median secured debt was valued at \$93,434 in 1996 and \$127,000 in 2008—an increase of \$33,566, or 36 percent. Fewer household heads with a savings account accumulated unsecured debt in 2008 than in 1996: in 1996, 74 percent of household heads with savings accounts held unsecured debt, while in 2008, 68 percent held unsecured debt. These households' median unsecured debt was valued at \$6,028 in 1996 and \$11,000 in 2008—an increase of \$4,972 or 82 percent of the 1996 median.

#### MEASURES

Our analysis examines young-adult households' total, secured, and unsecured debt as outcome variables. Young-adult heads of households' ownership of a savings account was included as the independent variable, with several sociodemographic variables included as controls.

##### *Total Household Debt*

Young-adult heads of households were asked a series of questions about their household debts, including debt from mortgages, businesses, real estate, vehicles, credit cards, unsecured loans, and outstanding bills. These amounts were available from topical modules in waves 3, 6, 9, and 12 of the 1996 SIPP and 4, 7, and 10 of the 2008 SIPP and were summed together by the SIPP in order to create measures of total household debt (THHDEBT).

##### *Household Secured Debt*

Young-adult heads of households were asked whether or not their households held different types of secured debt (mortgages, businesses, real estate, vehicles) and the amounts of those debts. The 1996 and 2008 SIPP summed or recoded these amounts into continuous measures of households' accumulated secured debt (THHSCDBT).

##### *Household Unsecured Debt*

Young-adult heads of households were asked whether or not their households held different types of unsecured debt (credit cards, unsecured loans, outstanding bills) and the amounts of those debts. The 1996 and 2008 SIPP summed or recoded these amounts into continuous measures of households' accumulated unsecured debt (RHHUSCBT).

**TABLE 1.** Sample Characteristics of Young-Adult Heads of Households, Ages 18–40, from the 1996 and 2008 SIPP (N = 114,883)

Covariates	Debt		Household Secured Debt		Household Unsecured Debt	
	Debt = Total Household \$ (n = 22,125)	Debt > \$0 (n = 92,758)	Debt = \$0 (n = 40,142)	Debt > \$0 (n = 74,741)	Debt = \$0 (n = 44,337)	Debt > \$0 (n = 70,546)
Age	29,730 (6,541)	30.7 (6,466)	29,696 (6,405)	30,995 (6,494)	30,351 (6,639)	30,661 (6,396)
Sex (%):						
Male	46	52	47	53	49	52
Female	54	48	52	47	51	48
Race (%):						
White	69	82	73	84	76	83
Nonwhite	31	14	27	16	24	17
Marital status (%):						
Married	27	51	31	54	38	51
Not married	73	49	69	46	62	49
Family household type (%):						
Family	74	82	72	85	79	82
Nonfamily	26	18	28	15	21	18
New head of household (%):						
Yes	7	5	7	4	6	5
No	93	95	93	96	94	95
Education level (%):						
College degree or more	7	16	10	16	11	16
Some college	33	49	39	49	39	50
High school degree	37	27	33	27	33	27
Some high school or less	25	8	18	8	17	7

College enrollment status (%):													
Enrolled in college	17	19	19	19	18	13	14						
Not enrolled in college	83	81	81	81	82	87	86						
Employment status (%):													
Employed	61	79	79	67	81	69	80						
Not employed	39	21	21	33	19	31	20						
Household quarterly earned income (2008 US\$)	1,947 (3,673)	4,393 (4,954)	4,393 (4,954)	2,278 (3,675)	4,845 (5,105)	3,000 (4,996)	4,376 (4,718)						
Home ownership (%):													
Owned a home	19	63	63	19	74	46	60						
Purchased a home	1	1	1	1	1	<1	1						
Sold a home	1	1	1	2	<1	1	1						
Ever owned a home	79	35	35	78	25	52	38						
Geographic region (%):													
Metropolitan	79	80	80	80	80	79	81						
Rural or suburban	21	20	20	20	20	21	19						
North East	18	17	17	19	16	17	17						
West	22	22	22	24	21	21	22						
North Central	22	26	26	23	27	25	26						
South	38	35	35	34	36	38	34						

Source.—Data are from the 1996 and 2008 Survey of Income and Program Participation (SIPP). The sample characteristics reported from this table are drawn from reference month data and topical module data ( $N = 43,455$  individuals from the 1996 SIPP and  $N = 71,428$  from the 2008 SIPP).

Note.—Sample characteristics are provided by whether or not households headed by young adults held debt. Debt = \$0 indicates that households did not report owning debt, whereas debt > \$0 indicates that households reported owning debt greater than \$0. Means are reported for age, and percentages are reported for categorical variables. Household quarterly earned income data is reported in median values. Household quarterly earned income is reported after inflating dollar values from 1996 to match dollar values from 2008 using the Bureau of Labor Statistics' Consumer Price Index inflation calculator. Young adults in the topical module data were limited to reference persons or heads of households because annual debt data were only available at the household level. This avoided, for example, having a young adult in the data who was age 18 and still living with his or her family of origin. In this case, the young adult met sampling criteria based on his or her age; however, the debt that would have been captured would have more accurately represented the parents' households' debt rather than the young adult's own household debt. Whether or not young adults became a new reference person or head of household within the sampling frame was measured as an indicator of their tenure as head of household. Standard deviations are presented in parentheses.

**TABLE 2.** Percentages of Savings Accounts and Debt Holdings and Medians of Accumulated Debt for Households Headed by Young Adults, Ages 18–40, between 1996 and 2008, in 2008 US Dollars

	1996 ( <i>n</i> = 43,445)	2008 ( <i>n</i> = 71,428)	1996 and 2008 ( <i>n</i> = 114,883)
Percent with savings account:			
Savings account ownership	46	40	42
Savings account acquisition	4	4	5
Savings account closure	5	5	5
No savings account ownership	45	51	49
Percent with household debt:			
Total household debt	82	80	81
Secured household debt	65	65	65
Unsecured household debt	65	59	61
<b>Median Accumulated Value of Household Debt (for Households with Debt &gt; \$0)</b>			
Total household debt	46,306 (91,731)	82,001 (136,883)	67,404 (123,367)
Secured household debt	68,500 (90,756)	100,000 (\$130,721)	88,000 (118,968)
Unsecured household debt	5,686 (16,769)	10,000 (31,344)	8,000 (26,983)

Source.—Data are from the 1996 and 2008 Survey of Income and Program Participation (SIPP). The characteristics reported from this table were drawn from the topical module samples (*N* = 43,455 individuals from the 1996 SIPP and *N* = 71,428 from the 2008 SIPP).

Note.—Percentages are reported for categorical variables, and medians and standard deviations are reported for continuous variables. Standard deviations are presented in parentheses. Percentages for savings account are presented for young adults who ever reported owning these account types during the course of the panel using lagged quarterly-level information. Accumulated values of household debt are presented for young adults based on annual-level information. The accumulated median values are reported after inflating dollar values from 1996 to match dollar values from 2008 using the Bureau of Labor Statistics' Consumer Price Index inflation calculator and winsorizing the debt values at 99%. Debt > \$0 indicates the median values of debt excluding households that had debt of \$0 and including only households who reported owning debt > \$0. In other words, the medians are calculated only for households that reported having debt.

All debt variables were winsorized at the 99th percentile to censor extreme values and transformed using the natural log transformation (Cox 2006). The inverse hyperbolic sine (IHS) transformation was also considered for dealing with skewness in the debt variables' distributions (Pence 2006; Friedline, Masa, and Chowa 2015). However, the natural log transformation was ultimately chosen because it has been found to perform just as well as the IHS transformation when distributions do not cross zero and its interpretation is less complicated (Pence 2006). Debt variables' \$0 values—for the purposes of this article indicating that households did not use debt—were adjusted to \$1 before the log transformation.<sup>4</sup>

4. This is because the natural log transformation cannot be applied to zeros; therefore, the amount of debt was adjusted to \$1 in order to calculate the natural log transformation.

**TABLE 3.** Row Percentages and Accumulated Median Values of Total, Secured, and Unsecured Household Debt (> \$0) by Savings Account among Young-Adult Heads of Households, Ages 18–40, between 1996 and 2008, in 2008 US Dollars ( $N = 114,883$ )

	Total Household Debt		Secured Household Debt		Unsecured Household Debt	
	1996	2008	1996	2008	1996	2008
Percent with household debt by savings account:						
Savings account ownership	92	89	78	76	74	68
Savings account acquisition	87	85	67	67	73	66
Savings account closure	87	84	68	67	70	64
No savings account ownership	71	72	52	56	55	51
Median accumulated value of household debt by savings account (\$):						
Savings account ownership	80,031	115,000	93,434	127,000	6,028	11,000
Savings account acquisition	33,428	79,800	45,210	97,000	6,542	10,000
Savings account closure	35,072	79,500	54,800	97,381	5,754	11,000
No savings account ownership	23,290	53,000	30,140	78,000	5,480	9,000

Source.—Data are from the 1996 and 2008 Survey of Income and Program Participation (SIPP). The row percentages and median debt values reported in this table were drawn from the topical module samples ( $N = 43,455$  individuals from the 1996 SIPP and  $N = 71,428$  from the 2008 SIPP).

Note.—The accumulated median values are reported for households with debt > \$0 after inflating dollar values from 1996 to match dollar values from 2008 using the Bureau of Labor Statistics' Consumer Price Index inflation calculator and winsorizing the debt values at 99%.

### *Savings Account*

In order to model the ownership and acquisition of a savings account during the course of the panel, young-adult heads of households' account ownership was tracked to determine whether or not, and when, they acquired a savings account (EAST2B). This tracking used quarterly histories and occurred retrospectively over 1 previous calendar year, prior to the measurement of household debt. In this way, a savings account and any change in its ownership was temporally ordered to precede the measurement of household debt. For instance, a young adult who originally said they did not own a savings account during one quarter and then said they did during the next quarter was considered to have acquired a savings account. A young adult who reported having a savings account during two consecutive quarters was considered to have owned an account. Thus, this independent variable measured young adults' "no-to-yes" change in account. A similar process was undertaken for those who consistently reported owning a savings account, closing their account, or never acquiring a savings account (savings account ownership "yes-yes" = 3; savings account acquisition "no-to-yes" = 2; savings account closure "yes-to-no" = 1; no savings account ownership "no-no" = 0).

*Control Variables*

Twelve variables were included as controls in the analyses, including a dummy panel year (1996; 2008), age, gender (female, male), race (white, nonwhite), marital status (married, not married), family household type (family, non-family), new head of household (new head of household, not a new head of household), education level (college degree or more, some college, high school degree, partial high school, primary school), employment status (employed, not employed), quarterly earned income, and geographic region ([metropolitan, rural, or suburban] and [South, North Central, West, Northeast]).

Given that home ownership is likely a driver of and endogenous to young-adult households' debt accumulation, we wanted to measure home ownership in a way that captured whether or not, and when, young-adult households acquired a home. In order to do this, we used quarterly histories to track home ownership retrospectively over 1 previous calendar year. In other words, a young-adult head of household who said he or she did not own a home during one quarter and then said they did during the next quarter was considered to have purchased a home. A young-adult head of household who said he or she owned a home and then did not was considered to have sold the home (owned a home "yes-yes" = 3; purchased a home "no-yes" = 2; sold a home "yes-no" = 1; and never owned a home "no-no" = 0 [reference]). This measure captures dynamic changes in home ownership and their association with young-adult households' debt. Descriptions of all control variables are available in the appendix.

## ANALYSIS

Data were analyzed using John Cragg's double-hurdle models.<sup>5</sup> Cragg's (1971) double-hurdle models were estimated in Stata to examine acquisition and accumulation of total, secured, and unsecured debt (Burke 2009; Stata-Corp 2011). A double-hurdle approach was ideal for analyzing our data because it assumes that a household's debt acquisition is separate from the amount of debt accumulated (Cragg 1971; Yen and Jones 1997; Ricker-Gilbert, Jayne, and Chirwa 2011). This assumption is similar to a two-step James Heckman (1979) selection model. Heckman's model is designed to analyze data in which zeroes were unobserved or missing and to estimate

5. The authors would like to thank Paul Johnson for recommending double-hurdle models for our analyses.

the zeroes as potential observations (Dow and Norton 2003). In other words, Heckman's model treats zero values as stemming from a latent function and differing systematically from observed values. In his original analysis, Heckman (1979) considers that the wages of women working in the labor market—a select group of women and a subset of the population—could not adequately represent the wages of women who did not work in the labor market and whose wages were not observed. He finds that doing so would introduce bias into the estimates and instead proposed separate equations adjusting for selection into the labor market and predicting women's wages.

Cragg's (1971) double-hurdle model is designed to consider zeros as actual true observations (Dow and Norton 2003). This model considers zeroes and nonzeros to represent two separate and potentially uncorrelated components: whether or not households used debt and how much debt they used. Moreover, Cragg's (1971) model relaxes concerns about selection bias in comparison to Heckman's (1979) model because it considers the zeroes to be true observations. This also means that Cragg's (1971) double-hurdle model does not adjust for unobserved differences between young-adult heads of households, in contrast to Heckman's (1979) two-step model. In the case of debt, an observed value of \$0 could represent households' choices or preferences to avoid debt. An observed value of \$0 could also represent households' inability to access debt despite their preferences to do so, such as being blocked from securing a loan due to discrimination, past employment, or credit history. Unfortunately, the data did not allow us to draw definitive conclusions about why households' debt equaled \$0. However, once households acquired debt, that acquisition may not have been related to the amount of debt they accumulated. In other words, the extent to which households were leveraged may have varied even among those that used debt and may have been unrelated to their preference to avoid or their inability to access debt. Therefore, results are reported as the probability of acquiring household debt (hurdle 1; debt > \$0 compared to debt = \$0) and the value of accumulated household debt (hurdle 2; accumulating debt > \$0).

## RESULTS

The presentation of the results is ordered by households' total, secured, and unsecured debt. Within each type of debt, households' probability of

acquiring debt (hurdle 1; debt > \$0 compared to debt = \$0) and the value of accumulated debt (hurdle 2; accumulating debt > \$0) are reported separately. The association between a savings account and debt is also reported as a subsection within each type of debt. It is important to note that the results presented below are for the combined 1996 and 2008 sample of young-adult-headed households (tables 4, 6, and 7); however, we also discuss the analyses that separate out the samples by panel year in order to investigate the associations between a savings account and household debt in stable (1996) and strained (2008) economic times (table 5).

#### TOTAL HOUSEHOLD DEBT

Eighty-one percent of young-adult households accumulated total debt (debt > \$0; see table 2), with some of these households being more likely than others to acquire this debt (see table 4, hurdle 1). The probability of acquiring total household debt was associated with an increase when young-adult heads were white; earned higher levels of education; earned increasingly higher incomes; owned, purchased, or sold a home; and lived in geographic regions outside the northeastern United States. The association with a decreased probability of acquiring household debt occurred when young-adult heads were older, were married, were new heads of households, and lived in a metropolitan region. They were also less likely to acquire debt in 2008 compared to 1996.

Many of the variables associated with the acquisition of total household debt also related to the value of that debt (see table 4, hurdle 2).<sup>6</sup> Households' accumulation of more total debt was associated with young-adult heads who were white; lived in a family-related household; earned higher

6. The changes in household debt throughout the presentation of the results can also be interpreted as percent changes for every unit increase in the control variables and compared using median debt values. For example, the median value of accumulated total household debt > \$0 among young-adult heads averaged between 1996 and 2008 was \$67,404 (table 2). A college degree or more was associated with an 85 percent increase in the value of accumulated total household debt, and \$57,293 is roughly an 85 percent increase in the medial value of \$67,404. Therefore, the accumulated total household debt rose to \$124,697 for young adults who held a college degree or more compared to those who had some high school education or less. Throughout the article and unless otherwise specified, the dollar interpretations for total, secured, and unsecured debt are based on the median values for debt > \$0 in 1996 and 2008 combined and reported in table 2.

**TABLE 4.** Cragg's Double-Hurdle Models Predicting Total Household Debt (Log Transformed) among Young-Adult-Headed Households from the 1996 and 2008 SIPP

	Model 1			
	Hurdle 1		Hurdle 2	
	Probability of Acquiring Total Household Debt (N = 114,883)		Value of Accumulated Total Household Debt (N = 92,758)	
	$\beta$	SE	$\beta$	SE
2008 SIPP	-.219***	.017	.232***	.016
Age	-.010***	.001	-.001	.001
Female	-.006	.011	-.028**	.010
White	.167***	.017	.088***	.019
Married	-.360***	.017	-.344***	.017
Family household	-.029	.019	.077***	.021
New head of household	-.059**	.021	-.076**	.024
College degree or more	.605***	.029	.852***	.030
Some college	.577***	.021	.529***	.027
High school degree	.310***	.019	.270***	.027
Enrolled in college	.112***	.017	.128***	.016
Employed	.263***	.014	.090***	.015
Household quarterly earned income/1,000	.046***	.004	.056***	.002
Owned a home	.925***	.017	1.989***	.017
Purchased a home	1.000***	.049	2.048***	.030
Sold a home	.118***	.031	.163***	.037
Metropolitan region	-.045**	.015	-.195***	.017
West geographic region	.141***	.023	.133***	.023
North Central geographic region	.172***	.023	-.031	.028
South geographic region	.073**	.021	-.118	.021
Savings account (reference: no account ownership):				
Savings account ownership	.322***	.023	.158***	.014
Savings account acquisition	.305***	.044	.094***	.023
Savings account closure	.264***	.043	.116***	.023
R <sup>2</sup>	.172			
Model constant	.227**	.068	8.943***	.073
Sigma constant	1.352***	.009	1.352***	.009

Source.—Data are from the 1996 and 2008 Survey of Income and Program Participation (SIPP), accounting for individual-level clustering.

Note.—There were 22,125 households with young-adult heads that did not accumulate any debt and 92,758 that accumulated debt greater than \$0.  $\beta$  = regression coefficient; SE = robust standard error.

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

levels of education; earned increasingly higher incomes; owned, purchased, or sold a home; and lived in the western United States when compared to their counterparts. They also accumulated significantly more debt in 2008 than in 1996. Being a young-adult household in 2008 (as opposed to 1996) was associated with a 23 percent increase in the value of accumulated total household debt, or an increase of approximately \$15,503 at the median (see

table 2). There were associations with accumulating significantly less debt when households' young-adult heads were female, were married, were a new household head, or lived in a metropolitan region as compared to their counterparts. While there were no differences in the probability of acquiring debt based on gender or family household type, differences emerged when predicting how much debt young-adult households accumulated. Households headed by young-adult females accumulated significantly less debt, and family-related households accumulated significantly more debt. Significantly greater debt accumulation was associated with being in the 2008 panel year than in 1996.

Compared to no savings account ownership, any type of young-adult heads' savings account ownership, acquisition, or closure during the course of the panels was associated with the increased probability of acquiring household debt (see table 4, hurdle 1). This suggests that any interface with a savings account may have been associated with providing these households with access to credit. These relationships remained the same with regard to the value of accumulated total household debt (see table 4, hurdle 2). However, the coefficients for savings account ownership with total debt acquisition and accumulation were slightly larger, suggesting that owning a savings account compared to acquiring or closing one was more strongly associated with these households' total debt. Compared to no account ownership, owning a savings account was associated with a 16 percent increase in the value of accumulated total debt for households headed by employed young adults, or an increase of \$10,785 based on the median value of \$67,404. Acquiring a savings account was associated with a 9 percent increase or an increase of \$6,066 based on the median.

There are some differences regarding the relationship between a savings account and total debt accumulation that emerged from the supplemental analyses undertaken within each panel year (see table 5). The relationship between savings account acquisition and total accumulated debt was not statistically significant in 1996; however, the relationship was significant in 2008 (models 4 and 7, hurdle 2). In other words, account take-up—even if the account had been opened for a short amount of time—was associated with households' debt accumulation in 2008 but not in 1996. In addition, the coefficient for the relationship between savings account ownership and total debt accumulation was slightly larger in 2008, suggesting a stronger relationship with households' debt than in 1996. For instance, owning a savings account was associated with a 10 percent increase in the value of

**TABLE 5.** Cragg's Double-Hurdle Models Predicting Total, Secured, and Unsecured Household Debt (Log Transformed) among Young-Adult-Headed Households, Results for Savings Account by 1996 and 2008 SIPP

	Model 4		Model 5		Model 6	
	Hurdle 1	Hurdle 2	Hurdle 1	Hurdle 2	Hurdle 1	Hurdle 2
	Probability of Acquiring Total Household Debt ( $\beta$ ) (N = 43,455)	Value of Accumulated Total Household Debt ( $\beta$ ) (N = 35,654)	Probability of Acquiring Secured Household Debt ( $\beta$ ) (N = 43,455)	Value of Accumulated Secured Household Debt ( $\beta$ ) (N = 28,444)	Probability of Acquiring Unsecured Household Debt ( $\beta$ ) (N = 43,455)	Value of Accumulated Unsecured Household Debt ( $\beta$ ) (N = 28,243)
<b>1996 SIPP</b>						
Savings account (reference: no account ownership):						
Savings account ownership	.296*** (.023)	.104*** (.019)	.236*** (.021)	.150*** (.018)	.271*** (.018)	-.136*** (.024)
Savings account acquisition	.318*** (.044)	.040 (.037)	.160*** (.037)	.037 (.035)	.295*** (.034)	-.028 (.044)
Savings account closure	.3271*** (.043)	.098** (.033)	.216*** (.036)	.106** (.034)	.240*** (.033)	-.015 (.041)
<b>2008 SIPP</b>						
Savings account (reference: no account ownership):						
Savings account ownership	.324*** (.020)	.183*** (.019)	.251*** (.019)	.171*** (.018)	.251*** (.016)	.017 (.025)
Savings account acquisition	.292*** (.031)	.120*** (.028)	.159*** (.028)	.118*** (.028)	.284*** (.024)	.025 (.038)
Savings account closure	.234*** (.032)	.129*** (.030)	.155*** (.029)	.076* (.029)	.222** (.025)	.123** (.040)

Source.—Data are from the 1996 and 2008 Survey of Income and Program Participation (SIPP), accounting for individual-level clustering. Note.—All control variables were included in the complete models; however, to conserve space, only results for the savings account variable are reported.  $\beta$  = regression coefficient. Robust standard errors are presented in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

accumulated total debt for households headed by young adults in 1996, compared to an 18 percent increase in 2008.

#### SECURED HOUSEHOLD DEBT

Sixty-five percent of young-adult households accumulated secured debt (debt > \$0; see table 2), but some households were more likely than others to acquire this debt (see table 6, hurdle 1). An increased probability of acquiring secured household debt was associated with young-adult heads who were white; earned higher levels of education; earned increasingly higher incomes; owned, purchased, or sold a home; or lived in geographic regions outside the northeastern United States, as compared to their counterparts. A decreased probability of acquiring household debt was associated with young-adult heads who were older, were married, lived in a family-related household, and lived in a metropolitan region. These heads were also less likely to acquire debt in 2008 compared to 1996.

Accumulating significantly more secured debt was associated with young-adult heads who lived in a family-related household; earned higher levels of education; earned increasingly higher incomes; owned, purchased, or sold a home; and lived in the western United States when compared to their counterparts (see table 6, hurdle 2). These heads also appeared to accumulate significantly more debt in 2008 compared to 1996. Households' significantly lower debt accumulation was associated with their young-adult heads who were married, were new heads of household, were enrolled in college, lived in a metropolitan region, and lived in the northern and southern United States as compared to their counterparts. While young-adult heads' panel year (being from 2008 compared to 1996) was associated with their households' decreased probabilities of acquiring secured debt, panel year was associated with significantly greater accumulated secured debt.

All types of savings account ownership, acquisition, or closure during the course of the panels were associated with the increased probability of young adults acquiring secured household debt compared to no account ownership (see table 6, hurdle 1). These relationships were consistent with regard to households' accumulated secured debt (see table 6, hurdle 2). The coefficients for owning a savings account with secured debt acquisition and accumulation were slightly larger than those for either acquiring or closing a savings account. Compared to no account ownership, owning a savings account was associated with a 16 percent increase and opening an account

**TABLE 6.** Cragg's Double-Hurdle Models Predicting Household Secured Debt (Log Transformed) among Young-Adult-Headed Households from the 1996 and 2008 SIPP

	Model 2			
	Hurdle 1		Hurdle 2	
	Probability of Acquiring Household Secured Debt (N = 114,883)		Value of Accumulated Household Secured Debt (n = 74,741)	
	$\beta$	SE	$\beta$	SE
2008 SIPP	-.197***	.016	.156***	.015
Age	-.008***	.001	.001	.001
Female	-.006	.010	-.014	.009
White	.140***	.016	.030	.018
Married	-.320***	.016	-.275***	.016
Family household	-.046*	.018	.080***	.020
New head of household	-.008	.021	-.064**	.024
College degree or more	.332***	.027	.551***	.029
Some college	.376***	.021	.324***	.027
High school degree	.222***	.020	.159***	.026
Enrolled in college	-.020	.015	-.078***	.015
Employed	.258***	.013	.027	.014
Household quarterly earned income/1,000	.052***	.003	.048***	.002
Owned a home	1.348***	.015	2.232***	.016
Purchased a home	1.367***	.039	2.268***	.028
Sold a home	.097**	.030	.279***	.042
Metropolitan region	-.064*	.015	-.364***	.039
West geographic region	.144***	.021	.178***	.022
North Central geographic region	.199***	.022	-.134***	.020
South geographic region	.160***	.020	-.155***	.020
Savings account (reference: no account ownership):				
Savings account ownership	.252***	.014	.163***	.013
Savings account acquisition	.163***	.022	.091***	.022
Savings account closure	.176***	.023	.083***	.022
R <sup>2</sup>	.200			
Model constant	-.564***	.066	9.025***	.105
Sigma constant	1.167***	.011	1.167***	.011

Source.—Data are from the 1996 and 2008 Survey of Income and Program Participation (SIPP), accounting for individual-level clustering.

Note.—There were 40,142 households with young-adult heads that did not accumulate any secured debt and 74,741 that accumulated secured greater than \$0.  $\beta$  = regression coefficient; SE = robust standard error.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

was associated with a 9 percent increase in the values of accumulated secured debt for households headed by young adults, respective increases of \$14,080 and \$7,920 based on the median value of \$88,000 (see table 2).

Supplemental analyses within each panel year revealed some differences (see table 5, models 5 and 8). As with total household debt, the acquisition of

a savings account compared to not owning an account was not associated with secured debt accumulation in 1996 (see model 5, hurdle 2). In other words, opening a savings account—and perhaps owning it for a short time—was not enough to help young-adult households accumulate secured debt in 1996. However, in 2008, savings account acquisition was associated with their secured debt accumulation (see model 8, hurdle 2). In 2008, savings account acquisition was associated with a 12 percent increase in the value of accumulated secured debt for households headed by young adults, or \$15,240 based on the median of \$127,000 (see table 3).

#### UNSECURED HOUSEHOLD DEBT

Sixty-one percent of young-adult households in the combined 1996 and 2008 panels accumulated unsecured debt (debt > \$0; see table 2), and some households were more likely than others to acquire this type of debt (see table 7, hurdle 1). The probability of acquiring unsecured household debt was associated with an increase when young-adult heads were white; earned higher levels of education; earned increasingly higher incomes; and owned, purchased, or sold a home when compared to their counterparts. The probability of acquiring unsecured debt was associated with a significant decrease as young-adult heads were older, were married, lived in family-related households, were new heads of households, and lived in the southern region of the United States. They were also less likely to use unsecured debt in 2008 compared to 1996.

Households' significantly greater unsecured debt accumulation was associated with their young-adult heads who were white, lived in a family-related household, earned higher levels of education, earned increasingly higher incomes, and purchased a home when compared to their counterparts (see table 7, hurdle 2). They also accumulated significantly more unsecured debt in 2008 compared to 1996. Households accumulated significantly less unsecured debt when their young-adult heads were older, were female, were married, were new heads of households, lived in a metropolitan region, and lived in the western and southern regions of the United States as compared to their counterparts. While young-adult heads' panel year (being from 2008 compared to 1996) was associated with their households' decreased probabilities of acquiring unsecured debt, their panel year was associated with significantly greater accumulated unsecured debt.

**TABLE 7.** Cragg's Double-Hurdle Models Predicting Household Unsecured Debt (Log Transformed) among Young-Adult-Headed Households from the 1996 and 2008 SIPP

	Model 3			
	Hurdle 1		Hurdle 2	
	Probability of Acquiring Unsecured Household Debt (N = 114,883)		Value of Accumulated Unsecured Household Debt (n = 40,546)	
	$\beta$	SE	$\beta$	SE
2008 SIPP	-.198***	.013	.477***	.020
Age	-.011***	.001	-.008***	.001
Female	-.005	.009	-.026*	.013
White	.133***	.015	.070**	.024
Married	-.236***	.014	-.139***	.021
Family household	-.047**	.016	.031*	.027
New head of household	-.121***	.019	-.064*	.031
College degree or more	.458***	.024	.861***	.037
Some college	.526***	.018	.526***	.031
High school degree	.317***	.018	.266***	.031
Enrolled in college	.162***	.014	.215***	.020
Employed	.211***	.011	.090***	.019
Household quarterly earned income/1,000	.011***	.002	.033***	.002
Owned a home	.185***	.013	.022	.020
Purchased a home	.234***	.028	.088*	.043
Sold a home	.089**	.028	.008	.045
Metropolitan region	-.002	.013	-.058**	.019
West geographic region	.032	.019	-.091**	.028
North Central geographic region	.020	.019	-.013	.028
South geographic region	-.057**	.018	-.127***	.026
Savings account (reference: no account ownership):				
Savings account ownership	.235***	.012	-.047**	.018
Savings account acquisition	.288***	.020	.002	.029
Savings account closure	.228***	.020	.068*	.030
R <sup>2</sup>	.059			
Model constant	.149*	.058	8.276***	.091
Sigma constant	1.577***	.007	1.577***	.007

Source.—Data from the 1996 and 2008 Survey of Income and Program Participation (SIPP), accounting for individual-level clustering.

Note.—There were 44,337 households with young adult heads that did not accumulate any unsecured debt and 70,546 that accumulated unsecured greater than \$0.  $\beta$  = regression coefficient; SE = robust standard error.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Households' heads who were young adults in 2008 accumulated 48 percent more unsecured debt compared to those heads from 1996, or an associated increase of \$3,840 based on the median value of accumulated unsecured debt of \$8,000 as reported in table 2.

All types of young-adult heads' savings account ownership, acquisition, or closure during the course of the panels were associated with the increased probability of acquiring unsecured debt compared to no account ownership (see table 7, hurdle 1). These relationships differed with regard to the amount of unsecured debt that households accumulated (see table 7, hurdle 2). Owning a savings account compared to not having owned one was negatively associated with households' unsecured debt accumulation. However, closing a savings account—perhaps becoming unbanked or losing a connection to the financial mainstream—was positively related to households' unsecured debt accumulation. In fact, closing a savings account was associated with a 7 percent increase in households' unsecured debt, or an increase of \$560 based on the median of \$8,000 as reported in table 2.

When the analyses were further broken down by panel year (see table 5), in 1996, owning a savings account was associated with accumulating less unsecured debt. In 2008, closing a savings account was associated with accumulating more unsecured debt. In other words, owning a savings account was associated with protecting young-adult-headed households from accumulating unsecured debt in 1996, while in 2008 closing a savings account seemed to be associated with households increased likelihood of accumulating this type of debt. For young adults in 2008, closing an account was associated with a 12 percent increase in the value of accumulated unsecured debt (a \$1,320 increase based on the median of \$11,000 as reported in table 3).

## DISCUSSION

This article explores the associations between a savings account and young-adult households' total, secured, and unsecured debt. In particular, we wanted to look at the association between a savings account and household debt during periods of macroeconomic stability and decline. We anticipated that a savings account could have different relationships with household debt during the economic stability and growth of the late 1990s and the economic decline of the late 2000s. Our expectation was that households without a savings account would be more likely to acquire and accumulate unsecured debt than households with a savings account and that this association would be more pronounced during difficult economic times. We also anticipated that a savings account might be positively associated with

the use of secured debt and that this association would also be more pronounced during difficult economic times. We find evidence for these associations as expected. Taken together, our findings suggest that a savings account may be associated with providing young-adult households with access to secured and unsecured debt in both economic contexts, while simultaneously protecting them on average from accumulating the type of debt that posed a greater risk to their balance sheets. These latter relationships were more pronounced for young-adult-headed households during the Great Recession. Beyond a savings account, socioeconomic position still mattered given the associations between young-adult householders' education level, employment status, and earned income and their households' debt.

We also recognize that the associations between a savings account and debt may be driven in part by unobserved differences between young-adult heads of households with and without a savings account. In other words, the associations may be driven by young adults' selection into owning a savings account, not necessarily the savings account itself. It remains an empirical question as to whether opening a savings account for a young adult who does not already have one will produce the same effects on their household's debt acquisition and accumulation as those described in this article. Given that our analyses do not account for these unobserved differences, the findings and their implications should be considered with care.

Our first key finding provides support for our hypothesis that owning a savings account may have different relationships with accumulating household debt during the two time periods investigated. In particular, owning a savings account may be associated with protecting households from accumulating unsecured debt during a period of economic instability, which may be more costly to—and thus riskier for—the health of their balance sheets. Owning a savings account in 1996 was associated with a 14 percent decrease in the value of households' accumulated unsecured debt, or about \$844.<sup>7</sup> This amount is almost twice the average payday or cash advance loan of \$500 (Consumer Financial Protection Bureau, 2014) and, while this amount might seem small, it can add up quickly. The average 2-week payday loan has an annualized interest rate ranging between 300 percent and 500 percent

7. The values of \$844 and \$1,320 that are reported in this paragraph were calculated using the median debt values reported in table 3.

(Center for Responsible Lending 2013), and \$844 could end up costing the household without a savings account \$4,220 in repayment plus interest<sup>8</sup>—an amount that the household with a savings account would not have to pay. Furthermore, closing a savings account and potentially losing one's connection to the financial mainstream in 2008 was associated with accumulating 12 percent more unsecured, unproductive debt, or \$1,320, during the Great Recession of late 2000s.

Our second key finding is that a savings account was associated with households' acquisition and accumulation of secured productive debt—a relationship that emerged in both periods of macroeconomic stability and decline. This suggests that a savings account may provide households with a gateway to productive debt. Specifically, any ownership, acquisition, or closure of a savings account was associated with a households' greater likelihood of acquiring secured debt. However, with regard to accumulating this type of debt, owning and acquiring a savings account had the strongest relationships with secured productive debt in the late 2000s, when households may have struggled to take on new debt as credit markets contracted. For example, the difference in median values of secured debt in 2008 between young adults who owned a savings account and those who did not own a savings account was \$49,000.<sup>9</sup> There was a difference of \$19,000 between young adults who acquired and did not own a savings account in 2008. In contexts like the Great Recession, then, when borrowing becomes more difficult, a savings account may be associated with a borrower's connection to lending markets and may help them to demonstrate their creditworthiness. Thus, a savings account may have helped young-adult households invest in their debt by entering and accumulating debt in better, healthier credit markets.<sup>10</sup>

Our third key finding is that households accumulated significantly more debt of all types between 1996 and 2008, even though there were few descriptive differences in the percentages of young-adult-headed households that used debt during these years. For example, 65 percent of households accumulated secured debt in 1996 and in 2008, although being a household

8. This assumes a 500 percent annualized interest rate and the original loan amount rolled over for a 12-month period.

9. The median amounts of secured debt reported in this paragraph were calculated using the median debt values reported in table 3.

10. The authors thank Benjamin Friedline for his description of "invest in their debt."

in 2008 was associated with a decreased probability of acquiring this debt, compared to households in 1996. However, young-adult-headed households accumulated significantly more debt in 2008 than in 1996, with accumulated median values of total, secured, and unsecured debt nearly doubling between these years. The 2008 panel was associated with households' accumulation of 23 percent more total debt, 16 percent more secured debt, and 48 percent more unsecured debt, when compared to the 1996 panel. In many ways, greater debt accumulation in 2008 confirms the lending and borrowing histories represented by these distinct macroeconomic periods. Households' debt holdings increased through approximately 2007 or 2008 at the start of the Great Recession, which mirrors the time frame from which our data were drawn (Mishel et al. 2012; Mian and Sufi 2014).

Finally, and clearly, socioeconomic position in the economy may still make a difference when it comes to households' acquisition and accumulation of debt, even while taking savings account ownership into consideration. Indicators of socioeconomic status like young-adult heads of households' education level, employment status, and earned income were related to whether or not their households used debt and the amount of debt they accumulated. For example, the strengths of the associations were similar between all levels of education and young-adult households' use of secured debt; however, households accumulated significantly more secured debt when their young-adult heads were more educated. Having a high school degree was associated with households' accumulation of 16 percent more secured debt compared to having lower levels of education. In contrast, having a 4-year college degree or higher was associated with accumulating 55 percent more secured debt. These percentages represent associated increases of \$14,080 and \$48,400 in secured debt, respectively. Young-adult households' access to secured debt was also associated with being employed; however, employment status had no bearing on the amount of debt accumulated by these households. Taken together, households may have greater access to and accumulate debt of all types when their heads are more highly educated, are employed, and earn higher incomes.

## LIMITATIONS

These findings should be considered in light of several limitations. First, the cross-sectional relationships that were tested in this study were limited to those available from the 1996 and 2008 SIPP. Many contextual factors with

potential relevance to young adults' household debt were not incorporated into the analyses, such as young-adult heads' financial education, their family history of financial socialization, the availability of banks within a community, or the banking mergers and closures that took place during the late 1980s, early 1990s, and late 2000s that preceded or followed the 1996 and 2008 SIPP data collection (FDIC 1997; Serido et al. 2010). While this research cannot rule out the relationships between these contextual factors with young adults' household debt, controlling for employment, education level, and household income provides some context. Second, our analyses do not account for a young adult's selection into owning a savings account. Previous research finds correlations between savings account ownership and households' income, assets, and debt (Friedline et al. 2014; Grinstein-Weiss, Oliphant et al. 2015). For example, increases in household income are associated with the likelihoods of owning a savings account or qualifying for a type of secured debt like a home mortgage (Haurin, Hendershott, and Wachter 1996; Friedline et al. 2014). Young-adult households' acquisition and accumulation of debt may also be conditional on their past debt (Johnson and Li 2010). While our analyses are unable to distinguish between these effects, previous experimental research that attempts to distinguish these effects finds that a savings account relates to increased asset accumulation over and above household income (Nam, Kim et al. 2013). Third, the 1996 and 2008 SIPP data have some complexities, including the oversampling of lower-income young adults, which resulted in less frequent ownership of a savings account and potentially less accumulated debt compared to other surveys (Czajka et al. 2003). In addition, imprecise reporting of retrospective monthly or quarterly information may have resulted in excessive transitions between reference periods (also known as "seam bias"; Moore et al. 2009). While this research focuses on the household debt of all young adults, those from lower-income backgrounds are arguably at greater risk for indebtedness and, thus, are an important subgroup of interest, which mitigates concerns about the 1996 and 2008 SIPP's oversampling. The concern about excessive transitions between reference periods—an artifact of SIPP survey design—has been moderated by using information from the fourth and last reference month of the quarter, a recommendation made by previous research (Ham, Li, and Shore-Sheppard 2009; Moore et al. 2009). This means we used information from 12 quarters across the 4-year panel (the last reference month in the quarter), as opposed to all 48 months. In other words, young adults appeared to more precisely

report life events like the month that they were married, but their recollection at the monthly level was fuzzier about seemingly minor life events like opening a savings account until they were asked in person by the SIPP interviewers in the fourth reference month.

## **CONCLUSION**

In this study, we use data from the 1996 and 2008 Survey of Income and Program Participation (SIPP) to assess the use of secured and unsecured debt for households headed by young-adult Americans. We focus in particular on whether a savings account might be associated with mitigating young adults' reliance on unsecured debt, a form of debt that tends to cost more and place borrowers at greater financial risk than secured debt does. We undertook this study to assess whether a savings account might be associated with protecting young-adult households from reliance on unsecured debt.

Our analyses reveal that while a savings account is related to more accumulated debt overall, the type of debt accumulated is less risky and potentially more productive for young adults' balance sheets. Compared to no account ownership, owning a savings account was associated with a 16 percent increase in the value of households' accumulated secured debt and a 5 percent decrease in the value of households' accumulated unsecured debt. We conclude that a savings account may help young adults "invest in their debt" by entering better, healthier credit markets and that, in this way, it might protect them from riskier, more costly credit markets.

We see five specific implications of our research. First, concerning financial inclusion, our findings on the association between a savings account and debt imply that a savings account is a financial tool that may offer young adults a gateway to building healthy balance sheets. If the associations tested in this study are confirmed by future research, young adults' balance sheets could have favorable debt-to-assets ratios and hold more productive debt if better financial tools were available (Friedline et al. 2014). Programs and policies like Children's Savings Accounts (CSAs; also referred to as Child Development Accounts [CDAs]) and Individual Development Accounts (IDAs) that automatically open safe, affordable, and progressively incentivized savings accounts for those who qualify may help to facilitate young adults' financial inclusion (Sherraden 1991; Nam et al. 2013; Friedline 2014). Likewise, cities and states around the United States are supporting

initiatives like Bank On, SaveUSA, and Refund to Savings that reduce barriers to savings account ownership and leverage annual tax filings to promote saving (Mills 2013; Grinstein-Weiss, Perantie et al. 2015).

Second, this finding carries clear implications for the financial industry. Half of young-adult households in our sample closed or never owned a savings account, suggesting that they may have been excluded from the use of this financial tool and therefore lingered on the financial margins. The onus cannot solely be on young adults to seek out savings accounts from financial institutions; institutions themselves need a wider reach. The most obvious way for financial institutions to broaden their reach is through the provision of safe and affordable savings accounts. According to the Federal Deposit Insurance Corporation's (FDIC) survey of financial institutions' efforts to serve those on the financial margins, only about 40 percent of institutions report developing products and services for lower-income, financially marginalized populations. Moreover, only 20 percent of financial institutions offer "second chance" accounts to consumers whose credit histories might otherwise prevent them from opening a savings account. While not all young adults find themselves on the financial margins and in need of such products, these statistics suggest that financial institutions may not be in the business of inclusion. In order to contribute to healthier household balance sheets, be more inclusive, and provide services to young adults (whose portfolios are likely to increase as they age and benefit financial institutions), these institutions need encouragement from regulators and legislators.

Third, policies may be needed that assist young-adult households in using debt productively. The mounting debt held by young adults is of particular concern as their financial health is eroded by an unstable economy and as uncollateralized debt takes up an increasing share of their balance sheets relative to other types of debt (Ross 2013; Houle 2014). Historically, secured debt dominated young Americans' balance sheets: this had the benefit of providing collateral that could be leveraged to acquire other types of debt, generating equity over time, allowing for considerable tax breaks, and contributing to wealth accumulation. In fact, secured debt in the form of home ownership has long been the primary mechanism for wealth accumulation in the United States. However, many young adults are delaying or forgoing the purchase of a home, and this may be related to rising debt more generally and student loan debt in particular (Elliott,

Grinstein-Weiss, and Nam 2013; Houle and Berger 2015). Minimizing unsecured, unproductive debt and burdensome student loan debt is an obvious policy intervention that would benefit young adults' balance sheets and allow them to begin building a strong financial future. Like the historic wealth transfers made available by the Homestead Act of 1862 (Williams Shanks 2005), perhaps the equivalent policy intervention for the twenty-first century is one that invests in young adults' debt to stabilize their financial health and catalyze them toward economic mobility.

Fourth, in order for young adults to manage both sides of their balance sheets, we need to promote financial education among young people. There are positive associations between young adults' financial education and their financial health that are worth some discussion (Brown et al. 2013, 2014; Fernandes, Lynch, and Netemeyer 2014). As mentioned in the literature review, Brown and colleagues (2014) reveal that young people who attended public school after the implementation of state-mandated financial education fared better in terms of credit scores and lower delinquency rates. However, it is important to acknowledge that young people also need opportunities in the broader macroeconomic context that support their financial health. For instance, young people may be able to make better use of the knowledge gleaned through financial education when the economy is growing, employment is easier to find and pays a living wage, and the types of mortgages available through banks are affordable. Financial education alone could not have prevented or compensated for the complex macroeconomic changes that took place in the 1990s and 2000s, reversing the low or stagnant wages or unemployment spurred by the Great Recession. Not even the world's most well-respected economists foresaw the Great Recession (Krugman 2009; Smith 2015). This does not mean that financial education is unimportant; rather, insofar as it can help us to make healthier financial decisions, financial education should be promoted in public school systems.

Finally, one reason that possession of a savings account is associated with young adults' financial health—including their use and accumulation of debt, especially unsecured debt—is that the savings therein might be used to meet unexpected expenses or smooth disruptions in income. As mentioned in our review of the literature, research confirms that savings is associated with a reduction in financially vulnerable households' reliance on high-cost credit. Emergency and precautionary savings seem to help in staving off financial difficulties. Gregory Mills and Joe Amick (2010) find that holding liquid

assets of \$1,999 or less (as opposed to no liquid assets at all) is associated with a significantly lower incidence of most types of material hardship among lower-income households, including missing utility or housing payments, missing a doctor's visit, or experiencing food insecurity. Gjertson (forthcoming) finds that emergency savings is associated with buffering households against financial shocks, and that this is especially true for lower-income households. Programs that help lower-income people build emergency savings (New York City's Save USA, e.g., which offers an incentive to save at tax time) should be promoted by advocates and supported by policy.

In the midst of public discussions about young adults' indebtedness and the problems it can create for building healthy balance sheets, our findings demonstrate that a savings account—a simple financial tool—may be a possible solution. Thus, a savings account may help young adults to access better, healthier credit markets and protect them from accessing riskier ones. If these associations are proven by future empirical and causal research, young Americans may begin their adulthood with balance sheets that catalyze them toward economic mobility rather than chip away at their financial health.

## **APPENDIX**

### *Descriptions of Control Variables*

*Age:* Young adults' age was a continuous variable ranging from 18 to 40 (TAGE).

*Gender:* Young adults' gender was measured based on their reports of being male or female (ESEX; male = 1; female = 0 [reference]).

*Race:* Young adults' race included those who were white, black, Asian/Pacific Islander, and Native American/First Peoples (ERACE). Given the low percentage in the sample who were Native American/First Peoples and Asian/Pacific Islander and their very similar estimates in the models when compared to blacks, Native American/First Peoples and Asian/Pacific Islanders were combined with blacks and identified as nonwhite (white = 1; nonwhite = 0 [reference]).

*Marital status:* Marital status (EMS) was measured by asking young adults to report monthly whether they were married, widowed, divorced, separated, or never married. Young adults' responses were collapsed into married or not married categories (married = 1; not married = 0 [reference]).

*Family household type:* Each quarter, young adults were asked their relationship to the household reference person (ERRP)—the person for the household whose name appeared on the lease or mortgage and who was identified by the 1996 SIPP as being the household head or person of reference. The 1996 SIPP recorded a range of relationship statuses, from a spouse or relative of the reference person to a housemate or other nonrelative. The range of relationships were categorized into young adults who were listed as the reference person, the child of the reference person, a relative, or a nonrelative. Forty-three percent of young adults were listed as the reference person, potentially indicating that they were responsible for households of their own. Twenty-two percent of young adults reported that they were the child of the reference person, potentially indicating that they continued to reside with their families of origin. The remaining 35 percent reported that they were relatives or nonrelatives of the household reference person. These responses were categorized as family or nonfamily for the purposes of analyses (family = 1; nonfamily = 0 [reference]).

*New head of household:* The change in household relationship status tracked young adults quarterly and retrospectively over 1 previous calendar year, identifying whether young adults changed from being listed as a child, relative, or nonrelative to a household reference. Approximately 3 percent of the sample reported becoming a new reference person at some point during the panel. This change in household relationship status served as a proxy for young adults who became heads of households during the course of the panel (new head of household “yes” = 1; not a new head of household “no” = 0 [reference]). In other words, while all young adults were heads of households, some entered the SIPP already as heads of households, whereas others became heads of households during the times of observation.

*Education level:* Young adults were asked to report the highest grade completed or degree received each month, ranging from less than first grade to doctorate degree (EEDUCATE). Responses were collapsed to indicate having received primary school education through grade 8, some high school education through grade 12, a high school degree, some college, or a 4-year college degree or more (college degree or more = 3; some college = 2; high school degree = 1; some high school or less = 0 [reference]).

*College enrollment:* Young adults’ college enrollment status (RENROLL) was measured by asking whether or not they were enrolled in school in the previous quarter. Young adults who were enrolled full- or part-time during the quarter were considered to have been enrolled in college, whereas those

who were not enrolled in the quarter were considered to have not been enrolled (enrolled in college = 1; not enrolled = 0 [reference]).

*Employment status:* Young adults were asked whether or not they were employed during the month (RMESR). Those who responded that they were with a job for the entire month were coded as employed. Young adults who reported being with a job for part of the month were coded as being partially employed. Those who were without a job, including being absent without pay, laid off, or looking for work, were coded as unemployed (employed = 1; not employed = 0 [reference]). Young-adult heads' employment status was considered across the entire quarter.

*Quarterly mean income:* Young adults' total earned income was available for a given month (TPEARNS), which was averaged across the months leading up to the fourth reference month in the quarter, winsorized (Cox 2006), and transformed using the natural log to account for skewness. In the analyses predicting liquid assets, quarterly mean income was divided by 1,000.

*Home ownership:* Young adults were asked whether they lived in a home being bought or currently owned or whether they rented or otherwise occupied the residence in which they were living (ETENURE; home owner = 1; not a home owner = 0). Their responses were measured monthly. These monthly responses were used to track changes in home ownership between one quarter and the next. A young adult who originally said they owned a home and then did not was considered to have sold their home (owned a home "yes-yes" = 3; purchased a home "no-yes" = 2; sold a home "yes-no" = 1; and never owned a home "no-no" = 0 [reference]).

*Geographic region:* The 1996 SIPP asked young adults whether they lived in a metropolitan region or rural or suburban region (TMETRO; metropolitan = 1; rural or suburban = 0). Young adults were also asked in which state their household resided (TFIPSST). States were recoded into geographical regions (West = 3; North Central = 2; South = 1; North East = 0 [reference]). Southern states included Alabama, Arkansas, Delaware, Washington DC, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. North Central states included Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, North Dakota, South Dakota, Wisconsin, and Wyoming. Western states included Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, and Washington. North East states included Connecticut, Maine,

Vermont, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, and Rhode Island.

#### NOTE

**Terri Friedline** is an assistant professor at the University of Kansas School of Social Welfare. She is the faculty director of financial inclusion at the Center on Assets, Education, and Inclusion, University of Kansas, and a research fellow at New America in Washington, DC. Her research interests include asset building and financial capability with an aim toward improving the lives of young people and their families who are economically disadvantaged.

**Allison Freeman** is a senior research associate at the University of North Carolina Center for Community Capital. Her research considers the marginalization of individuals and groups within economic systems, with a particular focus on the racial wealth gap in the United States and how access to financial services, both credit and debt instruments, might exacerbate or redress economic inequality.

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