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Toward Healthy Balance Sheets: The Role of a Savings Account for Young Adults' Asset Diversification and Accumulation

*Terri Friedline, PhD, University of Kansas, School of Social Welfare
1545 Lilac Lane, 307 Twente Hall, Lawrence, KS 66045
Email: tfriedline@ku.edu; Phone: (785) 864-2267; Fax: (785) 864-5277

Paul Johnson, PhD, University of Kansas, Center for Research Methods and Data Analysis (CRMDA)
and Department of Political Science
1541 Lilac Lane, 523 Blake Hall, Lawrence, KS 66045
Email: pauljohn@ku.edu; Phone: (785) 864-9086; Fax: (785) 864-5700

Robert Hughes, MA, University of Kansas, Department of Sociology
1415 Jayhawk Boulevard, 716 Fraser Hall, Lawrence KS 66045
Email: maxweber@ku.edu; Phone: (785) 864-4111; Fax: (785) 864-5280

Abstract

Understanding young adults' balance sheets of today—particularly with regard to factors that set them on a path to financial security via asset diversification and accumulation—lends some insight into their balance sheets of tomorrow. Using panel data from the Census Bureau's 1996 Survey of Income and Program Participation, this study investigated the acquisition of a savings account as a precursor to young adults' asset diversification and accumulation as indicators of a healthy balance sheet through two avenues. The first avenue emphasized the ownership of a diverse portfolio of financial products (checking, certificates of deposit, money market, savings bond, stock, or retirement accounts), while the second considered the accumulated value of liquid assets. Almost half of young adults between ages 18 to 40 owned a savings account (43%); approximately 3% acquired a savings account during the course of the panel, with those who were older, non white, or unemployed being significantly less likely to acquire an account. Young adults who owned or acquired a savings account also had more diverse asset portfolios, owning checking, stock, and retirement accounts. A savings account by itself contributed about \$50 to liquid assets. However, the added contribution of combined stock and retirement accounts was \$5,283 and the effects increased as young adults earned more income, suggesting they could leverage their income and a diverse portfolio to accumulate assets. Evidence suggests that young adults who acquire a savings account and diversify their asset portfolios may also accumulate more liquid assets over time, which can be leveraged in the future to strengthen their balance sheets.

* Corresponding author

Summary of Findings

Acquisition or “take-up” of a savings account that occurs in early young adulthood may set the stage for continued account ownership.

- Forty-three percent of young adults consistently owned and 52% consistently did not own a savings account across the four-year panel. Fewer young adults acquired (3%) or closed (2%) accounts, providing some evidence that young adults’ financial behavior with regard to a savings account may be “sticky” and guided by inertia.
- Young adults were more likely to own a savings account when they were younger and less likely to acquire an account as they got older, suggesting early young adulthood may be an important time to promote account acquisition or “take-up.”
- Young adults who were unemployed were less likely to acquire a savings account and more likely to close an account, suggesting employment status may in part facilitate access to an account within the financial mainstream.
- Home ownership was a protective factor for owning a savings account. Young adults who were home owners were also more likely to own a savings account and less likely to acquire or close an account over time.

The acquisition of a savings account may pave the way for a diverse asset portfolio, which is one indicator of a healthy balance sheet.

- Young adults increasingly acquired accounts and diversified their asset portfolios through their mid to late 20’s before the trend slowed and leveled off in the 30’s. It may be important to promote a diverse asset portfolio in early young adulthood.
- Apart from a savings account, the most commonly held financial products included checking (24%), stock (15%), and retirement (24%) accounts.
- Consistently, the overwhelming majority of young adults owned a savings account at or before the acquisition of all financial products including checking, CD, money market, savings bond, stock, and retirement accounts.

A diverse asset portfolio may contribute to the health of young adults’ balance sheets via accumulated liquid assets.

- A savings account contributed \$49.68 and stocks contributed \$329.50 to accumulated liquid assets, controlling for all relevant factors. The relationships of these financial products to liquid assets diminished as young adults grew older, presumably as they diversified their portfolios with financial products like stock and retirement accounts.
- The combination of stock and retirement accounts contributed the most to young adults’ liquid asset accumulation—\$5,283.05. The effects of these financial products on their liquid asset accumulation increased as young adults earned more income, suggesting they could leverage their income and a diverse portfolio to accumulate assets.
- A retirement account was especially responsive to income in contributing to liquid assets. At the 75th income quintile, a retirement account contributed \$3,945 to liquid assets—more than at any other income quintile and substantially more than any single financial product.
- Young adults also accumulated significantly more liquid assets when they were older, were enrolled in college, had a college degree or more, earned a higher quarterly income, recently became a new head of household, and owned their own homes.

Introduction

Young adulthood is a period of the life course often characterized by financial fragility. Young adults earn the lowest incomes of their careers while making decisions about attending postsecondary education, living independently from households of origin, finding and changing employment, and repaying educational debt (Bell, Burtless, Gornick, & Smeeding, 2007; Mishel, Bivens, Gould, & Shierholz, 2012). They may also have limited assets upon which to draw during times of financial need given that half of young adults through age 40 lack sufficient accumulated assets to sustain themselves for three months above the poverty line without regular income (Rank & Hirschl, 2010). Young adults' average accumulated savings in a savings account is generally low, ranging from \$639 to \$1,881 between ages 16 to 35 (Friedline & Nam, 2014). This suggests that young adults may have limited savings for even daily, lower-level financial needs like groceries, bills, rent, or auto repair, let alone needs that persist for several months.

Balance sheets are generally agreed upon to be comprised of assets, debt, and net worth (Boshara, 2012; Key, 2014; Mishkin, 1978), with an underlying assumption that saving, diversifying, and accumulating assets lead to healthier balance sheets (Carasso & McKernan, 2007). Young adults with lower accumulated liquid assets may have fragile balance sheets at a time when healthy balance sheets are most needed. If young adults enter this period of the life course by accumulating savings and liquid assets through financial products like money market, stock, and retirement accounts, they may have the financial resources to better weather unexpected changes in employment or living situations or to further invest in their futures. Their savings and liquid assets help to comprise a healthy balance sheet that likely sets them on a path for financial security from which they can benefit well across their life course. Without sufficient savings and liquid assets, they may be unable to weather unexpected changes or to invest in their futures, potentially setting them on a path for financial insecurity. Understanding young adults' liquid assets as part of their balance sheets of today lends some insight into their balance sheets of tomorrow, particularly with regard to factors that set them on a path to financial security.

This paper attempts to understand assets as a component of young adults' balance sheets of today; that is, understanding where young adults start out financially as a window into their financial security across the life course. Given that savings accounts are one of the most basic products available from mainstream financial institutions and are hypothesized as a starting place for asset diversification and accumulation (Friedline & Elliott, 2013; Hogarth & O'Donnell, 2000; Sherraden, 1991; Xiao & Noring, 1994), this paper seeks to better understand the role a savings account plays in young adults' balance sheets, particularly with regard to a diverse portfolio and the accumulation of liquid assets.

A Savings Account and the Financial Hierarchy of a Diverse Portfolio

Drawing on Maslow's (1948, 1954) human needs theory, the financial products that young adults acquire may ascend a hierarchy based on the needs the products are designed to meet (Xiao & Anderson, 1997). Human needs are assumed to be hierarchical, with the achievement of higher-level needs conditional on the achievement of lower-level needs (Maslow, 1948, 1954). These assumptions have been applied to the acquisition and use of financial products as they relate to lower- and higher-level needs (Xiao & Anderson, 1997; Xiao & Noring, 1994; Xiao & Olson, 1993). Notably, lower-level needs are referred to as "survival" and higher-level needs are referred to as "growth" (Xiao & Anderson, 1997),¹ labels that also provide some indication of the achievement of financial security. From this perspective, a savings account is one of the first and most common financial products acquired because it is lower risk, easily liquidated, and designed for the achievement of daily, lower-level needs. Financial products like stock and retirement accounts are higher risk, have constraints on liquidity, and are designed for long-term investments and higher-level needs. Young adults may ascend a financial hierarchy by acquiring a savings account that facilitates their achievement of daily, lower-level needs like buying groceries or paying utility bills. Once acquired, young adults' maintenance of their savings account for continuing to meet lower-level needs may be guided in part by the inertia of behaviors regarding financial products (Benartzi & Thaler, 2007; Madrian & Shea, 2001). As they transition to achieving long-term, higher-level

¹ Xiao and Anderson (1997) also identify a third category of needs—"security" or middle-level needs like saving for a home or investing in human capital. Certificate of deposit, bond, and money market accounts are financial products theorized to be consistent with meeting security, middle-level needs.

needs like affording college tuition or the down payment on a new home or saving to provide inheritances to future generations, young adults may acquire stock and retirement accounts. A diverse portfolio, then, potentially indicates that young adults have ascended the hierarchy (Brouwer, 2009; Canova, Rattazzi, & Webley, 2005; Xiao & Anderson, 1997). This trend toward diversification is consistent with an optimal portfolio arrangement that spreads potential risk across multiple assets (Fabozzi, Gupta, & Markowitz, 2002; Markowitz, 1952); though, generally, the extent of diversification of most asset portfolios is limited (King & Leape, 1998).

Toward Healthy Balance Sheets

The financial products that young adults acquire as they ascend this hierarchy may serve as strategies for diversifying and accumulating assets, nudging them toward healthy balance sheets. Young adults can leverage the assets accumulated in a diverse asset portfolio to their advantage for generating additional wealth throughout the life course (Friedline, Despard, & Chowa, 2013; Friedline & Song, 2013; King & Leape, 1998). As such, a diverse portfolio may be an indicator of the ascension of the financial hierarchy to achieve higher-level needs and the contribution of accumulated assets across the portfolio may be an indicator of financial security (Beutler & Dickson, 2008; Canova, Rattazzi, & Webley, 2005; Xiao & Anderson, 1997). On the one hand, a majority of liquid assets held in a savings account might indicate the need for easily liquidated assets, which might allude to inadequate funds to afford daily, lower-level needs. On the other hand, a majority of assets held in stock or retirement accounts is more complicated to liquidate and might indicate the existence of adequate funds to meet daily expenses and therefore represent investment in higher-level needs. Research confirms that the amounts accumulated in a savings account decrease as assets increase (Xiao & Anderson, 1997), suggesting the contributions of the portfolio to asset accumulation change as the financial hierarchy is ascended. For example, the amount held in a savings account contributes the most to accumulated liquid assets for households at the bottom 10% of the asset distribution, compared to the amounts held in stock and retirement accounts for households at the top 10% of the distribution (Xiao & Anderson, 1997). Likewise, the most common trajectory from asset diversification to accumulation is for those who begin

by accumulating assets in savings and checking accounts in early young adulthood to accumulating assets through home ownership and stocks (Keister, 2003). It is much less common for young adults to begin by accumulating assets in homes and stocks.

This could be interpreted to mean that asset diversification must always precede accumulation; however, the relationship between diversification and accumulation is likely more nuanced. Sherraden (1990), in writing about the optimal portfolio arrangement, says “With greater assets, a household can more effectively diversify its holdings” (p. 589), suggesting instead that asset accumulation precedes diversification. The question of “Which came first, a diverse portfolio or accumulated assets?” is somewhat less perceptive than the question of “How does a diverse portfolio contribute to the value of accumulated assets?” Whereas the first question is interested in determining the causal direction of the relationship, the latter is interested in exploring the correlation or pattern and composition of assets accumulated within the context of a diverse portfolio. In other words, compared to young adults who do not own any account or only a savings account, young adults who own both savings and retirement accounts may be more financially secure and have a healthier balance sheet based on their accumulated liquid assets. This is because a savings account may represent lower-level needs whereas savings and retirement accounts represent lower- and higher-level needs. If young adults acquire financial products contingent upon a financial hierarchy that eventually develop into a diverse portfolio and a diverse portfolio can be leveraged to generate additional assets, then it is worth knowing how a diverse portfolio contributes to the balance sheet.

Research Questions

This paper asks the following questions in order to better understand how young adults acquire a savings account and the role account acquisition plays for diversifying and accumulating assets: (1) What relates to young adults’ acquisition or take-up of a savings account, controlling for relevant factors? (2) Once acquired, what fraction of young adults acquire other financial products like certificates of deposit, stock, and retirement accounts? In other words, does the acquisition of a savings account pave the way for young adults to diversify their asset portfolios? (3) How much do young adults’ acquisition of a savings

account and a diverse asset portfolio contribute to the value of their accumulated liquid assets, controlling for relevant factors?

Methods

Data

In order to analyze the acquisition of a savings account, asset diversification, and asset accumulation among a young adult population over time, a large sample that provided information at multiple and frequent time points was needed. The Panel Study of Income Dynamics (PSID) and Survey of Consumer Finances (SCF) are often used to explore questions about wealth (including savings and assets; Curtin, Juster, & Morgan, 1989; Czajka, Jacobson, & Cody, 2003; Wolff, 1999); however, these surveys have smaller sample sizes and an analysis can only measure savings and assets every other year at most, potentially missing sensitive changes that occur monthly or quarterly. This study used data from the 1996 panel of the Survey of Income and Program Participation (SIPP), which was collected and made publicly available by the Census Bureau. The 1996 SIPP provided data that was collected during the 1990s, which was a decade of US economic growth (Jorgenson, Ho, & Stiroh, 2008). Thus, the questions and data explored in this paper attempted to understand balance sheets during generally favorable economic conditions (when young adults' balance sheets might appear the most optimistic).² Between December 1995 and February 2000, the 1996 SIPP drew a random sample of households grouped within geographical regions based on population counts from the most recent census (US Census Bureau, 2012), over-sampling those with lower incomes ($N = 380,609$ individual respondents from 40,188 eligible households; $n = 1,634,357$ number of rows). Each household member over age 15 participated in data collection, which occurred quarterly or three times per year. During each interview, respondents recalled their previous four months' experiences, thus resulting in 12 observations per year for a 48-month time

² While the US as a whole experienced macroeconomic growth evidenced in part by expanded productivity, (Jorgenson, Ho, & Stiroh, 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% of the median net worth held by older households, female-headed households had about 9% of the median net worth of male-headed households, black households had about 14% of the median net worth held by white households, and high school-educated households had about 19% of the median net worth held by college-educated households (Friedline, Nam, & Loke, in press).

span on many variables. This allowed for the construction of monthly and quarterly histories of young adults' savings and asset diversification accounts for up to 48 months, which was ideal for addressing the research questions. Quarterly information was drawn from the fourth month in the reference period when respondents were interviewed in person, allowing for the examination of changes in responses from one quarter to the next. The 1996 SIPP also collected annual information in topical modules on special topics, including health, education, child care, and accumulated assets. Annual information on liquid assets was collected in topical modules during waves 3, 6, 9, and 12 during the four-year panel.

Sample selection criteria included young adults between ages 18 to 40 who provided reference month and topical module information and separate samples were produced from these two sources of information. Young adult respondents were included when they were within the age range of 18 to 40 and participated in at least two years' worth of data collection. This meant that a young adult who entered the sample at age 16 was included when they provided at least two years' worth of information, making them age 18 at some time during the sampling frame. Likewise, two years' worth of information was retained for a young adult who entered the sample at age 40, making them age 42 at some time during the sampling frame. In other words, young adult respondents were included when age 18 would not be their last year of eligibility and when age 40 would not be their first year of eligibility. Restricting the sample in this way minimized the inclusion of young adults who cycled in or out of the 1996 SIPP within a shorter time, ensured more equal sample sizes across age groups, and reduced the number of available rows in the data to 1,245,689 (a reduction of 24%). Based on this selection criteria, a total of 311,446 person-month observations for young adults were included in the reference month sample ($n = 30,601$ individuals). There were 36,415 individuals included in the topical module sample and 100,998 rows of data. This reduction in rows of data for the topical module sample was expected given that the sample was followed on an annual basis as opposed to monthly or quarterly.

Young adults had an average age of 30 that was 48% female and 82% white. Smaller percentages of Asians (4%) and other non white groups (14%; blacks, Native Americans / First Peoples) were represented. Forty-three percent of young adults had a savings account. Among those who accumulated

liquid assets, the mean value totaled \$6,328 ($SD = \$79,498$).³ Samples drawn from reference month and topical module data were similar on all characteristics; however, young adults from the topical module earned an average of \$500 more per month. See Tables 1 and 2 for additional sample characteristics.

[Insert Table 1 here]

[Insert Table 2 here]

Measures

The main analyses examined savings account acquisition, a diverse asset portfolio, and accumulation of liquid assets as outcome variables.

Savings account acquisition. In order to model the acquisition of a savings account during the course of the panel, young adults' 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 one previous calendar year. For instance, a young adult who originally said they did not own a savings account during one quarter and then said yes during the next quarter was considered to have acquired a savings account. Thus, this dependent variable measured young adults' "no-to-yes" change in account, compared to those who consistently reported owning a savings account, closed their account, or did not acquire a savings account (savings account closure "yes-to-no"; savings account acquisition "no-to-yes"; savings account ownership "yes-yes"; no savings account ownership "no-no"). Approximately 43% of young adults consistently had a savings account and 52% consistently did not have a savings account. About 3% of young adults acquired an account between quarters and 2% closed their account. Acquisition and closure were the most commonly reported savings account transitions. We were also interested in other variations of account acquisition and closure; however, less than 1% of young adults made multiple transitions throughout the panel. Only one young adult reported vacillating between acquisition and closure at every time point.

Diverse asset portfolio. Aside from a savings account, young adults reported whether or not they owned other types of financial products that represented additional strategies for asset diversification

³ The median value presented here for liquid assets were provided after the value was winsorized (Cox, 2006).

(yes; no). These included checking (EAST2A), certificate of deposit (CD; EAST2D), savings bond (EAST1A, EAST3C), money market (EAST2C), stock (EAST3B, EAST3A), and retirement accounts (EAST1B, EAST1C). Ownership of these financial products were reported quarterly and their tracking occurred retrospectively over one previous calendar year. Twenty-four percent of young adults owned checking, 5% owned CD, 11% owned savings bond, 5% owned money market, 15% owned stock, and 24% owned retirement accounts. The diversity of young adults' asset portfolio was explored descriptively rather than as outcomes in prediction models given that the acquisition of a savings account was found to precede or coincide with financial products that comprised the portfolio and the acquisition of a savings account was a dominant predictor in preliminary models.

Liquid assets. Young adults were asked to sum the amount of liquid assets held in interest earning accounts, including savings, checking, CD, and money market accounts (TIAITA). Young adults also reported amounts held in bond (TALSBV), stock (ESMIV), and retirement (TALRB, TALTB, TALKB) accounts. These amounts were available from topical modules in waves 3, 6, 9, and 12 of the 1996 SIPP and summed together to create a combined measure of liquid assets.

Liquid assets—an outcome variable whose value had the potential to cross or include \$0—was winsorized at the 99th percentile to censor extreme values (Cox, 2006) and transformed using the inverse hyperbolic sine (IHS; Friedline, Masa, & Chowa, 2013; Pence, 2006). The IHS transformation has been found to adjust for skewness in wealth variables' distributions more accurately when compared to other transformations (Friedline, Masa, & Chowa, 2013; Pence, 2006). After the analyses, the IHS transformed outcome variables were back-transformed into real dollars using predicted values that accounted for control variables in the models.

Eleven variables were included as controls in the analyses, including age, gender (female; male), race (non white; Asian; white), marital status (married; not married), college enrollment (enrolled full-time; enrolled part-time; not enrolled), education level (college degree or more; some college; high school degree; partial high school; primary school), employment (employed; partially employed; not employed), quarterly earned income, household relationship ([reference person; child; relative; non-relative] and [new

reference person; not a new reference person]), home ownership ([owned; rented or occupied] and [owned; purchased; sold; not a home owner]), and geographic region (south; north central; west; north east). Savings account ownership and financial products within a diverse asset portfolio (yes; no) were also used as controls in models predicting liquid assets. Descriptions of these control variables are available in Appendix A.

Control variables were constructed using information from the preceding months leading up to the fourth reference month in the quarter and averaging across the months. Thus, control variables were coded for the analyses at the quarterly level. The quarterly level measurements could be used when predicting savings account acquisition or measuring a diverse asset portfolio given that all were on the same quarterly scale. However, liquid assets was measured at the annual level and the control variables that were measured quarterly needed to be compressed to the same annual time scale as the asset accumulation outcomes. To do so, the control variables were recoded to examine changes between quarters across the year preceding liquid asset accumulation. This meant that a young adult could report not owning a home in the first two quarters and purchasing a home in the third quarter, changing from not owning a home to having purchased a home during the course of the year.

Analytic Plan

The analysis plan leveraged the quarterly and longitudinal variation in young adults' savings account acquisition in order to measure associations with a diverse asset portfolio, including ownership of diverse financial products and the accumulation of liquid assets. Three analytic techniques were used. Multinomial logit regression was used to predict account acquisition and multilevel and censored tobit regressions with individual random effects were used to predict young adults' accumulated liquid assets. The multinomial logit regression was accomplished using Stata (Stata Corp, 2011) and the multilevel and tobit regressions with random effects were accomplished using R (R Core Team, 2014).

Multinomial logit regression was used in order to compare quarterly changes in savings account ownership, acquisition, and closure to no savings account ownership, controlling for relevant factors. This technique was ideal because it allowed for the comparison of multiple account types. Robust standard

errors and individual clustering was used in the multinomial models to predict savings account acquisition (Hosmer & Lemeshow, 2000). Control variables measured at the quarterly level were included in the model and lagged by one quarter. This meant the previous quarter was used to predict acquisition in the quarter in which the savings account was measured.

Multilevel (hierarchical linear) modeling was used as the primary analytic technique for predicting liquid assets given the technique's ability to model random effects accounting for unobserved individual heterogeneity and to control for categorical and continuous variables (Raudenbush & Bryk, 2002). In other words, multilevel modeling was used to account for differences between individuals that existed within the data. The *nlme* add-on package in R was used for multilevel modeling (Pinheiro, Bates, DebRoy, Sarkar, & R Core Team, 2009) and robust standard errors were produced using a Huber/White correction (Huber, 1967; Maas & Hox, 2004; Raudenbush & Bryk, 2002; White, 1982).

As a comparison to the multilevel modeling, tobit regression analysis with individual random effects was used to predict liquid assets (Honoré, Kyriazidou, & Powell, 2000; Tobin, 1958).⁴ Tobit regression was used given that liquid assets was left-censored, meaning that a high number of values were recorded as \$0. This analytic technique depicted these censored outcomes as information from a continuously distributed latent variable and avoided introducing bias in the estimates by omitting this information (Angrist, 2001). In other words, censored tobit regression attempted to minimize the \$0 liquid asset amounts from young adults who did not have savings or other accounts or any liquid assets.⁵ The *censReg* add-on package in R was used for conducting the censored tobit regressions with random effects (Henningsen, 2010, 2013), which was dependent on the *maxLik* package for producing Maximum Likelihood estimates (ML; Henningsen & Toomet, 2011). The results reported in the text focus on the

⁴ Censored median regression was considered to analyze liquid assets, debt, and net worth at the annual level (Koenker, 2008); however, R had difficulty running the model in a reasonable amount of time given the large number of observations. Censored median regression was abandoned as an analytic strategy after a single model was not produced within five days.

⁵ The effect of the censored tobit regression on the prediction of liquid assets can be seen by comparing estimates of "no account of any kind" from Model 6 to estimates from Models 4 and 5. The estimate for "no account of any kind" takes into consideration young adults who have no accounts and, thus, little to no accumulated liquid assets. In the censored tobit regression (Model 6), the estimate was steeper with a lower intercept or constant value ($\beta = 0.580$; $SE = 0.285$), indicating the technique's attempt to minimize the effects of these values.

multilevel model with individual random effects, as results from the censored tobit regression were provided as a type of sensitivity analysis.

Results

Acquiring a Savings Account

Small percentages of young adults acquired or closed accounts between quarters. About 3% of young adults acquired an account and 2% closed an account. The predominant behaviors with regard to a savings account were consistently having owned or never having owned a savings account, with respective percentages of 43 and 52. Figure 1 provides a graphical display of young adults' savings account ownership, acquisition, and closure by age. However, Figure 1 also displays the likelihood of owning a savings account increasing with age suggesting that, while not sensitive to acquisition between quarters, young adults increasingly acquired accounts through their mid to late 20's before the percentage leveled off in the 30's.⁶

[Insert Figure 1 here]

Multinomial logit models predicted young adults' acquisition of a savings account between quarters, comparing savings account ownership ("yes-yes"), acquisition ("no-to-yes"), and closure ("yes-to-no") to no savings account ownership ("no-no"; see Table 2). The models of primary interest compared acquisition and closure to no savings account ownership (Models 2 and 3).

Savings Account Ownership (Model 1). Females were more likely than males to own a savings account. By race, young adults who were non white and Asian were both less likely to own accounts compared to whites. They were also more likely to own accounts, compared to no savings account ownership, when they owned their own homes. Living in the west and south were negatively related to account ownership compared to living in the north east. Splines for age indicated that young adults'

⁶ Notably, when we looked at the relationship between age and savings account ownership using a predicted probability scale from the GAM models that controlled for relevant factors, the age trend disappeared. In other words, using this method, young adults at age 40 or 30 were no more likely to own a savings account than young adults at age 20. These figures are available upon request.

savings account ownership declined as they got older, with the exception of the youngest age spline being more likely to own an account.

Savings Account Acquisition (Model 2). By race, young adults were more likely to acquire a savings account when they were Asian compared to white; though, they were less likely to acquire an account if they were non white. Being unemployed and living in the south were negatively related to the acquisition of a savings account. Young adults were less likely to acquire an account if they were a home owner. Given that young adults were more likely to own an account to begin with if they were a home owner (see Model 1), this negative relationship was unsurprising.

Savings Account Closure (Model 3). Non white young adults were less likely to close a savings account compared to whites; though, they were also less likely to own accounts to begin with (Model 1). Those who were unemployed were more likely to close an account. Young adults were also less likely to close a savings account compared to not having owned an account if they owned a home. Young adults who were married were more likely to close an account than to not own one.

[Insert Table 2 here]

In sum, young adults' race, employment status, home ownership, geographic region, and age were consistently related to account ownership, acquisition, and closure across the models. The findings from the multinomial logit models can be interpreted as follows. Given that non white young adults were less likely to own an account to begin with when compared to whites, they were also less likely to exhibit quarterly changes in account acquisition and closure. For Asians, however, they were less likely to own an account compared to whites but more likely to acquire one between quarters. There were no differences in ownership and acquisition based on marital status; however, those who were married were more likely to close an account—an observation that was perhaps an artifact of joint account holding behavior between marital partners. While there was no difference on account ownership between young adults who were employed versus unemployed, those who were unemployed were less likely to acquire an account between quarters and more likely to close an account. This suggested employment status played a role in facilitating use of a savings account. Home owners were more likely to own an account to

begin with, which perhaps explains why they were also less likely to acquire or close accounts between quarters. Notably, education level and quarterly earned income were not significant in any of the models.

Diversifying Asset Portfolios

Compared to the percentage of young adults who owned and acquired a savings account, far fewer owned a diverse portfolio. As aforementioned, 24% of young adults owned a checking, 5% owned CD, 5% owned money market, 11% owned savings bond, 15% owned stock, and 24% owned retirement accounts. However, if the acquisition of a savings account paves the way for young adults to diversify their asset portfolios, savings accounts should consistently precede or occur simultaneously with the ownership or acquisition of these financial products. Figures 2 through 4 display young adults' portfolios as they relate to a savings account.

In most cases, young adults owned a savings account at or before the acquisition of checking, CD, money market, savings bond, stock, and retirement accounts (see Figures 2 and 3). Figure 2 presents the percentage of young adults with a savings account that also owned other financial products. Figure 3 presents the percentage of acquired financial products that were preceded by or coincided with a savings account, which required locating when in the 1996 SIPP young adults first acquired these products and identifying if they owned a savings account at that time or in any preceding month. For instance, 44% of young adults with a savings account also owned a checking account (see Figure 2) and most young adults' acquisition of a checking account was preceded by or coincided with a savings account (23%; see Figure 3). Forty-two percent of young adults with a savings account also owned a retirement account (see Figure 2) and most young adults' acquisition of a retirement account was preceded by or coincided with a savings account (21%; see Figure 3). Far fewer financial products were owned or acquired in absence of a savings account.

[Insert Figure 2 here]

[Insert Figure 3 here]

Young adults also acquired savings accounts in combination with other financial products as they grew older (see Figure 4). The most common combinations were between savings accounts and checking,

stock, and retirement accounts. Similar to Figure 1, young adults may have increasingly acquired accounts and diversified their asset portfolios through their mid to late 20's before the trend leveled off in the 30's.

[Insert Figure 4 here]

In sum, young adults who owned a savings account appeared to own other financial products more often. Furthermore, savings account ownership consistently preceded or coincided with the acquisition of other financial products.

Accumulating Liquid Assets

Information on young adults' accumulated liquid assets was provided from annual topical modules and analyzed using multilevel and censored tobit regression modeling with individual random effects (Table 4, Models 4 through 6). Random effects accounted for unobserved individual heterogeneity. The intra-class correlation (ICC; Raudenbush & Bryk, 2002)—defined as the between individual variance divided by the total variance of liquid assets—ranged from 0.305 (Model 5) to 0.540 (Model 6), indicating that significant differences in young adults' individual characteristics explained between 30% and 54% of the variability in liquid assets. The results reported below focus on the multilevel analyses from Models 4 and 5. The relationships between financial products and liquid assets are reported first before discussing relationships between control variables and liquid assets.

[Insert Table 4 here]

As a first step, the financial products representing a diverse portfolio were used to predict liquid assets in Model 4, absent control variables. It was previously determined that a savings account was a precursor to a diverse asset portfolio and almost always coincided with or preceded other types of financial products. As such, the relationships of checking, stock, and retirement accounts with liquid assets can be interpreted as the added contribution of a diverse portfolio over and above a savings account. As expected, young adults without an account of any kind accumulated significantly less liquid assets, whereas those with other account types accumulated significantly more. In particular, the

relationships were strongest between stock and retirement accounts and liquid assets; though, the combination of these accounts was negatively related to liquid assets.

While there was some variation in the size or strength of the estimates between Models 4 and 5, the direction of the relationships remained fairly consistent once control variables were added. With controls, savings and stock accounts had the strongest relationships with liquid assets based on regression coefficients. However, using predicted values (see Table 5), a savings account contributed \$49.68 and stocks contributed \$329.50 to accumulated liquid assets. In terms of dollar values, the combination of stock and retirement accounts contributed the most to young adults' liquid asset accumulation—\$5,283.05. Results also indicated that retirement and the combination of stock and retirement accounts contributed negatively to young adults' liquid assets.

[Insert Table 5 here]

Given that financial products' acquisition could be determined in part by age and income, interaction effects were incorporated. There were significant, positive interactions between young adults' age and their retirement and combined stock and retirement accounts for predicting liquid assets. Predicted values based on these interactions indicated that as young adults ascended age quintiles, the values contributed to liquid assets by combined stock and retirement accounts ranged from \$4,900.80 to \$12,385.20 (see Table 6). Also consistent with the interaction terms between age and financial products from Model 5, the amounts contributed to liquid assets by savings, checking, and stocks declined across the 25th, 50th, and 75th age quintiles.

There was a significant, positive interaction between stock and retirement accounts and quarterly mean income; however, the interaction between the combined accounts was negative. Predicted values indicated that the contributions to liquid assets made by stock and retirement accounts were sensitive to income (see Table 6). At the 25th quintile of income, the predicted value of a retirement account was \$1,699.58; however, at the 75th quintile, the predicted value was \$3,945.08. Likewise, the combined stock and retirement accounts at the 25th income quintile was \$5,650.18 compared to \$9,151.51 at the 75th income quintile.

[Insert Table 6 here]

The relationships between control variables and liquid assets were also examined (see Table 4, Model 5). As expected, young adults who were older, were enrolled in college, had a college degree or more, earned a higher quarterly income, recently became a new head of household, and owned their own homes accumulated significantly more liquid assets than their counterparts. Young adults accumulated significantly fewer liquid assets when they were female, non white, married, and lived in geographic regions other than the north east.

In sum, the financial products from a diverse portfolio were significantly related to young adults' accumulated liquid assets. Significant, negative interactions between savings, checking, and stock accounts and age suggested that the effects of these financial products on liquid asset accumulation diminished as young adults grew older; conversely, as young adults earned more income, the effects of these financial products on liquid asset accumulation increased. Likewise, as young adults grew older and earned more income, the effects increased.

Discussion

This research attempted to understand young adults' balance sheets through two avenues with 1996 SIPP data, with particular attention to the acquisition and role of a savings account. The first avenue emphasized the ownership of a diverse asset portfolio with financial products such as certificates of deposit, mutual funds, or other brokerage accounts, while the second considered the accumulated value of liquid assets.

Our first research question focused on factors that related to young adults' acquisition or take-up of a savings account. A majority of young adults either owned or did not own a savings account, with far fewer acquiring or closing a savings account over the course of the panel. At least descriptively speaking, these percentages suggested that account ownership may have been "sticky" and guided by inertia—the currently observed behavior was guided in part by the previously observed behavior (Thaler & Sunstein,

2009).⁷ If young adults' ownership and maintenance of a savings account is as constant as these results suggest and previous research confirms (Benartzi & Thaler, 2007; Friedline & Elliott, 2013; Friedline, Elliott, & Chowa, 2013; Madrian & Shea, 2001), then the initial acquisition of a savings account may be important for continued account ownership.

Given the apparent importance of inertia in savings account ownership, we explored factors that predicted young adults' acquisition of a savings account during the course of the panel. Race, employment status, home ownership, geographic region, and age were among the few significant predictors in the multinomial logit model comparing account acquisition to no account ownership. The relationships between these control variables and account acquisition were in the expected directions. For instance, non white young adults were less likely to acquire accounts than white young adults (Friedline & Elliott, 2011), whereas Asians were significantly more likely. While non whites were less likely to have a savings account to begin with, the fact that they were also less likely to acquire a savings account suggests they may experience continued exclusion from financial mainstream institutions, a finding consistent with previous research (FDIC, 2012; Shapiro, Meschede, & Osoro, 2013).

Young adults who were unemployed were less likely than those who were employed to acquire an account, suggesting that employment may be one path to account acquisition (Rhine & Greene, 2012). One reason for the link between young adult employment and the acquisition of a savings account may be

⁷ Very few young adults acquired or closed savings accounts, which can be explained in part by inertia or the "stickiness" of account ownership (Thaler & Sunstein, 2009). A question asking for predictors of young adults' savings account ownership logically preceded the question asking for predictors of account acquisition or the change from "no-to-yes"; however, it was not a primary focus of the research questions and is therefore described in this endnote and in Appendix B. Essentially, this question examined inertia by modeling savings account ownership as a dichotomous variable (yes = 1; no = 0), rather than changes like "no-to-yes" or "yes-to-no." Two generalized additive models (GAM) were performed to test for predictors of savings account ownership, with and without savings account ownership in the preceding quarter (Wood, 2004, 2006, 2011). The first GAM model predicted whether or not young adults owned a savings account, controlling for all relevant factors. The second GAM model predicted whether or not owning a savings account in one quarter predicted owning a savings account in the following quarter (lagged savings account), controlling for all relevant factors. Lagged savings account was a dominant predictor that depressed all other estimates and contributed an additional 56% to the variance in Model B. This finding provided some evidence to support the inertia of savings account ownership across time. Young adults who had a savings account in one quarter were significantly more likely to maintain that account in the following quarter.

that employers offer—if not mandate—direct deposit for paychecks. Employment thus may have helped to ensure that young adults acquired accounts, whereas unemployment made this acquisition less likely.

Our second research question asked whether ownership or acquisition of a savings account paved the way for a diverse asset portfolio. Consistently, young adults who owned a savings account appeared to also own other financial products more often and their savings account ownership preceded or coincided with the acquisition of other financial products. While few young adults had a diverse portfolio, meaning that few young adults owned a savings account in combination with other financial products (see Figure 4; Cooper, 2013; King & Leape, 1998), checking, stock, and retirement accounts were among the most commonly acquired products that were a part of a diverse portfolio. Taken together, it appears that a savings account may be one of the first financial products acquired as young adults ascend the financial hierarchy and may almost be considered a prerequisite of a diverse asset portfolio (Xiao & Anderson, 1997), which is one measure of a healthy balance sheet (Fabozzi, Gupta, & Markowitz, 2002).

Our third research question explored how much a savings account and a diverse asset portfolio contributed to the value of young adults' accumulated liquid assets. In addition to a savings account, we focused on the financial products most commonly owned by young adults—checking, stock, and retirement accounts. Given that a savings account was almost a prerequisite for the financial products that comprised a diverse portfolio, their relationships to liquid assets were seen as additive. That is, these financial products represented the added effects on liquid assets when combined with a savings account. Indeed, as young adults ascended the financial hierarchy and acquired stock and retirement accounts that represented long-term, higher-level needs, they also accumulated significantly more liquid assets. A savings or checking account alone contributed small amounts—respectively \$49.68 and \$40.34. Initially, it appeared that a retirement account was negatively related to accumulated liquid assets; however, when considered in light of increasing quarterly mean income, a retirement account contributed substantially to accumulated liquid assets. A retirement account contributed \$1,699.58 at the 25th income quintile and \$3,945.08 at the 75th income quintile. When combined with stocks, young adults accumulated \$5,650.18 at the 25th income quintile compared to \$9,151.51 at the 75th income quintile. This suggests that the

financial hierarchy that young adults ascend, in addition to helping diversify their portfolios (Xiao & Anderson, 1997; Xiao & Noring, 1994), may contribute to accumulated liquid assets.

Limitations

Findings from this research should be considered in light of several limitations. The measures included in this research were limited to those available from the 1996 SIPP and many contextual factors with potential relevance to young adults' balance sheets were not incorporated into the analyses, such as family history of financial socialization, availability of banks within a community, US economic growth during the 1990s, or the banking mergers and closures that took place during the late 1980s and early 1990s preceding the 1996 SIPP data collection (FDIC, 1997; Serido, Shim, Mishra, & Tang, 2010). While this research cannot rule out the relationships between these contextual factors with young adults' balance sheets, measuring changes in employment, education level, income, or household relationship provided some context. The 1996 SIPP data itself had some complexities, including over sampling lower income young adults resulting in less frequent savings account and asset diversification strategies and fewer assets compared to other surveys (Czajka, Jacobson, & Cody, 2003) and imprecise reporting of retrospective monthly or quarterly information resulting in excessive transitions between reference periods (also known as "seam bias"; Moore, Bates, Pascale, & Okon, 2009). While this research focused on the balance sheets of all young adults, those from lower income backgrounds are arguably at greater risk for financial fragility and, thus, an important subgroup of interest, mitigating concerns about the 1996 SIPP's over sampling. The concern about excessive transitions between reference periods—an artifact of the 1996 SIPP survey design—has been mitigated by using information from the fourth and last reference month of the quarter, a recommendation made by previous research (Ham, Li, & Shore-Sheppard, 2009; Moore, Bates, Pascale, & Okon, 2009). This meant using information from 12 quarters across the four-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. In

addition, while the large sample sizes in the 1996 were useful for modeling the occurrence of rare events like account acquisition and closure, such large sample sizes also unexpectedly ruled out many estimation methods. For example, we considered using median regression as an analytic technique for modeling IHS-transformed liquid assets among the topical module sample (Pence, 2006); however, after one week of processing, R had still not returned output on our preliminary model. To test whether median regression was possible with a smaller sample size, we re-ran the preliminary model with a reduced sample and, indeed, results were produced. Given the lengthy time to produce output with such large samples, median regression was ruled out as a possible analytic technique and we instead employed linear models using multilevel modeling and censored tobit regressions.

Concluding Policy Considerations

A first consideration for policy is with regard to automatic enrollment. Results show the persistence of young adults' account ownership in absence of automatic enrollment, providing some support for automatic enrollment as an important default for leveraging inertia with regards to a savings account (Benartzi & Thaler, 2007). In other words, in the absence of being automatically enrolled into a savings account, young adults' lack of a savings account may remain relatively stable unless interrupted by an external force like home ownership or employment that prompts them to acquire an account. Previous research has identified automatic enrollment as an important default, finding that nearly all participants open a savings account in research studies in which the default leverages inertia and makes participants opt out of account acquisition (Huang, Beverly, Clancy, Lassar, & Sherraden, 2013; Loibl, Kraybill, & DeMay, 2011; Nam, Kim, Clancy, Zager, & Sherraden, 2013).

A second consideration has to do with policies that encourage asset accumulation. A postsecondary education system built on debt (Assets and Education Initiative [AEDI], 2013), predatory mortgage lending practices (Agarwal, Amromin, Ben-David, Chomsisengphet, & Evanoff, 2013), an economic recession that reduced net worth and raised unemployment rates (Kochhar, Fry, & Taylor, 2011; Mishel, Bivens, Gould, & Shierholz, 2012), an expanding retail and service economy paying only minimum wage with few benefits (Aaronson, Agarwal, & French, 2012; Carré & Tilly, 2012),

and regressive tax policies that penalize individuals from accumulating assets (Cramer & Schreur, 2013) all contribute to the health of the balance sheet. The tax code represents one of the most extensive and publicly accepted policies for asset diversification and accumulation, with a majority of the President's \$536 billion 2015 budget for saving and asset accumulation allocated via the tax code (Black, 2014). However, the tax code disproportionately benefits those from upper income groups through subsidies on home ownership and retirement savings while neglecting those from certain groups who often lack such assets, like young adults (Cramer, Black, & King, 2012). Perhaps—in part—this is why we see a retirement account contribute such large predicted values in liquid asset accumulation as income quartiles increase. This “upside-down” asset policy via the tax code incentivizes and helps to maintain positions of financial advantage without necessarily helping young adults build assets (Woo, Rademacher, & Meier, 2010). Real and substantial policy change is needed to stimulate asset diversification and promote accumulation among young adults, particularly because their balance sheets of today may be an indicator of their financial security across the life course. While policy programs like Individual Development Accounts (IDA) and Child Development Accounts (CDAs) have been found to play important roles in the acquisition of a savings account and accumulation of assets (Boshara, 2012; Sherraden, 1991), policies are also needed that are broader in scope and simultaneously address issues like student loans, predatory lending, income, and unemployment.

A final consideration has to do with the implications of these results for young adults' balance sheets that also include debt and net worth. An underlying assumption of this research is that asset diversification and accumulation are desirable and perhaps even reliable indicators of a healthy balance sheet. While it is desirable for young adults to have opportunities to diversify their assets, diversification is not the only indicator of a healthy balance sheet, nor is it necessarily the outcome to which all young adults should strive. The composition of asset diversification and accumulated assets, debt, and net worth help to determine the health of the balance sheet. Balance sheets by their very nature are complex: they incorporate debt that include credit cards, vehicle loans, and mortgages of varying interest rates and policy terms and assets that include money market, stock, and retirement accounts of varying restrictions

and returns. As such, it is not enough to simply say that diversification and accumulation in and of themselves are indicators of a healthy balance sheet; where and how those diverse assets accumulate in comparison to debt also matter.

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Appendix A: 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; female; male).

Race. Young adults' race included those who were white, black, Asian (including Pacific Islander), and Native American / First Peoples (ERACE). Given the low percentage in the sample who were Native American / First Peoples and their very similar estimates in the models when compared to blacks, Native American / First Peoples were combined with blacks and identified as non white (non white; Asian; white).

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; not married).

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 (not enrolled; enrolled part-time; enrolled full-time).

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 eight, some high school education through grade 12, a high school degree, some college, or a four-year college degree or more (college degree or more; some college; high school degree; partial high school; primary school).

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; partially employed; not employed). Young adults' change in employment status was tracked by using monthly information retrospectively over one previous calendar year. Young adults who were employed or unemployed without change between months were considered to be consistently employed or unemployed, respectively. Changes in status were observed when young adults moved from employed to unemployed or unemployed to employed.

Quarterly mean income. Young adults' total earned income was available for a given month (TPEARN), 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.

Household relationship. 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 non-relative. The range of relationships were categorized into young adults who were listed as the reference person, child of the reference person, relative, or non-relative (reference person; child; relative; non-relative). 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% reported that they were relatives or non-relatives of the household reference person. The change in household relationship status tracked young adults quarterly and retrospectively over one previous calendar year, identifying whether young adults changed from being listed as a child, relative, or non-relative to a household reference. Approximately 3% 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 reference person “yes”; not a new reference person “no”).

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; owned = 1; rented or occupied = 0). Their responses were measured monthly. However, we also expected that the purchase or selling of a home could affect the amount of liquid assets available to young adults apart from simply being a home owner. If they recently purchased a home, young adults may have spent down their liquid assets to make a down payment or repairs. As such, we modeled whether the quarterly change in young adults’ home ownership over the previous preceding year related to their accumulated liquid assets (owned; purchased; sold; not a home owner).

Geographic region. The 1996 SIPP asked young adults in which state their household resided (TFIPSST). States were re-coded into geographical regions (south; north central; west; north east; Elliott, 2013). 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 eastern states included Connecticut, Maine, Vermont, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, and Rhode Island.

Appendix B: Generalized Additive Models Predicting Savings Account Ownership

	Model A		Model B	
	β	SE	β	SE
Sex: Male				
Female	0.265***	(0.009)	0.161***	(0.065)
Race: White				
Non White	-0.480***	(0.013)	-0.223***	(0.025)
Asian	-0.158***	(0.021)	-0.045***	(0.042)
Marital Status: Not married				
Married	0.610***	(0.011)	0.387***	(0.021)
College Enrollment: Full-Time Enrollment				
Part-Time Enrollment	-0.061**	(0.022)	0.054	(0.044)
Not Enrolled	-0.436***	(0.015)	-0.208***	(0.031)
Education Level: Primary school				
Some High School	0.209***	(0.031)	-0.029	(0.058)
High School Degree	0.965***	(0.028)	0.408***	(0.052)
Some College	1.362***	(0.028)	0.630***	(0.052)
College Degree or More	1.743***	(0.029)	0.815***	(0.054)
Employment Status: Employed				
Partially Employed	-0.237***	(0.018)	-0.230***	(0.036)
Not Employed	-0.522***	(0.021)	-0.382***	(0.038)
Household Relationship: Reference Person				
Child	-0.681***	(0.015)	-0.285***	(0.030)
Relative	-0.044***	(0.010)	0.060**	(0.020)
Non-Relative	-0.412***	(0.022)	-0.053	(0.048)
New Reference Person: False				
True	-0.119***	(0.024)	0.052	(0.045)
Change in Home Ownership: Not a Home Owner				
Home Owner	-0.593***	(0.009)	-0.286***	(0.018)
Geographic Region: North East				
West	-0.161***	(0.013)	-0.112***	(0.025)
North Central	-0.088***	(0.012)	-0.094***	(0.024)
South	-0.457***	(0.012)	-0.295***	(0.023)
Quarterly Mean Income Spline 1	8.157***	(8.957)	5.124***	(6.206)
Age Spline 1	8.612***	(8.788)	8.079***	(8.772)
Savings Account (Lagged)			5.081***	(0.016)
Constant	-0.026***	(0.034)	-2.464	(0.065)
R^2	0.203		0.764	

Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Notes. The results reported from this table are drawn from the reference month sample ($n = 311,446$ person-month observations; $n = 30,601$ individuals). Generalized additive models (GAM) were performed on savings account ownership (whether or not young adults had an account during the fourth reference month) with and without a

lagged account variable (Wood, 2004, 2006, 2011). The lagged account variable measured whether or not young adults owned a savings account in a preceding quarter. These models were used in order to determine how young adults acquired an account in the first place, as opposed to the more sensitive transition from "no-to-yes" measured by the multinomial logit models in Table 3. The question of predictors of account ownership logically preceded the question of account acquisition; however, account ownership was not a primary focus of this paper. Thus, the GAM results were provided here in the appendix. As can be seen, in the differences in estimates between Models A and B, the lagged savings account was a dominant predictor that depressed all other estimates and contributed an additional 56% to the variance in Model B. This finding provided some evidence to support the "stickiness" of savings account ownership across time. Young adults who had a savings account in one quarter were significantly more likely to maintain that account in the following quarter.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 1: Sample Characteristics ^a

Covariates	Reference Month Sample (<i>n</i> = 30,601) Mean (SD) / %	Topical Module Sample (<i>n</i> = 36,415) Mean (SD) / %
Sex		
Male	52	54
Female	48	46
Race		
White	82	82
Non White	14	14
Asian	4	4
Marital Status	50	50
Married	50	50
Not married		
College Enrollment		
Full-Time Enrollment	13	13
Part-Time Enrollment	5	5
Not Enrolled	82	82
Education Level		
Primary School	3	3
Some High School	11	10
High School Degree	33	33
Some College	32	33
College Degree or More	21	21
Employment		
Employed	72	65
Partially Employed	6	21
Not Employed	22	14
Household Relationship		
Reference Person	43	47
Child	22	20
Relative	31	29
Non-Relative	4	4
New Reference Person		
Yes	3	3
No	97	97
Home Ownership		
Home Owner	59	56
Not Home Owner	31	44
Geographic Region		
North East	18	18
West	22	22
North Central	25	25
South	35	35
Monthly Earned Income	\$1,695 (\$2,278)	\$2,194 (\$2,644)

Age	31.889 (5.600)	29.760 (6.626)
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Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Notes. Means and standard deviations are reported for continuous variables and percentages are reported for categorical variables. ^aThe sample characteristics reported from this table are drawn from reference month data ($n = 311,446$ person-month observations; $n = 30,601$ individuals) and topical module data ($n = 36,415$ individuals).

Table 2: Savings Account, Asset Diversification, and Accumulation Characteristics ^a

Covariates	Reference Month Sample (<i>n</i> = 30,601) Mean (SD) / %	Topical Module Sample (<i>n</i> = 36,415) Mean (SD) / %
Percentage of Savings Account and Financial Products that Comprise a Diverse Portfolio ^b		
Savings Account	43	46
Checking Account	24	24
CD Account	5	5
Money Market Account	5	5
Savings Bond Account	11	11
Stock Account	15	15
Retirement Account	24	25
Value of Accumulated Liquid Assets ^c	--	\$6,328 (\$79,498)

Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Notes. Percentages are reported for categorical variables and medians and standard deviations are reported for continuous variables. ^aThe characteristics reported from this table are drawn from the reference month sample (*n* = 311,446 person-month observations; *n* = 30,601 individuals) and the topical module sample (*n* = 36,415 individuals). ^bPercentages for savings account and asset diversification strategies are presented for young adults who ever reported owning these account types during the course of the panel using monthly level information. ^cAccumulated liquid assets are presented for young adults based on annual level information. The accumulated mean value of liquid assets is reported only for young adults that held liquid assets greater than \$0 and after the value was winsorized.

TOWARD HEALTHY BALANCE SHEETS

Table 3: Multinomial Logit Regression Models of Quarterly Change in Savings Ownership, Acquisition, and Closure compared to No Savings Account Ownership ^a

	Model 1		Model 2		Model 3	
	No Account Ownership v. Account Ownership		No Account Ownership v. Account Acquisition		No Account Ownership v. Account Closure	
	β	SE	β	SE	β	SE
Sex: Male						
Female	0.101***	(0.008)	0.005	(0.022)	0.022	(0.022)
Race: White						
Non White	-0.925***	(0.013)	-0.349***	(0.033)	-0.404***	(0.033)
Asian	-0.133***	(0.021)	0.132*	(0.054)	0.079	(0.055)
Marital Status: Not Married						
Married	0.010	(0.009)	0.009	(0.024)	0.064**	(0.024)
School Enrollment: Full Time						
Enrolled Part Time	0.006	(0.021)	-0.015	(0.059)	0.020	(0.060)
Not Enrolled	-0.005	(0.014)	-0.022	(0.037)	0.015	(0.038)
Education Level: Primary School						
Partial High School	-0.019	(0.025)	-0.048	(0.068)	-0.000	(0.070)
High School	-0.015	(0.023)	-0.020	(0.062)	0.013	(0.064)
Partial College	-0.022	(0.023)	-0.081	(0.063)	0.013	(0.065)
College	-0.017	(0.024)	-0.071	(0.066)	-0.025	(0.067)
Employment Status: Employed						
Partially Employed	0.025	(0.018)	0.011	(0.048)	0.064	(0.050)
Not employed	0.026	(0.027)	-0.155*	(0.071)	0.187*	(0.077)
New Reference Person: No						
Yes	0.011	(0.009)	-0.005	(0.023)	0.005	(0.023)
Home Ownership: Not a Home Owner						
Home Owner	0.138***	(0.025)	-0.663***	(0.046)	-0.571***	(0.049)
Geographic Region: North East						
West	-0.277***	(0.013)	-0.047	(0.034)	-0.008	(0.035)
North Central	0.019	(0.012)	-0.044	(0.034)	0.045	(0.035)
South	-0.419***	(0.012)	-0.287***	(0.032)	-0.204***	(0.033)
Quarterly Mean Income Spline 1	-12.464	(6.451)	10.960	(19.520)	90.076	(73.601)
Quarterly Mean Income Spline 2	-11.984	(6.428)	11.093	(19.463)	90.891	(73.507)
Quarterly Mean Income Spline 3	-12.048	(6.434)	10.892	(19.479)	90.958	(73.537)
Quarterly Mean Income Spline 4	-11.962	(6.386)	11.233	(19.350)	90.491	(73.264)
Quarterly Mean Income Spline 5	-13.322	(7.128)	10.924	(21.381)	98.168	(78.896)
Age Spline 1	1.130**	(0.375)	-4.700***	(1.040)	-2.648*	(1.036)
Age Spline 2	-1.948***	(0.205)	-1.507*	(0.595)	-0.261	(0.599)
Age Spline 3	-0.523*	(0.231)	-1.304*	(0.665)	-0.232	(0.672)
Age Spline 4	-0.228	(0.199)	-1.314	(0.580)	-0.041	(0.586)

Age Spline 5	-0.079	(0.259)	-1.671*	(0.751)	-0.195	(0.756)
Constant	12.638***		-12.089		-93.451	
	-0.277***		-0.047		-0.008	
Log Pseudolikelihood	-248,450.850					
Wald Chi Square	18,224.530					
Degrees of Freedom	81					
<i>N</i> = Person-Month Observations	280,845					
<i>N</i> = Individual Clusters	29,585					

Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Notes. Listwise deletion of missing data was used and reduced the original sample of 311,446 person-month observations to 280,845 and 30,601 individuals to 29,585, respective reductions of 10% and 3%. ^a No savings account ownership “no-no”; Savings account ownership “yes-yes”; Savings account acquisition “no-to-yes”; Savings account closure “yes-to-no.” Robust standard errors, clustered by individual, are reported in parentheses. β = regression coefficient; *SE* = Robust standard error.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 4: Models Predicting Liquid Assets (IHS Transformed; $N = 36,415$)

	Model 4		Model 5		Model 6	
	Multilevel Model w/ Individual Random Effects		Multilevel Model w/ Individual Random Effects		Censored Tobit Regression w/ Individual Random Effects	
	β	SE	β	SE	β	SE
Financial Products from a Diverse Asset Portfolio						
No Account of Any Kind	-3.479***	(0.035)	-3.382***	(0.035)	-8.852***	(0.074)
Savings Account	0.272***	(0.030)	2.956***	(0.098)	2.274***	(0.185)
Checking Account	0.093***	(0.026)	0.517***	(0.122)	0.499*	(0.193)
Stock/Mutual Fund Account	2.102***	(0.043)	3.178***	(0.188)	2.259***	(0.293)
Retirement Account	4.576***	(0.031)	-0.808***	(0.161)	-1.225***	(0.248)
Stock and Retirement Account	-1.094***	(0.057)	-1.859***	(0.313)	-1.043*	(0.460)
<hr/>						
Age			0.023***	(0.002)	-0.013*	(0.006)
Sex: Male						
Female			-0.082***	(0.022)	-0.23***	(0.045)
Race: White						
Non White			-0.266***	(0.031)	-0.409***	(0.073)
Asian			-0.037	(0.055)	-0.011	(0.112)
Marital Status: Not Married						
Married			-1.437***	(0.022)	-3.008***	(0.045)
College Enrollment: Not Enrolled						
Part-Time Enrollment			0.140***	(0.036)	0.248***	(0.061)
Full-Time Enrollment			0.319***	(0.030)	0.660***	(0.059)
Education Level: Primary school						
Some High School			-0.113	(0.064)	0.568***	(0.209)
High School Degree			-0.067	(0.060)	0.987**	(0.197)
Some College			0.067	(0.061)	1.289***	(0.197)
College Degree or More			0.476***	(0.064)	1.890***	(0.199)
Employment Status: Not Employed						
Partially Employed			0.107***	(0.030)	0.289***	(0.067)
Employed			0.206***	(0.032)	0.493***	(0.070)
Quarterly Mean Income/1,000			0.039**	(0.013)	0.238***	(0.028)
New Reference Person: False						
True			0.113*	(0.044)	0.170*	(0.079)
Change in Home Ownership: Not Home Owner						
Owned			0.150***	(0.021)	0.407***	(0.043)
Purchased			0.022	(0.039)	0.167*	(0.068)
Sold			0.032	(0.046)	0.084	(0.085)

Geographic Region: North East						
West			-0.214***	(0.032)	-0.430***	(0.066)
North Central			-0.141***	(0.032)	-0.262***	(0.063)
South			-0.218***	(0.030)	-0.465***	(0.061)
<hr/>						
Interactions of Financial Products with Age						
Savings Account			-0.091***	(0.003)	-0.056***	(0.006)
Checking Account			-0.015***	(0.004)	-0.010	(0.006)
Stock Account			-0.033***	(0.006)	-0.021*	(0.010)
Retirement Account			0.147***	(0.005)	0.197***	(0.008)
Stock and Retirement Accounts			0.032**	(0.010)	-0.021**	(0.014)
<hr/>						
Interactions of Financial Products with Quarterly Mean Income /1,000						
Savings Account			0.076***	(0.014)	-0.044	(0.023)
Checking Account			0.057***	(0.014)	0.024	(0.022)
Stock Account			0.048*	(0.024)	-0.082*	(0.037)
Retirement Account			0.315***	(0.019)	0.163***	(0.029)
Stock and Retirement Accounts			-0.231***	(0.031)	-0.077	(0.046)
<hr/>						
Constant	3.686***	(0.033)	1.915***	(0.103)	0.580*	(0.285)
Random Effects (σ)						
Residual	2.15		2.13		2.13	
Individual Effect	1.69		1.41		1.41	
ICC	0.381		0.305		0.540	

Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Notes. β = regression coefficient; SE = Robust standard error.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 5: Predicted Values in US Dollars of the Contributions of a Diverse Asset Portfolio to Accumulated Liquid Assets (IHS Transformed; $N = 36,415$)

	Model 4	Model 5
	Multilevel Model w/ Individual Random Effects (Financial Products Only Model)	Multilevel Model w/ Individual Random Effects (Full Model)
Financial Products from a Diverse Asset Portfolio:		
No Account of Any Kind	\$0.21	\$0.95
Savings Account	\$26.15	\$49.68
Checking Account	\$21.86	\$40.34
Stock Account	\$163.04	\$329.50
Retirement Account	\$1,937.09	\$1,992.07
Stock and Retirement Accounts	\$5,302.87	\$5,283.05

Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Notes. Predicted values were calculated by back-transforming the IHS transformation of accumulated liquid assets into real dollars.

Table 6: Predicted Values in US Dollars of the Contributions of a Diverse Asset Portfolio to Accumulated Liquid Assets by Quintiles of Age and Quarterly Mean Income (IHS Transformed; $N = 36,415$)

	Model 5					
	Multilevel Model w/ Individual Random Effects (Full Model)					
	Age Quintiles			Income Quintiles		
	25th	50th	75th	25th	50th	75th
Financial Products from a Diverse Asset Portfolio:						
No Account of Any Kind	\$0.77	\$0.96	\$1.16	\$0.89	\$0.93	\$0.99
Savings Account	\$73.41	\$48.88	\$32.54	\$43.11	\$47.75	\$54.03
Checking Account	\$94.09	\$57.27	\$34.85	\$47.28	\$55.07	\$66.20
Stock Account	\$854.12	\$465.66	\$253.87	\$390.45	\$451.16	\$537.13
Retirement Account	\$1,830.75	\$2,938.81	\$4,717.53	\$1,699.58	\$2,489.15	\$3,945.08
Stock and Retirement Accounts	\$4,900.80	\$7,790.85	\$12,385.20	\$5,650.18	\$7,030.04	\$9,151.51

Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Notes. Predicted values were calculated by back-transforming the IHS transformation of accumulated liquid assets into real dollars.

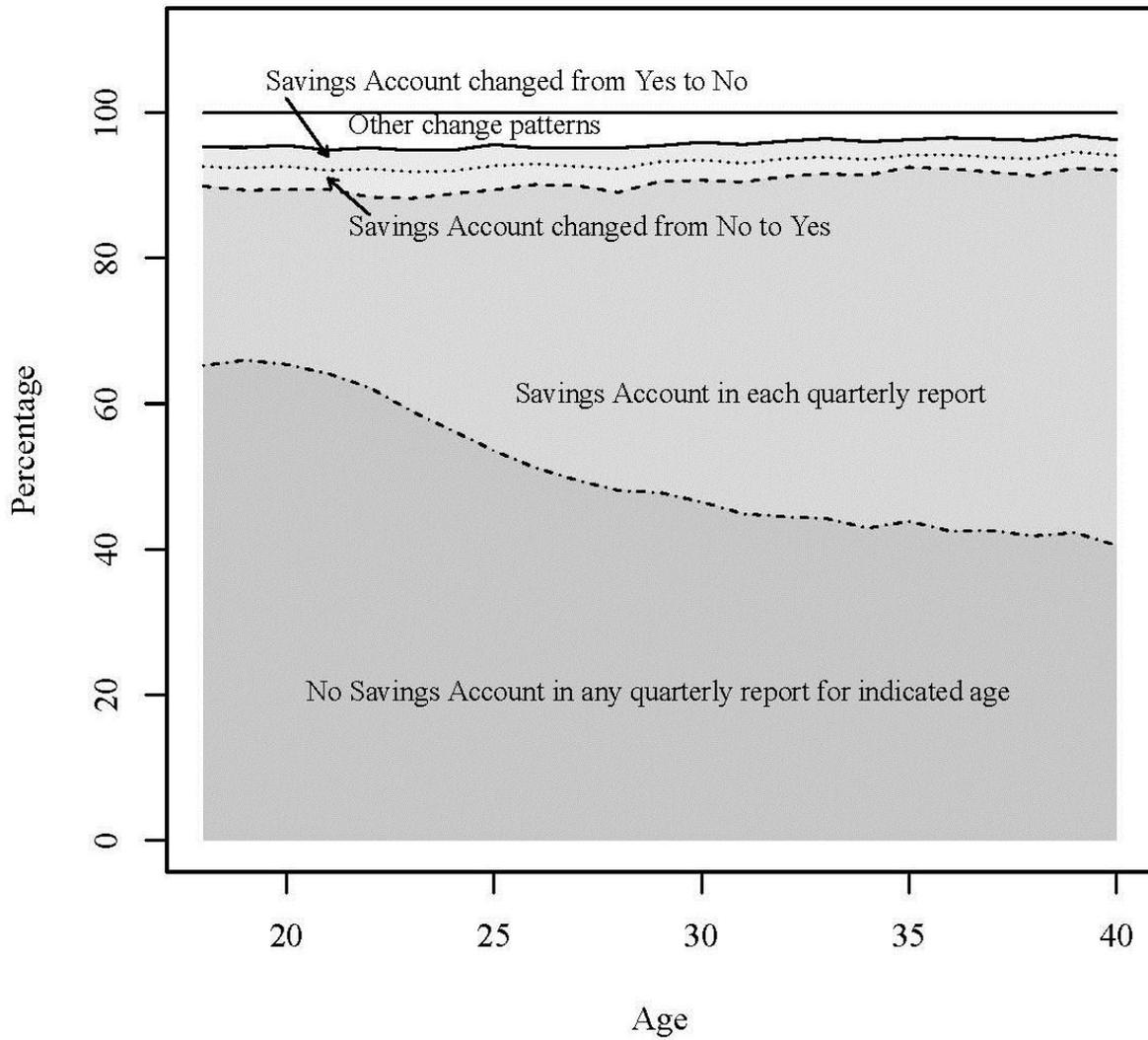


Figure 1. Percentage of Savings Account Ownership, Acquisition, and Closure by Young Adults' Age. *Source:* Unweighted data from the 1996 Survey of Income and Program Participation (SIPP). *Note.* The information in this table was produced with person-month and individual observations ($n = 311,446$ person-month observations; $n = 30,601$ individuals).

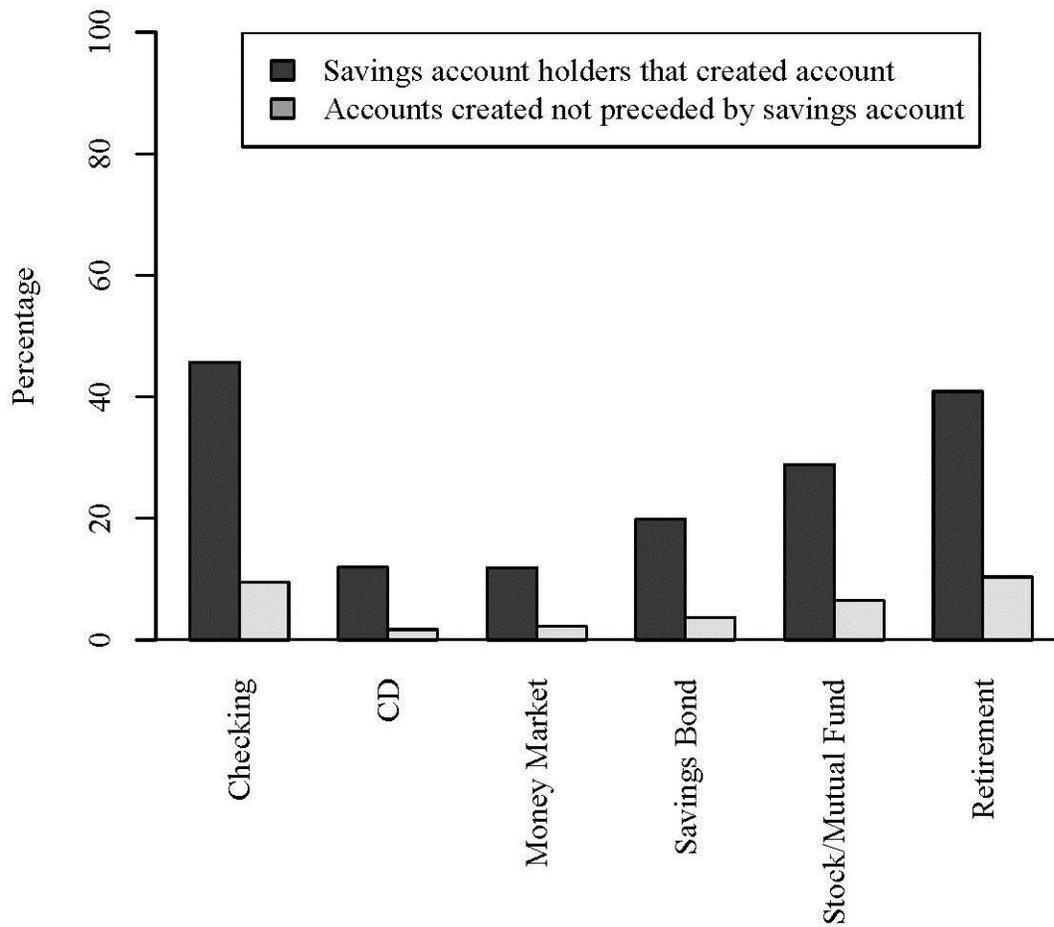


Figure 2. Percentage of Young Adults with a Savings Account who also Owned Other Financial Products.
Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).
Note. The information in this table was produced with person-month and individual observations ($n = 311,446$ person-month observations; $n = 30,601$ individuals).

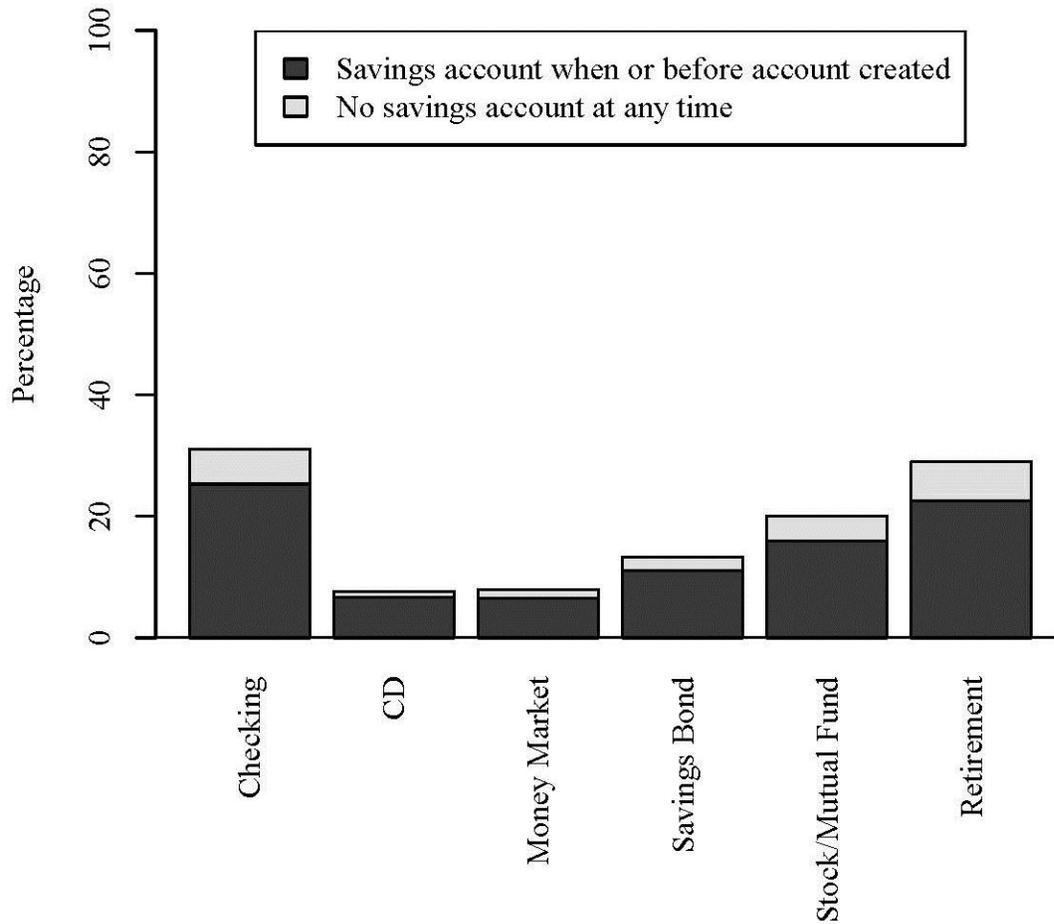


Figure 3. Percentage of Young Adults who Acquired Financial Products in Coincidence with or Preceded by a Savings Account.

Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Note. The information in this table was produced with person-month and individual observations ($n = 311,446$ person-month observations; $n = 30,601$ individuals).

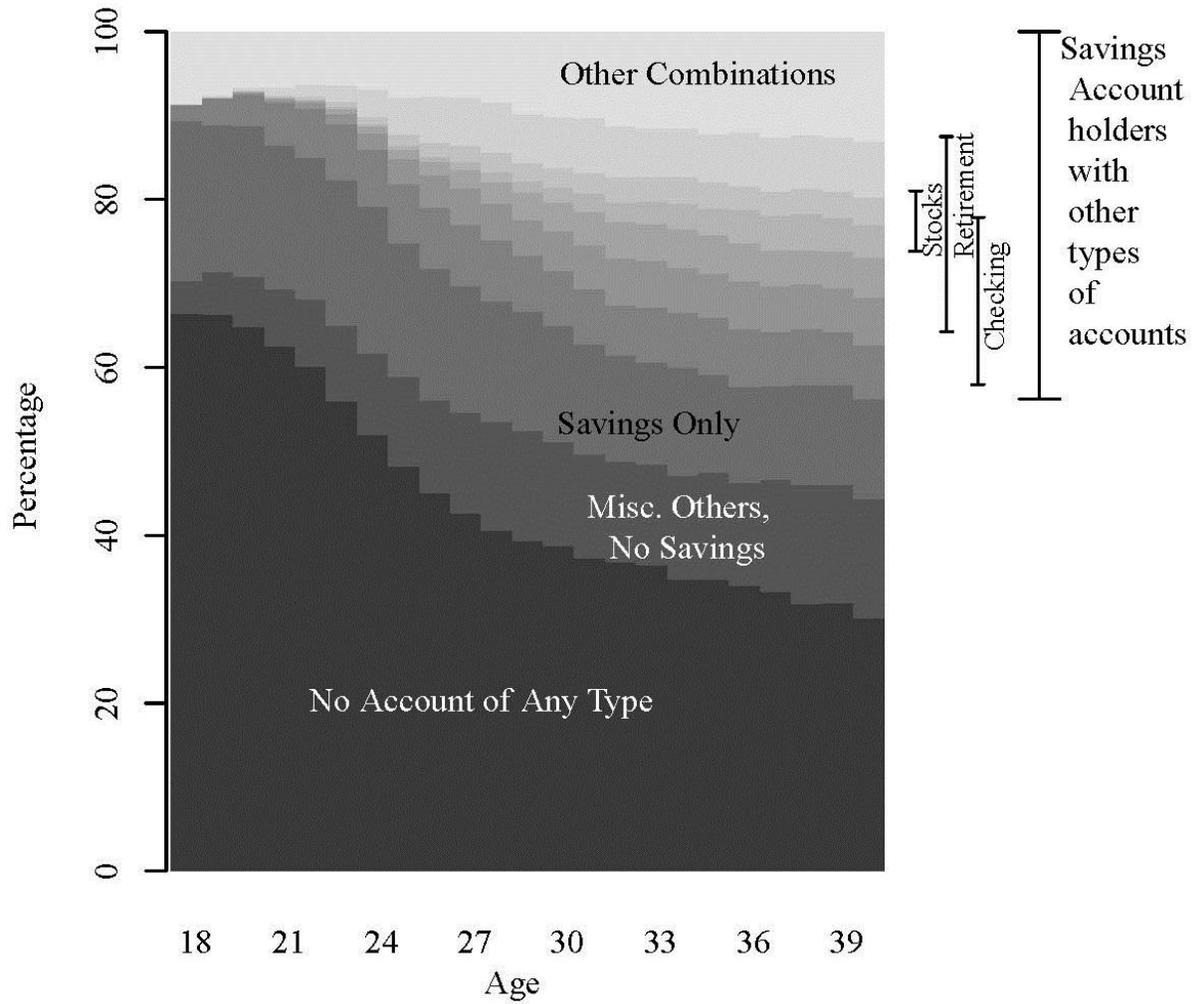


Figure 4. Percentage of Young Adults' Savings Account Ownership in Combination with Financial Products by Age.

Source: Unweighted data from the 1996 Survey of Income and Program Participation (SIPP).

Note. The information in this table was produced with person-month and individual observations ($n = 311,446$ person-month observations; $n = 30,601$ individuals).