

Savings Account Ownership During the Great Recession

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Abstract In the aftermath of the Great Recession, a substantial number of families were left financially at risk, especially those with lower income, less wealth, fewer years of education, and unstable employment. This study examined how families responded to the financial stresses of the Great Recession and found that families who were working age, had higher levels of education, and had become non-homeowners were more likely to maintain or open a basic savings account; whereas families who had lost a substantial amount of annual family income or wealth or were Black or Hispanic were more likely to have been without a savings account over the period. Insights from this study will help inform policy-makers and others interested in encouraging family financial security and resiliency through basic savings accounts.

Keywords Basic savings accounts · Savings account ownership · Family financial security · Great Recession

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Introduction

The Great Recession had a profound effect on a substantial number of families, with almost two-thirds of all US families having lost wealth. By the end of the recession, the median loss was 18 % of the level of wealth in 2007 (Bricker et al. 2012b). Lusardi et al. (2011) described families most vulnerable to the recession as being larger, having fewer years of education, lower income, and in spells of unemployment. Recent studies have shown that a fairly large proportion of families hold an insufficient amount of funds to buffer against income volatility, extraordinary expenses, or emergencies. For example, Brooks et al. (2014) found that 44 % of all US families were liquid-asset poor. For these families, accumulated savings fell short of covering at least 3 months of a family's poverty-level income. Similarly, 25 % of middle-income families and 67 % of non-White families were identified as being liquid-asset poor. Overall, the authors described the majority of liquid-asset poor families as being white (59 %), employed (89 %), and having at least some college (48 %). Clearly, financial insecurity was not exclusively a lower-income family issue.

We consider basic savings accounts as an important asset for helping many families establish and maintain financial stability and resiliency. Funds held in a basic savings account can be easily accessed by families to cushion against financial risks and uncertainties or generally fill the gap between income and expenses when needed. These accounts can also serve as a pathway to other, more sophisticated savings and investment products that contribute to a family's economic mobility, financial security, and economic well-being (Friedline et al. 2014).

Of course, there may be reasons why certain families refrain from holding funds in a basic savings account.

Some families, for example, may cover emergency or unexpected obligations using funds drawn elsewhere such as checking accounts or lines of credit. Although owning a basic savings account may not be the only way to gain access to liquid funds, for many families it is a straightforward way to build up and easily access liquid funds when needed. This may be particularly true for lower-income families who need a simple, low cost, safe way to accumulate a savings buffer for emergencies, unexpected expenses, and other contingencies.

This study examined how families responded to the financial stresses of the Great Recession in terms of basic savings account ownership using the 2007–2009 panel of Survey of Consumer Finances (SCF). For this analysis, we were particularly interested in identifying how a family's financial circumstances, behaviors, and attitudes, and changes in numerous attributes influenced their decisions about savings account ownership over this period. Because of the potential benefits to families who used savings accounts as part of their strategy to create a financial buffer against emergency or unexpected financial situations, we believe the insights from this research will help inform policymakers and others interested in encouraging family security and resiliency through these products.

Motivations for Saving

Questions related to why families may save have a long history in the economics literature. Theory suggests that families faced with uncertainty will lower consumption and accumulate precautionary savings to self-insure against potential financial risks (Leland 1968). Under these circumstances, families spend less and save more of their total income during some periods and then draw on these savings when expenses in other periods are greater than family income. From a broader perspective, families may accumulate liquid savings to reserve against a myriad of potential financial risks.

Buffer-Stock Saving

Empirical studies that use a buffer-stock theoretical framework of saving provide insight into analyzing patterns of saving. Deaton (1991) and Carroll (1997) employed an intertemporal model of consumption behavior under uncertainty to describe consumers as having a target wealth-to-income ratio that determines the buffer-stock of wealth held to insure against risk and uncertainty. Given the level of uncertainty and tolerance for risk, a family chooses to hold a targeted amount of accumulated savings (wealth) as a precaution against future financial shocks

(e.g., loss of employment, death or illness of family member, or unexpected expenses).

This savings model aligns fairly well with the savings recommendations of financial planners (Carroll 1997) and others. The National America Saves Program (2010) has suggested that families hold at least \$500–\$1000 in a savings account for emergency purposes. Similarly, many financial planners have recommended that families hold a financial reserve in a liquid savings account (i.e., a buffer stock of saving) equivalent to 3–6 months' worth of expenses as a precaution against financial uncertainty and risk (e.g., Greninger et al. 1996; Winger and Frasca 2008). Drawing on the Consumer Expenditure Survey (US Department of Labor 2010), families in the lowest income quintile in 2007 had a net average monthly expense of roughly \$1706, which translates to a financial reserve that ranges from \$5118 to \$10,236, for a 3–9 month reserve. In 2009, \$5403 was needed for a three-month cushion and \$10,806 was needed for a 6-month cushion. Leonard and Di (2014) found that asset accumulation at or above levels equal to 9 months' worth of income at the income-poverty level was important for improving a family's odds of escaping asset poverty. In 2007, when families in the lowest-income quintile were asked how much savings they believe they needed for emergencies and other contingencies, the median response was \$2000, a value substantially less than what is needed to cover three months of expenses (Bucks et al. 2009).

Life-Cycle Consumption and Savings Decisions

Another way of thinking about why people save draws on the life-cycle hypothesis of consumption (Modigliani and Brumberg 1954), saving (Ando and Modigliani 1963) and the formulation of risk and uncertainty into consumer decision making (Kahneman and Tversky 1979). In this case, consumers base their consumption and saving decisions on reference points in time rather than on a longer (permanent) time horizon.

Behavioral economics teaches that consumers construct mental accounts for multiple savings motives that may differ, depending on the consumer's position in their life-cycle savings horizon (Thaler 1999). That is, where a person is in his or her life influences which savings motives hold the most importance. Basic savings accounts are a financial tool families can use to operationalize certain mental accounts, whereby funds are held for specific reasons such as covering emergencies, protecting against negative health events, buying a home, or building a college fund.

Thaler and Shefrin (1981) considered an individual as being both a farsighted planner and a shortsighted action taker. Failure to meet long-term goals can arise if self-

control is inconsistent with the shortsighted actions needed to meet these goals. As an example, a family may desire (farsighted planner) to establish a financial cushion but may not have the self-discipline or habit (shortsighted action) to consistently save over time. In this case, establishing external constraints, such as automatic saving, can be used to help align shortsighted behavior to longer-term goals. Another example is the Pay Yourself First recommendation made by financial counselors and planners. For this example, a family makes saving a budget priority above other financial obligations. By making this commitment to saving, a family also is motivated to manage better other monthly bills and expenses. Although saving is likely more challenging for lower-income families, Hogarth and Anguelov (2003) showed that at least a portion of lower-income families can and do save. Using precommitments such as these may be particularly relevant when the benefits and costs are experienced in different time frames (Cole et al. 2008).

Data

The Survey of Consumer Finances (SCF) is a triennial survey of US families sponsored by the Board of Governors of the Federal Reserve System. A panel covering the 2007–2009 period was implemented to provide a more complete picture of the effect that the financial crisis and consequent recession had on households across the nation. This two-year panel tracked how the financial crisis changed the monetary value of specific types of assets, debts, and economic conditions of families and traced some of the decisions and expectations of families during this period (Bricker et al. 2012b).

Consistent with earlier SCF data, an imputation method was employed to fill any gaps in information collected for the 2007–2009 panel. As Kennickell (1998) explained, a multiple imputation method was used to create the public SCF data to provide as much information as possible while protecting the identity of respondents and their families. Missing data in the combined 2007 and 2009 surveys were imputed where data originally missing in 2007 were re-imputed conditional on the 2009 data. A repeated imputation inference (RII) technique was used on the five implicates of this panel (Kennickell 2011). In doing so, the standard errors estimated more closely represented the true sampling standard errors than would be obtained if using any one implicate.

For this study, we analyzed family holdings of savings accounts over the two periods while taking into account a family's economic characteristics and demographic attributes as well as financial attitudes and behaviors. The respondent was the most financially knowledgeable person

in the family and is not necessarily the head of house. The 2007 survey respondent, spouse, or partner of the respondent was interviewed in 2009. The re-interview response rate of the 2009 survey was 89 %. This resulted in a working sample of 3857 families (imputed five times for a weighted total implicate sample of 19,285), representing more than 113 million families nationwide in 2007. Family was the primary unit of analysis in this study and the terms family and household were used interchangeably.

As discussed by Kennickell (2010), a small proportion of families with the lowest income or younger age were somewhat harder to locate in the 2009 period of the panel. A few respondents also had deceased or moved abroad between 2007 and 2009, categorizing them as being out of scope for the panel. And, there were a few respondents who declined to be re-interviewed or could not be located. Nonresponse-adjusted weights were used to take into account nonresponse and oversampling, thereby providing unbiased population estimates (Bricker and Bucks 2013; Hogarth et al. 2004; Kennickell 2010).

The descriptive statistics for the variables in the weighted sample are reported in Table 1. In 2007, 46 % of all families had a basic savings account. By 2009 the proportion increased to 50 %. While there was an increase in the proportion of families with account ownership over this period, roughly half of all families remained without a basic savings account. As of the 2010 SCF survey, the share of families with a savings account remained at about half (Bricker et al. 2012a).

An important point about the 2007–2009 SCF panel is that the dollar value of savings is aggregated from several liquid accounts, including basic (traditional or passbook) savings accounts, money market, Coverdell/education/IRA/529/state-sponsored education account, health/medical savings account, and sweep/cash accounts. It is, however, impossible to isolate the funds held by families only in basic savings accounts. Despite this, we believe that basic savings account ownership is the correct focus for this analysis. It is a practical baseline account measure for a family's ability to establish and maintain resilience and stability; whereas, the dollar volume, by its nature, will likely fluctuate in response to a family's need to smooth consumption. The use of basic savings funds to smooth consumption is evidenced in recent research from the US Financial Diaries (2015), which found that, while households do save in a basic account, these funds tend to be drawn down for near-term, smaller emergencies. As a consequence, savings observed may tend to be either built up or drawn down, depending on whether or not funds were withdrawn for any reason such as an unexpected expense.

As reported in Table 1, average family income fell by 9.3 % and average non-liquid wealth dropped 17 % over the sample period. Family income shifted downward at all

Table 1 Descriptive statistics

Name	2007	2009
<i>Economic characteristics</i>		
<i>Savings account ownership</i>		
Savacct	0.46	0.50
<i>Annual family income</i>		
Faminc (mean)	\$89,126	\$80,839
Faminc (median)	\$50,054	\$49,810
Q1_Faminc	≤ \$29,819	≤ \$26,898
Q2_Faminc	\$29,820–\$57,509	\$26,899–\$53,795
Q3_Faminc	\$57,510–\$106,498	\$53,796–\$98,624
Q4_Faminc	\$106,499–\$377,108	\$98,625–\$249,051
Q5_Faminc	≥ \$377,109	≥ \$249,052
<i>Annual family non-liquid wealth</i>		
Non-LiquidWealth (mean)	\$671,756	\$557,386
Non-LiquidWealth (median)	\$282,718	\$238,900
Q1_NonliqWealth	≤ \$42,180	≤ \$44,000
Q2_NonliqWealth	\$42,180–\$282,718	\$44,001–\$238,900
Q3_NonliqWealth	\$282,719–\$780,323	\$238,901–\$657,000
Q4_NonliqWealth	\$780,324–\$4,957,406	\$657,001–\$3,863,130
Q5_NonliqWealth	≥ \$4,957,407	≥ 3,863,131
<i>Home ownership</i>		
OwnHome	0.69	0.70
<i>Liquid assets</i>		
Liqassets	0.25	0.26
<i>Work status</i>		
Employ	0.69	0.64
<i>Education</i>		
No high school	0.13	0.12
High school	0.32	0.32
Some college	0.19	0.19
College	0.36	0.37
<i>Health insurance</i>		
HaveIns	0.80	0.79
<i>Demographic attributes</i>		
<i>Age groups</i>		
Age30	0.15	0.11
Age40	0.19	0.18
Age54	0.30	0.30
Age64	0.17	0.18
Age65	0.20	0.22
<i>Race/ethnicity*</i>		
White	0.71	0.71
Black	0.13	0.13
Hispanic	0.12	0.12
Asian_Other	0.04	0.04
<i>Marital status</i>		
Married	0.60	0.53
<i>Children in family</i>		
Children	0.86	0.85
<i>Financial attitudes/behaviors</i>		

Table 1 continued

Name	2007	2009
<i>Risk taking</i>		
HighRisk	0.28	0.20
<i>Planning horizon</i>		
St_Planner	0.21	0.19
<i>Shopping for credit</i>		
Little_Noshop	0.75	0.70
Sample size	19,285	19,285

The descriptive statistics are calculated from the weighted sample of five implicates. 2007 and 2009 family income and non-liquid wealth are in 2009 US dollars

Source 2007–2009 Survey of Consumer Finances

* Respondents were asked about their race and ethnicity only in 2007

quintiles between the two periods. A similar pattern is shown for non-liquid wealth, with the exception of the lowest quintile. Measuring these income and wealth values in quintiles allowed us to examine how distinctive family income and wealth levels affect savings account ownership over the 2007–2009 period. In addition, the results are not going to be heavily influenced by extremely large values in the top quintile. Table 1 also shows that the proportion of families holding other liquid assets, including money market accounts, certificates of deposit, and brokerage call accounts, increased only slightly from 25 to 26 % by 2009. The next section discusses the four possible savings account ownership outcomes between 2007 and 2009.

Savings Account Ownership Outcomes

The 2007–2009 SCF panel data allows us to track basic savings account ownership over two periods. As shown in Table 2, there are four possible account ownership outcomes. One outcome is where a family decided to hold a basic savings account in both periods. In this study, we found that 31 % of the families held a savings account over the two periods. This contrasts with a second outcome where 35 % of families were without a basic savings account in both periods. In a third outcome, a family owned a savings account in 2007 and did not have an account by 2009. Our data show that 15 % of families had closed their basic savings account by 2009. And a last outcome, where

19 % of families did not own a basic savings account in 2007 but had opened one by 2009. The sample proportion of each of the four outcomes represented the baseline probability that a family fell into one of these four scenarios by the end of 2009. As an example, on average, the likelihood of having a basic savings account in both periods was 31 %.

Financial, Demographic, and Behavior Changes

One of the most prominent effects of the Great Recession was the substantial loss of wealth by a majority (63 %) of families in the US (Bricker et al. 2012b). McKernan et al. (2013) further showed that the wealth loss was disproportionately experienced by Hispanic families who lost 40 % of wealth and Black families who lost 31 % of wealth, while White families lost about 11 % of wealth over the recession. In the aggregate, housing prices dropped by close to one third. Stock prices also fell, with the Dow Jones Index plunging by nearly half of its 2007 value. During this period, national unemployment doubled from 5 % at the end of 2007 to 10 % by October 2009. Deflated home and stock values, coupled with unstable employment, created an uncertain and insecure environment for many American families (Pfeffer et al. 2013). As a result of these experiences, many families emerged from the Great Recession with much more caution and restraint (Bricker et al. 2012b).

Table 2 Basic savings account ownership: 2007–2009

	2007	2009
Total sample (N = 19,285)	Savings account	No savings account
Savings account (n = 8820)	31 % (n = 5980)	15 % (n = 2890)
No savings account (n = 10,415)	19 % (n = 3665)	35 % (n = 6750)

The descriptive statistics are calculated from the weighted sample of five implicates

Source 2007–2009 Survey of Consumer Finances



Table 3 Families experiencing financial, demographic, and behavior changes during the great recession: 2007–202009

	Proportion of families
Financial changes	
<i>Non-liquid wealth losses</i>	
W_Loss10	12.5
W_Loss1025	16.9
W_Loss2550	18.4
W_Loss50	17.2
<i>Family income losses</i>	
I_Loss10	14.1
I_Loss1025	13.0
I_Loss2550	13.6
I_Loss50	8.9
<i>Employment status changes</i>	
Emp0709	59.5
Lostjob_Unemp09	4.8
Lostjob_NILF09	4.9
Unemp0709	1.3
Gainjob_Unemp07	1.4
NILF0709	25.4
Gainjob_NILF07	2.7
<i>Other financial changes</i>	
IncShort	10.7
HomeLoss	2.5
NoIns	9.8
<i>Demographic & behavioral changes</i>	
NoMarried	8.2
St_Lt_Planner	17.7
Became_Shopper	4.0
Sample size	19,285

The descriptive statistics are calculated from the weighted sample of five implicates

Source 2007–2009 Survey of Consumer Finances

Of particular interest to this study was how many of these conditions may have affected the savings account holdings of families over the 2007–2009 period. We developed four measures to account for declines in non-liquid wealth and family income, respectively. As shown in Table 3, non-liquid wealth and family income may have fallen by up to 10 % (W_Loss10 and I_Loss10), between 10 and 25 % (W_Loss1025 and I_Loss1025), between 25 and 50 % (W_Loss2550 and I_Loss2550), and more than 50 % (W_Loss50 and I_Loss50) from 2007 to 2009.¹ For

¹ Different percentage drops in family income and wealth, as potential measures, were considered in the analysis; however, those reported here were the most insightful about significantly influencing savings account ownership.

example, 18.4 % of families lost between 25 and 50 % of wealth and 8.9 % of families lost more than 50 % of family income over the period. By defining detailed potential income losses in this way, we hoped to further explore how families' saving account ownership was affected by these changes (Fisher and Montalto 2011).

Employment status and changes in employment also may have influenced families' saving account ownership during the recession. In 2007, a family (i.e., a respondent and/or spouse/partner) would have been employed, unemployed, or not in the labor force (NILF).² By 2009, a family's employment could have changed or remained the same as in 2007. As shown in Table 3, 59.5 % of the families employed in 2007 remained employed (Emp0709) in 2009, 4.8 % became unemployed (Lostjob_Unemp09), and 4.9 % lost their job and left the labor force (Lostjob_NILF09) by 2009. For families unemployed in 2007, 0.7 % remained unemployed in 2009 and another 0.6 % were drawn into the labor force and were unemployed, putting total unemployed (Unemp0709) at 1.3 % in 2009. Among those unemployed in 2007, 1.4 % gained a job (GainJob_Unemp07) by 2009; while 0.8 % unemployed families in 2007 left the labor market by 2009. These families were included among the 25.4 % who were not the labor market during the 2007 and 2009 timeframe. Finally, among families who were out of the labor market in 2007, 2.7 % obtained a job (GainJob_NILF07) by 2009 and another 0.6 % were counted among the unemployed (Unemp0709) by 2009.

Families that retained employment over the 2007–2009 period were expected to be more likely to maintain or open a savings account than those who were outside the labor force. It was unclear whether families who lost jobs by 2009 were able to either keep or open savings accounts by 2009. Similarly, it was uncertain that families, who had been outside the labor force or were unemployed in 2007, would have maintained or opened savings accounts when they gained employment in 2009. Accordingly, we looked to the empirical findings to shed light on these outcomes.

To learn more about how budgetary pressures affected a family's savings account ownership, we analyzed how income shortfalls (IncShort) influenced savings account ownership decisions. Our analysis found that 10.7 % of families experienced an income shortfall by 2009 (had spending less than or equal to income in 2007 and had spending greater than income by 2009). This contrasted with the 83 % of families who either maintained a budget equal to income in both periods or did so by 2009. Over the

² Changes in employment from full- to part-time were found not to have a significant influence on savings account ownership. In part, this may have been because the proportion of families who experienced this change was small.

2007–2009 period, two-thirds of families were homeowners and another 27 % were primarily renters. Our study was particularly interested in whether the 2.5 % of homeowners that became renters (HomeLoss) by 2009 also experienced a change in savings account ownership.

Having either private or public health insurance coverage (HaveIns) helps families mitigate health-related expenses. A loss in coverage could have substantial consequences on a family’s financial situation. We found that about 80 % of families had health insurance coverage in 2007 and that 9.8 % of families lost insurance coverage (NoIns) by 2009. Our study was interested in learning whether savings account ownership was significantly affected for these families. In expectation of additional out-of-pocket expenses, for example, some families might have maintained or opened an account as part of their self-insurance strategy; whereas families already facing medical-related expenses may have needed to deplete and close an account or forego opening one due to insufficient funds. Married (Married) families were expected to have a savings account to guard against financial uncertainties and to help build financial stability for their families (Chang and Huston Chang 1995; Topoleski 2013). Over half of the families in our analysis remained married and another 38 % continued to be single throughout the period of analysis. In this analysis, we wanted to know whether savings account ownership was affected for the 8.2 % of married families that became single (NoMarried) between 2007 and 2009.

We were also interested in learning whether certain behavioral changes influenced savings account ownership during the recession. Families who experienced recessionary pressures may also have been compelled to re-evaluate their financial goals, including saving and spending and the time-frame needed to attain these goals. As reported in Table 3, almost 18 % of the families went from being short- to longer-term planners (St_Lt_Planner), while 48 % remained long-term planners and another 16 % remained short-term planners over the period. Determining whether families that became longer-term planners increased their likelihood of holding a savings account or not was expected to help inform financial education efforts toward encouraging saving. Another behavior of interest related to families who shopped for credit. Families who gathered information that may be useful to credit decisions (roughly 57 % of the sample did a great deal of shopping both periods) may be also useful for making other financial decision such as whether or not to possess a basic savings account. It is also possible that families that shopped for credit were more financially savvy than those who do not shop for credit. Either way, it is unclear whether the 4 % of families who were infrequent shoppers in 2007 but became active shoppers (Became_Shopper) by 2009 had a higher or lower probability of possessing a basic savings

account. The empirical investigation is expected to clarify how this behavior affected savings account ownership.

Economic Model and Econometric Framework

We consider a family’s holding of a basic savings account from a consumer choice theoretical viewpoint. We define the net utility for consumer i of holding a deposit account in period t as:

$$y_{it}^* = \beta'x_{it} + \varepsilon_{it} + u_i \tag{1}$$

where ε_{it} is assumed to be unobserved effects that may vary from period to period and u_i is unobserved effects that are invariant from period to period, both assumed to be normally distributed and uncorrelated with the observed effects, x_{it} . Having a savings account in period t is then determined by the observation: $y_{it} = 1$ if $y_{it}^* > 0$ and 0 otherwise. Similar to Rhine and Greene (2013), we observe the consumer in two periods, denoted period 0 and 1. Switching behavior may occur in either direction, so that four outcomes are possible: having a savings account in both periods, not having an account in either period, having an account in the first period and not having an account by the second period, and not having an account in the first period and having an account in the second. With two periods of observation, the preceding random-effects specification defines a bivariate probit model in which the correlation across the two periods is $RHO = \rho = \sigma_u^2 / (1 + \sigma_u^2)$. All four cases will be analyzed in this study. Specifically, we will consider whether the consumer keeps an account in both periods, remains without an account both periods, or switches from having a savings account in the first period to not having an account in the second period or vice versa.

Consider the switching outcomes first. Based on the model suggested thus far, we might consider analyzing the two outcomes ($y_{i0} = 1, y_{i1} = 0$) and ($y_{i0} = 0, y_{i1} = 1$). This might be recast as a simple model for the binary outcome *only for those who do switch status*: $z_i = y_{i1}|y_{i0} \neq y_{i1}$ and 0 otherwise. However, this neglects the dynamic aspects of the behavior. Switching behavior will depend on the characteristics of the individual and changes that might motivate a switch, such as certain attitudes or financial behaviors, family income, or employment status. Thus, we consider a dynamic specification for the bivariate probit model:

$$y_{i0}^* = \beta'_0 x_{i,0} + \varepsilon_{i0} + u_i \tag{2a}$$

$$y_{i1}^* = \beta'_1 x_{i,1} + \alpha'(\Delta x_i) + \varepsilon_{i1} + u_i \tag{2b}$$

The fact that this is a two-period model makes it possible to incorporate changes in characteristics that might help explain changes in savings account ownership. The generic term Δx_i indicates changes in the subset of the measured



characteristics whose changes might induce a switch. We also note that preferences might change, which calls into question the assumption that the coefficients are the same in the two periods. We fit the model using full information maximum likelihood (Greene 2012). The standard errors of the coefficient estimates were adjusted for the five impli- cates generated from the data imputation with Repeated Imputation Inference (RII) method.³

We were interested in the marginal effects of the influential variables on the probabilities of the various outcomes implied by the model. Since there are two equations, there are different candidates for the relevant margins to be analyzed. Throughout, we were interested in the probabilities of specific pairs of outcomes, for example, the probability of holding a savings account in period 0 ($y_{i0} = 1$) and not holding one in period 1 ($y_{i1} = 0$). This is the joint probability,

$$P_i(j_0, j_1) = \text{Prob}(y_{i0} = j_0 \text{ in period 0, } y_{i1} = j_1 \text{ in period 1}).$$

Based on the bivariate probit model, this is a bivariate normal probability that we will denote $P_i(j_0, j_1) = \Phi_2(j_{i0}, j_{i1} | \mathbf{x}_{i0}, \mathbf{x}_{i1})$. Partial effects are the derivatives of this bivariate probability, which we can denote

$$\Delta_{j_0, j_1} = \Delta_i(j_0, j_1) = \partial \Phi_2(j_0, j_1 | \mathbf{x}_{i0}, \mathbf{x}_{i1}) / \partial \mathbf{x}_i.$$

There are three noteworthy aspects of the partial effects. First, for any given covariate, such as age or income, there are four outcomes (cells) that can be examined. The four cells (probabilities) must sum to one, which means that these four partial effects will sum to zero. Second, for a specific variable, x , that only appears in one of the two latent regressions in (2a, 2b), the partial effect with respect to that variable will only change sign but not magnitude when the corresponding dependent variable changes. As an example, let's say that LnFaminc for 2009 only appears in (2b). The partial effect of LnFaminc in 2009 on the $\text{Prob}(y_{i0} = 1, y_{i1} = 1 | \text{LnFaminc, other variables})$ with respect to LnFaminc in 2009 will be the negative of the partial effect of LnFaminc in 2009 on the $\text{Prob}(y_{i0} = 1, y_{i1} = 0 | \text{LnFaminc, other variables})$. This possibly counterintuitive result is more transparent, and familiar, in the univariate case, where

$$\frac{\partial \text{Prob}(y_{i1} = 1 | \text{LnFaminc, } \mathbf{x}_{i09})}{\partial \text{LnFaminc}} = -\frac{\partial \text{Prob}(y_{i1} = 0 | \text{LnFaminc, } \mathbf{x}_{i09})}{\partial \text{LnFaminc}}.$$

This is a consequence of straightforward algebra

$$\begin{aligned} \text{Prob}(y_{i1} = 0 | \text{LnFaminc, } \mathbf{x}_{i09}) \\ = 1 - \text{Prob}(y_{i1} = 1 | \text{LnFaminc, } \mathbf{x}_{i09}), \end{aligned}$$

so the derivatives are mirror images.

³ See Kennickell (2011), Montalto and Sung (1996) and Lindamood et al. (2007) for a discussion about RII.

Empirical Model

Drawing on previous literature, certain socioeconomic and demographic factors were likely to have an influence on whether a family has a savings account (Savacct). For example, DeVaney et al. (2007) showed that families with higher income (Faminc), more education (HighSchool, SomeCollege, and College), and a larger number of children (Children) were more likely to save. Additionally, we expected that families with non-liquid wealth (Non-LiquidWealth) were more likely to possess a basic savings account in a given year such as 2007.

It is possible for families to opt for holding funds in other liquid assets such as money market, certificate of deposit, and brokerage call accounts, although additional funds are required to open one of these accounts and access to funds may be somewhat more limited. We included an indicator variable to control for whether or not the family is holding other liquid accounts (Liqassets).⁴ A positive relationship between basic savings and other liquid assets would suggest that families tended to hold an array of savings assets with differing degrees of liquidity. In contrast, a negative relationship between basic savings and other liquid savings assets would imply that, to some degree, these assets are substitutes. We looked to the empirical investigation to shed light on this relationship.

Being employed both periods (Emp0709) was expected to put the family in a better financial position to hold a savings account, relative to being out of the labor force or unemployed. For employed families, possessing a savings account can be a way to prepare against potential future disruptions in employment and income. It is likely that the need for liquid savings is influenced by the stage in life that a family is being observed. Life-cycle effects were proxied by age groups to investigate whether working-age families (those included in the Age30, Age40, Age54, and Age64 groups) were more or less likely to possess a savings account than retirement age (Age65) families. In a recent study, Schmeiser et al. (2014) reported that younger families were more likely to save a larger share of their incomes than older families. Several market research studies also described millennial families (Generation Y), those in the Age30 age group, as being better cash flow managers who save more than some of the other age groups, including baby boomers, the retirement age group (Age65).⁵

Consistently, the literature has shown that certain minority families, including Blacks and Hispanics, were

⁴ Liquid assets include money market accounts, certificates of deposit, and brokerage accounts.

⁵ See Carter et al. (2014), Kempfer (2013), Bank of America (2013) and Bank of America (2014) and Wells Fargo (2013).

less likely to be banked (i.e., own a checking and/or a savings account) than White or non-Hispanic families, respectively.⁶ Our analysis was interested in whether a significant difference existed for Black (Black) or Asian or other race (Asian_Other) families and White families, as well as Hispanic (Hispanic) and non-Hispanic families because these accounts represent a potential cushion against risk and uncertainty. Significant differences would suggest that some families were potentially more vulnerable to unstable financial circumstances than others.

Our study also took into account certain attitudes or behaviors. For example, families who were short-term planners for savings and spending (ST_Planner) may have viewed holding a basic savings account differently than families who were longer-term planners. Families who shopped little or not at all for credit (Little_Noshop) were expected to have less financial acumen about credit and possibly other financial products and services; whereas families that shopped a lot for credit were likely to have more financial knowledge about credit and other financial products and services. And, as Babiarz and Robb (2014) showed, those who were more financially knowledgeable were more likely to hold savings. Finally, our empirical investigation determined if families who were willing to take high risk about money and investment decisions (HighRisk) were more or less likely to hold basic savings accounts than families who were unwilling to take high risk.

The specification of savings account ownership in the initial period, 2007 (i.e., Eq. 2a), included annual family income (in 2009 dollars) in quintiles (Q2_Faminc, Q3_Faminc, Q4_Faminc, Q5Faminc), annual non-liquid wealth (in 2009 dollars) in quintiles (Q2_NonliqWealth, Q3_NonliqWealth, Q4_NonliqWealth, Q5_NonliqWealth), whether the family held other liquid assets (Liqassets), years of education completed by the family head (HighSchool, Some_College, College), employment of respondent (employ), age of family head (Age30, Age40, Age54, Age64), race/ethnicity of respondent (Black, Asian_Other, Hispanic), family owned a home (Ownhome), respondent was married (Married), number of children (Children) present, respondent spent one year or less planning for family saving and spending (St_Planner), respondent or family spent little or no time shopping for credit (Little_Noshop), and took high risk on money and investment decisions (HighRisk).

The dynamic aspects of the two period model included how changes in specific economic, demographic, behavior, and attitudinal attributes influenced savings account

ownership by the second period. Our analysis accounted for a loss in family income (I_Loss10–I_Loss50), a fall in non-liquid wealth (W_Loss10–W_Loss50), and a shortfall in income (IncShort). In addition, changes in work status, including: being employed (Emp0709) both periods, being unemployed (Unemp0709) both periods, and losing a job (Lostjob_Unemp09 and Lostjob_NILF09), or gaining a job (Gainjob_Unemp07 and Gainjob_NILF07) over the 2007–2009 timeframe were analyzed. Other dynamic factors considered were a change from homeowner to non-homeowner (HomeLoss), and a loss of health insurance (NoIns) for a family member. For the two behavioral change measures, the first took into consideration those families who became long-term planners (St_Lt_Planner) for their saving and spending activities and the second represented families who became extensive shoppers of credit (Became_Shopper). We were interested in learning whether there was an influence on savings account ownership for each type of behavioral change.

Results

As displayed in Table 3, there are four possible savings account ownership outcomes. A bivariate probit model was used to estimate the partial effects for each of these outcomes over the 2007–2009 period. We begin by describing the findings for the outcomes where families either maintained a savings account in both periods or opened an account by 2009 and then turn to the results for families that either had no account in both periods or closed an account by 2009.

Maintained or Opened a Savings Account

Table 4 reports the partial effects for attributes that influenced the likelihood of a family having a savings account in both periods and Table 5 reports the partial effects for attributes that affected the probability of a family opening an account by 2009.⁷ Our findings showed that families had to lose 50 % or more of family income or non-liquid wealth before they were significantly less likely to maintain an account over the two periods or to open one in 2009. As shown in Table 4, families that lost more than 50 % of family income were 4.3 percentage points less likely to maintain an account in both periods. Similarly, Table 5 reports that families with a 50 % loss in family income were 5.7 percentage points less likely to open an account

⁶ See, for example, (Rhine and Greene 2006; Rhine and Greene 2013; Bi and Montalto 2004; Chang et al. 1997; Chang and Huston 1995; Hanna and Wang 1995; DeVaney 1995; Hanna et al. 1993).

⁷ The estimated coefficients from the bivariate probit model are available from the senior author upon request. The partial effects were calculated based on attribute means.

Table 4 Families owned a basic savings account in 2007 and 2009

	Partial effects (standard errors)
Economic characteristics	
<i>Education</i> (No high school is omitted)	
High school	0.050*** (0.073)
Some college	0.051*** (0.080)
College	0.065*** (0.076)
<i>Other liquid assets</i>	
Liqassets	-0.024*** (0.049)
<i>Age profile</i> (Age65 is omitted)	
Age30	0.058*** (0.093)
Age40	0.027† (0.087)
Age54	0.018 (0.077)
Age64	0.006 (0.075)
<i>Race/ethnicity</i> (White is omitted)	
Black	-0.088*** (0.065)
Asian_Other	-0.071 (0.016)
Hispanic	-0.096*** (0.068)
<i>Children in family</i>	
Children	0.002 (0.020)
<i>Risk taking</i>	
HighRisk	0.027** (0.059)
Change in attributes	
<i>Wealth losses</i> (W_Loss10 is omitted)	
W_Loss1025	-0.003 (0.059)
W_Loss2550	-0.007 (0.064)
W_Loss50	-0.036*** (0.060)
<i>Family income losses</i> (I_Loss10 is omitted)	
I_Loss1025	-0.007 (0.064)
I_Loss2550	-0.0004 (0.073)
I_Loss50	-0.043*** (0.093)
<i>Employment status</i>	
Emp0709	0.035*** (0.066)
Unemp0709	-0.056 (0.251)
Lostjob_Unemp09	0.023 (0.113)
Lostjob_NILF09	0.033† (0.103)
Gainjob_Unemp07	-0.005 (0.137)
Gainjob_NILF07	-0.007 (0.185)
<i>Other financial changes</i>	
IncShort	-0.019† (0.067)
HomeLoss	0.043† (0.133)
NoIns	-0.018 (0.077)
<i>Demographic & behavioral changes</i>	
NoMarried	-0.0004 (0.078)
St_Lt_Planner	-0.012 (0.054)
Became_Shopper	-0.023** (0.061)
Sample size (weighted implicate sample)	5980

Significance levels † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. The bivariate probit models are estimated with the weighted sample. RHO, the correlation coefficient from the bivariate probit estimation, is 0.438, significant at the 0.001 level

Source 2007–2009 Survey of Consumer Finances

Table 5 Families had no basic savings account in 2007 and opened account by 2009

	Partial effects (standard errors)
Economic characteristics	
<i>Education</i> (No high school is omitted)	
High school	0.067*** (0.073)
Some college	0.068*** (0.080)
College	0.086*** (0.076)
<i>Other liquid assets</i>	
Liqassets	-0.033*** (0.049)
<i>Age profile</i> (Age65 is omitted)	
Age30	0.077*** (0.093)
Age40	0.036† (0.087)
Age54	0.023 (0.077)
Age64	0.007 (0.075)
<i>Race/ethnicity</i> (White is omitted)	
Black	-0.030*** (0.065)
Asian_Other	-0.006 (0.016)
Hispanic	-0.008*** (0.068)
<i>Children in family</i>	
Children	0.004 (0.020)
<i>Risk taking</i>	
HighRisk	0.036** (0.059)
Change in attributes	
<i>Wealth losses</i> (W_Loss10 is omitted)	
W_Loss1025	-0.004 (0.059)
W_Loss2550	-0.010 (0.064)
W_Loss50	-0.048*** (0.060)
<i>Family income losses</i> (I_Loss10 is omitted)	
I_Loss1025	-0.009 (0.064)
I_Loss2550	-0.0005 (0.073)
I_Loss50	-0.057*** (0.093)
<i>Employment status</i>	
Emp0709	0.047*** (0.066)
Unemp0709	-0.075 (0.251)
Lostjob_Unemp09	0.031 (0.113)
Lostjob_NILF09	0.044† (0.103)
Gainjob_Unemp07	-0.007 (0.137)
Gainjob_NILF07	-0.010 (0.185)
<i>Other financial changes</i>	
IncShort	-0.025† (0.067)
HomeLoss	0.057† (0.133)
NoIns	-0.023 (0.077)
Demographic & behavioral changes	
NoMarried	-0.0005 (0.078)
St_Lt_Planner	-0.016 (0.054)
Became_Shopper	-0.030** (0.061)
Sample size (weighted implicate sample)	5980

Significance levels † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. The bivariate probit models are estimated with the weighted sample. RHO, the correlation coefficient from the bivariate probit estimation, is 0.438, significant at the 0.001 level

Source 2007–2009 Survey of Consumer Finances

by 2009. Families in possession of other liquid assets (i.e., money market accounts, certificates of deposit, and brokerage call accounts) also were less likely to maintain or open a basic savings account, suggesting that, to some degree, these two groups of liquid savings were substitutes. Being in possession of other liquid assets decreased the likelihood of maintaining a basic savings account in both periods by 2.4 percentage points and lowered the probability of opening an account by 3.3 percentage points.

Families were 3.5 percentage points more likely to maintain a savings account and 4.7 percentage points more likely to open one by 2009 if the family had employment in both periods, relative to being out of the labor force in both periods. In addition, those who were employed in 2007 but lost their jobs by 2009 and left the labor force were 3.3 percentage points more likely to have a savings account both periods or were 4.4 percentage points more likely to open one before the end of the 2009 period than families not in the labor force. It may be that, to some degree, these families had maintained or opened a savings account as a financial cushion for financial difficulties expected from the recession. And, for these families, job loss and exit from the labor market took place.

Not surprisingly, families whose income fell short of expenses by 2009 were 1.9 percentage points less likely to maintain a savings account in both periods. Likewise, families that experienced a budget shortfall were also less likely to open an account by 2.5 percentage points. Families that lost their home by 2009 were 4.3 percentage points more likely to either maintain a basic savings account in both periods or were 5.7 percentage points more likely to open an account by 2009. This finding may suggest that families who experienced this homeownership change, either because of the recession or family dynamics, likely had a relatively large liability lifted off their balance sheets, leaving any potential equity or lower net housing cost savings available for funding a savings account.

In terms of changes in behavior, families who became extensive shoppers by 2009 are 2.3 and 3.0 percentage points less likely to maintain and open a basic savings account, respectively. There are several possible reasons why a change in credit shopping behavior may have influenced a family's basic savings account ownership. First, as pointed out by Chakrabarti et al. (2011), there was a tendency for families to decrease average spending and/or lower family debt in response to their weakened financial circumstances due to the Great Recession. It is worth noting that a relatively large proportion of consumers continued to pay down debt and save some years after the Great Recession (Schmeiser et al. 2014). A negative relationship between becoming an extensive shopper and either maintaining or opening a savings account is further supported by the fact that interest rates on credit card debt

were substantially higher than interest earned on basic savings accounts.⁸ As such, it is possible that funds were redirected to paying off credit card and other debt rather than put in basic savings accounts. A related possibility is that, as families became more active shoppers for credit, they also became better informed about the returns on other savings and investment products. Difference in returns may have resulted in some families opting for other, higher yield savings and investment products. We found that a somewhat larger proportion of families who became more active shoppers for credit also possessed other liquid assets in lieu of a basic savings account.

Having completed higher levels of education increased the likelihood of families maintained an account in both periods (Table 4) or opened one by 2009 (Table 5). For example, families with a college degree, relative to not having completed high school, were 6.5 percentage points more likely to possess an account in both periods and 8.6 percentage points more likely to open a basic savings account by 2009. These findings suggest that those with higher levels of education may have had a better understanding of the potential benefits from holding funds in a basic savings account as a buffer against emergencies and unexpected expenses.

Relative to retirement age families, relatively younger families were more likely to either maintain a savings account over the period or to open one by 2009. For example, families 30 years of age or younger were 5.8 percentage points more likely to maintain an account and 7.7 percentage points more likely to open an account than retirement age families.

Consistent with other studies, our findings in Table 4 showed that Black and Hispanic families were significantly less likely than White and non-Hispanic families, respectively, to maintain a savings account during the recession. For Black families, the likelihood of holding an account in both periods was 8.8 percentage points lower than for White families. For Hispanic families, the likelihood of maintaining an account over both periods was 9.6 percentage points lower than for non-Hispanic families. In addition, the likelihood of opening a basic savings account was lower for Blacks, relative to Whites, by 3.0 percentage points and lower for Hispanics, relative to non-Hispanics, by 0.8 percentage points (Table 5). These results offer evidence suggesting that Black and Hispanic families may have been more susceptible than White or non-Hispanic

⁸ For example, rates among the highest consumer ranked credit cards were between 9 and 11 %, with median rates ranging from 14 to 17 % (See "The best and worst credit cards," CNNMoney.com, September 4, 2007). This contrasts with the 5-Year Treasury Rate declining from slightly less than 5 % in 2007 to roughly 1.5 by 2009 (See 5 Year Treasury Constant Maturity Rate, Board of Governors of the Federal Reserve System, Federal Reserve Bank of St. Louis (2015) (<http://research.stlouisfed.org/fred2/series/DGSS5/>)).

families to the employment, income, and wealth volatility during the Great Recession.

We found that a family's willingness to take high risk in terms of money and investment decisions had a positive influence on maintaining or opening a basic savings account. Specifically, families willing to take high risk were 2.7 percentage points more likely to maintain an account and were 3.6 percentage points more likely to open an account by 2009. This may indicate that these families were using basic savings accounts for convenient access to funds for possible investment purposes. In the next section, we discuss characteristics that contributed to families either not having an account in both periods or closing an account by 2009.

Did Not Have or Closed a Savings Account

The partial effects for the two outcomes where families either did not have a savings account in either period or closed an account by 2009 are shown in Tables 6 and 7, respectively. As discussed earlier in the Empirical Model section, for variables that appear in one of the two latent regressions (2a, ab), the partial effect on specific attributes will change sign but not magnitude when the correspondent dependent variable changes. Notable exceptions were race and ethnicity because they did not change over the two periods. For our analysis, this corresponded to Tables 4 and 7 where in both situations the dependent variable was the probability that a family owns a basic savings account in 2007 and it is in 2009 that the probability of account ownership changed from own (equal to 1) in Table 4 to the probability of do not own (equal to 0) in Table 7. Likewise, a relationship exists between Tables 5 and 6 where in both situations the dependent variable was the probability that a family did not own a basic savings account in 2007 and it is in 2009 that the probability of account ownership changed from did not own a basic savings account (equal to 0) in Table 5 to the probability of owning a basic savings account (equal to 1) in Table 6.

Given the nature of the four outcomes being analyzed, the findings in Tables 6 and 7 mirrored the magnitude and direction of the partial effects from Tables 4 and 5. As before, the magnitude of influence of race and ethnicity were exceptions since these covariates did not change over time. For example, families that experienced fairly large (greater than 50 %) losses in non-liquid wealth or family income were more likely to be either without a savings account over the 2007–2009 period or to have closed their account by 2009. Similarly, having other liquid assets also had a positive influence on not having a savings account over the period or closing it by 2009. Families with higher levels of education, were relatively younger than retirement age, or were willing to take higher risks, were less likely to be without an account over the period or to close

Table 6 Families owned a basic savings account in 2007 and closed account by 2009

	Partial effects (standard errors)
Economic characteristics	
<i>Education</i> (No high school is omitted)	
High school	−0.050*** (0.073)
Some college	−0.051*** (0.080)
College	−0.065*** (0.076)
<i>Other liquid assets</i>	
Liqassets	0.024*** (0.049)
<i>Age profile</i> (Age65 is omitted)	
Age30	−0.058*** (0.093)
Age40	−0.027† (0.087)
Age54	−0.018 (0.077)
Age64	−0.006 (0.075)
<i>Race/ethnicity</i> (White is omitted)	
Black	0.018*** (0.065)
Asian_Other	−0.010 (0.016)
Hispanic	−0.001*** (0.068)
<i>Children in family</i>	
Children	−0.002 (0.020)
<i>Risk taking</i>	
HighRisk	−0.027** (0.059)
<i>Change in attributes</i>	
<i>Wealth losses</i> (W_Loss10 is omitted)	
W_Loss1025	0.003 (0.059)
W_Loss2550	0.007 (0.064)
W_Loss50	0.036*** (0.060)
<i>Family income losses</i> (I_Loss10 is omitted)	
I_Loss1025	0.007 (0.064)
I_Loss2550	0.0004 (0.073)
I_Loss50	0.043*** (0.093)
<i>Employment status</i>	
Emp0709	−0.035*** (0.066)
Unemp0709	0.056 (0.251)
Lostjob_Unemp09	−0.023 (0.113)
Lostjob_NILF09	−0.033† (0.103)
Gainjob_Unemp07	0.005 (0.137)
Gainjob_NILF07	0.007 (0.185)
<i>Other financial changes</i>	
IncShort	0.019† (0.067)
HomeLoss	−0.043† (0.133)
NoIns	0.018 (0.077)
<i>Demographic & behavioral changes</i>	
NoMarried	0.0004 (0.078)
St_Lt_Planner	0.012 (0.054)
Became_Shopper	0.023** (0.061)
Sample size (weighted implicate sample)	5980

Significance levels † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. The bivariate probit models are estimated with the weighted sample. RHO, the correlation coefficient from the bivariate probit estimation, is 0.438, significant at the 0.001 level

Source 2007–2009 Survey of Consumer Finances

Table 7 Families had no basic savings account in 2007 and 2009

	Partial effects (standard errors)
Economic characteristics	
<i>Education</i> (No high school is omitted)	
High school	-0.067*** (0.073)
Some college	-0.068*** (0.080)
College	-0.086*** (0.076)
<i>Other liquid assets</i>	
Liqassets	0.033*** (0.049)
<i>Age profile</i> (Age65 is omitted)	
Age30	-0.077*** (0.093)
Age40	-0.036 [†] (0.087)
Age54	-0.023 (0.077)
Age64	-0.007 (0.075)
<i>Race/ethnicity</i> (White is omitted)	
Black	0.100*** (0.065)
Asian_Other	0.075 (0.016)
Hispanic	0.105*** (0.068)
<i>Children in family</i>	
Children	-0.003 (0.020)
<i>Risk taking</i>	
HighRisk	-0.036** (0.059)
<i>Change in attributes</i>	
<i>Wealth losses</i> (W_Loss10 is omitted)	
W_Loss1025	0.004 (0.059)
W_Loss2550	0.010 (0.064)
W_Loss50	0.048*** (0.060)
<i>Family income losses</i> (I_Loss10 is omitted)	
I_Loss1025	0.009 (0.064)
I_Loss2550	0.0005 (0.073)
I_Loss50	0.057*** (0.093)
<i>Employment status</i>	
Emp0709	-0.047*** (0.066)
Unemp0709	0.075 (0.251)
Lostjob_Unemp09	-0.031 (0.113)
Lostjob_NILF09	-0.044 [†] (0.103)
Gainjob_Unemp07	0.007 (0.137)
Gainjob_NILF07	0.010 (0.185)
<i>Other financial changes</i>	
IncShort	0.025 [†] (0.067)
HomeLoss	-0.057 [†] (0.133)
NoIns	0.023 (0.077)
<i>Demographic & behavioral changes</i>	
NoMarried	0.0005 (0.078)
St_Lt_Planner	0.016 (0.054)
Became_Shopper	0.030** (0.061)
Sample size (weighted implicate sample)	5980

Significance levels [†] p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001. The bivariate probit models are estimated with the weighted sample. RHO, the correlation coefficient from the bivariate probit estimation, is 0.438, significant at the 0.001 level

Source 2007–2009 Survey of Consumer Finances

it. In contrast, families whose income fell short of expenses or who became active shoppers for credit were more likely to be without an account or to close it by 2009. Again, our analysis showed fairly large differences in savings account ownership by race and ethnicity where Black and Hispanic families were more likely to be without a basic savings account by 10.0 percentage points and 10.5 percentage points, respectively, than White and non-Hispanic families. While the effects are fairly small, we found that Black families were 1.8 percentage points more likely to close an account than Whites; while Hispanic families were 0.1 percentage points less likely to close an account than non-Hispanics. Finally, the estimated correlation coefficient, RHO, was fairly large, 0.438 (shown at the bottom of Tables 4, 5, 6 and 7) and significant, suggesting that random, unobserved persistent effects existed.

Concluding Remarks

In the aftermath of the Great Recession, a substantial number of families were left financially at risk, especially those with lower income, less wealth, fewer years of education, and unstable employment. This study examined how families responded to the financial stresses of the Great Recession in terms of owning a basic savings account. We considered basic savings accounts as an important asset for helping many families establish and maintain financial stability and resiliency. Funds held in these accounts can be easily accessed to buffer against financial risks and uncertainties. These accounts can also be a first step toward other, more sophisticated savings and investment products that contribute to a family’s economic mobility, financial security, and economic well-being.

Several important implications are drawn from our study. First, families had to experience a fairly large wealth or family income loss (over 50 %) before they were less likely to own a savings account or to open an account over the period. This may imply that families recognized the value of possessing a savings account even as wealth or income may have declined to some degree. Second, while basic savings accounts are likely the most effective entry point of saving for many families, especially lower-income households, other liquid savings accounts may be substitutes for basic savings. As such, from a comprehensive policy perspective, it may be instructive to encourage saving behavior through holdings of a broader range of liquid savings. Third, Black and Hispanic families appeared to be more susceptible than White or non-Hispanic families to employment, income, and wealth instability during this economic downturn because they were less likely to possess a basic savings account to draw on to smooth consumption. Moreover, their holdings of other

liquid assets did not appear adequate to make up the difference, even when compared among higher-income families. To make this point clear, we found that 5 % of lower-income Black families had other liquid assets, while 23 % of lower-income White families held other liquid assets. Likewise, a little over 5 % of lower-income Hispanics had other liquid assets and 19 % of non-Hispanics possessed other liquid assets. At higher incomes, a narrower but persistent gap remained by race and ethnicity. For higher-income Black families, 32 % held other liquid assets, while 65 % of White families own these assets. About 51 % of higher-income Hispanic families possessed other liquid assets and almost 64 % of non-Hispanic families had other liquid assets. We believe that further research is needed to uncover the underlying reasons for this continued gap.

A final implication drawn from the study was the positive relationship between higher levels of education and savings account ownership. These findings served as encouragement to financial institutions, financial educators and other organizations involved in promoting savings through education. Efforts to educate and share financial knowledge with less educated, lower-income, and minority families, such as Black and Hispanic households, can help pave the way for these families to open and actively save for emergencies, unexpected expenses, and other needs. Overall, we believe that basic savings accounts can be an important way for families to build a financial cushion against financial uncertainty and risk and to establish financial stability and resiliency.

This study examined how families responded to the financial stresses of the Great Recession in terms of basic savings account ownership. It would be useful to extend this examination to other, nonrecessionary periods. It is worth noting that the SCF oversamples the wealthy, and the sample sizes are small for lower-income or lower-wealth households. Although we weighted our analyses, future studies are needed to explore datasets with larger samples to represent these populations of interest. Moving beyond holdings of basic savings, it also would be interesting to examine family decision making toward other financial products and services that contribute to consumption smoothing and to analyze the dynamic path taken by families toward financial health and well-being.

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