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Bank Accounts, Nonbank Financial Transaction Products, and Food Insecurity among Households with Children

Low- and moderate-income households with children often face considerable difficulties in ensuring enough financial resources for adequate consumption. With households in both the December 2008 current population survey (CPS) food security supplement and the January 2009 CPS unbanked and underbanked supplement, I investigate the relationship between bank account ownership, nonbank financial transaction products, and food security of households with children. Unbanked households and households that use alternative financial service transaction products are more likely to experience very low food security and food insecurity than other households. Currently unbanked but previously banked households as well as underbanked households face the greatest risk of food insecurity. Policies to improve the consumption adequacy of households with children may benefit from a multifaceted approach that addresses their banking and financial transaction needs.

A bank account is a basic financial tool. Bank accounts provide financial transaction services and secure storage of financial assets; assist in accessing lower-cost credit; and help to establish a credit history, often a requirement for employment or rental housing. Yet, 9.0 million households (7.0%) do not own a bank account and another 24.5 million households (19.9%) are underbanked, meaning that an adult in the households owns a bank account but still utilizes nonbank financial providers for basic financial transactions and/or credit (FDIC 2016).

Public policies encourage bank account ownership and protect consumers from the expense of utilizing nonbank financial providers. Yet, disagreement exists as to whether the typical account improves the economic well-being of low- and moderate-income (LMI) households (Barr 2004; Lyons and Scherpf 2004; Mullainathan and Shafir 2009; Prescott and Tatar 1999). Bank accounts—especially for LMI households—can have considerable direct and indirect costs. Only 39% of noninterest-bearing checking accounts are free; overdrafts typically incur \$35 in bank fees and merchants may add additional fees; and consumers can pay fees for low

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balances, certain transactions, and so on (CFA 2012; Prescott and Tatar 1999; Servon 2014).

Using nonbank financial providers, commonly known as alternative financial service (AFS) providers (check cashers, nonbank money orders, payday loans, pawn loans, etc.), also has considerable costs. Conducting financial transactions outside the banking system incurs fees to cash checks and pay bills, makes budget management more difficult, increases credit costs, and inhibits savings (Barr 2004; Rhine, Greene, and Toussaint-Comeau 2006). Beard (2010) estimates that cashing only a biweekly payroll check and purchasing six money orders each month costs \$1,200 annually, not including other costs, such as the time costs to travel to these providers and waiting in line.

One way to evaluate if households are better off utilizing banks and forgoing AFS providers is to examine their ability to meet minimum consumption standards. Of particular importance is how bank accounts and AFS products affect the consumption adequacy of the 7.6 million children in unbanked households and the additional 16.3 million children in underbanked households (FDIC 2016). Using households in both the December 2008 Current Population Survey (CPS) and the January 2009 CPS, this study estimates whether bank account ownership and AFS product use is linked with food insecurity. Food insecure households are unable to acquire adequate food for one or more members due to insufficient money and other resources. In 2015, 16.6% of households with children were not fully food secure and 4.7% experienced very low food security, the most extreme form of food insecurity (Coleman-Jensen et al. 2016).

This study makes several contributions. First, it informs the debate on how bank accounts affect LMI households by examining their food insecurity, a well-studied measure of consumption inadequacy that is correlated with other material hardships. If bank account ownership protects against food insecurity, the benefits of policies that encourage bank accounts are larger than previously noted. If owning an account is uncorrelated with food insecurity, “banking the unbanked” should not be expected to reduce material hardship. I find that not owning a bank account is correlated with worse outcomes especially among those with a bank-initiated closure, those previously banked, and those unbanked due to economic reasons.

This research also informs the debate on whether or not AFS providers improve well-being. Recent work focuses on AFS credit providers, particularly payday lenders, and less is known about AFS financial transaction providers. If use of these products increases the risk of food insecurity, public policy should better regulate these products and households should

be encouraged to rely on banks for these services. I find AFS financial transaction products are significantly correlated with food insecurity, especially among banked households, those using check cashers primarily because they lack a bank account, those using money orders for economic reasons, and those using check cashers or money orders due to idiosyncratic reasons. In an instrumental variables approach, I find that check cashing is not significantly related to food insecurity and, if anything, may reduce food insecurity by providing liquidity.

This study also contributes to our understanding of food security. Despite a large literature, we know little about the relationship between these financial decisions and food insecurity. Yet, unbanked and underbanked households share many characteristics with food insecure households. Understanding how financial decisions affect food insecurity could help to better design policy to reduce the incidence and prevalence of food insecurity, which is particularly important for households with children because childhood food insecurity is related to declines in child health, development, and well-being (Coleman-Jensen, McFall, and Nord 2013). I find that economic shocks better explain food insecurity than poor financial management skills.

BACKGROUND

Financial Transaction Services

Banks, thrifts, and credit unions, collectively known as mainstream financial institutions, offer a variety of accounts with financial transaction services. AFS providers offer transaction services similar to a bank. These include check-cashing services—converting a check into cash for a fee—and money orders. Check cashing prices generally range from 1% to 4% of the check's value; the average fee in 2008 was \$13.77 (3.1% of the check's value) (Barr 2004; Bradley et al. 2009). Nonbank money orders cost, on average, \$0.64 per money order, compared to bank money orders that cost \$3–\$4 (Barr 2004; Caskey 2002; FISCA 2016).

Households demand transaction services in order to receive income and make payments. A bank account can meet this demand, providing a low- or no-cost option for making and receiving payments with check or direct debit, a secure storage location, and assistance in accessing credit. The cost of an account depends on its features, as well as its use. For example, banks may charge account maintenance or ATM fees; fees may be charged if a balance falls below a minimum level or if the account is in overdraft.

Households choose not to own a bank account for many reasons, ranging from customer service, product design, lack of product motivation,

financial illiteracy, distrust of banks, and cost (Barr 2004; Fowler, Cover, and Kleit 2014; Hogarth, Anguelov, and Lee 2003, 2004). Some unbanked have no choice as banks often prohibit those with poor credit or a recent history of mismanaging an account from account ownership. Both banked and unbanked households utilize AFS providers. Unbanked households may utilize these providers because they lack alternatives to receive or make payments. Banked households may use nonbank check cashers for convenience or immediate access to funds and may use money orders to guarantee payment to a payee.

Compared to banked households, unbanked households are less likely to work and, if working, earn substantially less; they have less financial assets; they are more likely to be single, non-White, nonnative citizens, less educated, and headed by younger adults (Barr 2004; Bohn and Pearlman 2013; Dunham 2001; Hogarth and O'Donnell 2000; Hogarth et al. 2004; Klawitter and Fletschner 2011; Rhine and Greene 2013; US General Accounting Office 2002; Vermilyea and Wilcox 2002; Washington 2006). Because the unbanked are more likely to use AFS providers, the characteristics of those using AFS products are similar. AFS product use is related to low or moderate income, unbanked status, education, and age; non-whites, Hispanics, single adults, and households with children are more likely to use AFS products (Barr 2004; Caskey 1991, 2002; Rhine, Greene, and Toussaint-Comeau 2006).

Correlates and Causes of Food Insecurity

A large literature exists on the causes of food insecurity (see Gundersen, Kreider, and Pepper 2011 for a review). Food insecurity often results from resource constraints associated with low income (Gundersen and Gruber 2001; Leete and Bania 2010; Ribar and Hamrick 2003). But, income does not completely explain the prevalence of food insecurity. One reason may be financial skills. Previous work finds that financial management skills and practices, as well as financial literacy, are related to food insecurity (Carman and Zamarro 2016; Dollahite, Olson, and Scott-Pierce 2003; Dowler 1997; Gundersen and Garasky 2012; Kenney 2008; Olson et al. 2004).

Financial skills contribute to the decision to own a bank account or patronize an AFS provider. Households with stronger financial management skills may rely on banks for financial transactions, rather than costly AFS products that may stretch tight household budgets; better skills may help banked households avoid bank fees or overdrafts, both which can lead to account closure; during economic shocks, better

skills may allow households to meet expenditure needs with savings or affordable credit.

A handful of studies look specifically at the link between financial products and hardship. Lim, Livermore, and Davis (2010) find that unbanked Earned Income Tax Credit (EITC) recipients experience less material hardship but similar levels of food hardship as banked recipients. In contrast, Barr (2009) and Birkenmaier, Huang, and Kim (2016) conclude that unbanked households experience more food hardship than banked households. Other work examining AFS credit concludes that payday loan use is associated with improvements in food hardship (Fitzpatrick and Coleman-Jensen 2014).

This study is the first to examine the relationship between bank accounts, AFS transaction products, and a specific measure of material hardship: food insecurity. As such, it examines how a previously unobserved household characteristic—the financial transaction products used—relates to food insecurity. Relying on banks rather than AFS providers for financial transaction services may reduce food insecurity by avoiding high fees that force budget tradeoffs, encouraging precautionary savings, and accessing lower cost credit. However, bank accounts can also generate high fees that increase food insecurity, particularly if the household owns an account unsuitable for their needs, lacks financial management skills, or uses overdrafts as a form of credit. Alternatively, nonbank check cashers can reduce food insecurity by providing immediate access to check funds at a critical time. As a result, the relationship between these products and food insecurity is an empirical question that this study seeks to measure, while recognizing the potential endogeneity of financial product use.

DATA AND METHODS

Data come from the December 2008 and the January 2009 CPS. The December CPS is the food security supplement (CPS FSS), the official source of food security statistics. The January 2009 CPS contained a special Federal Deposit Insurance Corporation (FDIC)-sponsored supplement with information on the use of banks and AFS providers. To create a data set containing information on food security status, account ownership, and AFS use, households in both months were linked following Madrian and Lefgren (1999).¹

1. Alisha Coleman-Jensen generously provided the matched sample. The supplements were merged at the person level by state, household identification numbers, and person line number. Characteristics of persons across the supplements were then compared to ensure match quality.

I limit the sample to households with children. Households with children are more likely to be food insecure than other households. For example, while the prevalence of household food insecurity was 12.7%, 16.6% of households with children were food insecure; rates were higher for single mother households (30.3%) (Coleman-Jensen et al. 2016). Households with children are also of policy interest due, in part, to the long-term effects of child food insecurity (Gundersen, Kreider, and Pepper 2011).

I further limit the sample to households where the primary employed adult is less than 60 years old and no adult possesses a four-year college degree. Those without a college degree are more likely to be food insecure and more likely to use AFS products. Selecting the sample on households with low levels of education focuses on those less likely to be banked, more likely to use AFS products, and at greater risk for food insecurity.

Measures

The variables of interest are decisions to own a bank account or use an AFS financial transactional product. The January 2009 CPS asks if any adult in the household currently owns a bank account and, if not, if any adult owned an account within the last year (approximately January 2008 to January 2009). For those that closed an account within the last year, the survey asks who closed the account and why the account was closed.

The January 2009 CPS asks if any adult ever cashed a check at a place other than a bank or purchased a money order at a place other than a bank. For those that ever used one of these AFS products, the survey collects the typical frequency of use (at least a few times a year, once or twice a year, or almost never) and why an AFS provider was chosen rather than a bank. I define users of nonbank check cashers and nonbank money orders as those that report using these services at least once or twice a year.²

The primary outcome of interest is the household food security status over the past 12 months, the official classification of food adequacy and the measure that best captures the time frame of the bank account ownership and AFS use measures. Food insecure households have difficulty acquiring adequate food for one or more members and report reductions in the quality or variety of their diet and, in more severe cases, reductions in intake. Very low food secure households reflect the most severe food insecurity with disrupted eating patterns and food intake reduced below levels considered appropriate for one or more members. The U.S. Department of Agriculture (USDA) classifies the food security of households with children from

2. Results are nearly identical when I classify those that "ever used" these services as customers.

18 questions that indicate the household faces difficulty in meeting food needs. Food insecure households with children report three or more food insecure conditions while very low food secure households with children report eight or more conditions. Thus, food insecure households include those with very low food security.

Food insecurity and very low food security tend not to be chronic (Coleman-Jensen et al. 2016). The questions regarding bank account ownership (measured from January 2008 to January 2009) or AFS use (measured as at least a few times a year) make it impossible to determine if a food insecurity spell occurred prior to or after the use of a financial product. I use the 30-day food security measure (mid-November to mid-December 2008) as an additional outcome because it is more likely that the use of a financial product preceded any experience of food insecurity.

Empirical Model

I estimate the following probit model, relating food insecurity to the use of banking and AFS financial transaction products:

$$\begin{aligned} \text{Pr}(\text{FoodInsecurity}) = & \beta_1 + \beta_2 \text{FinancialProduct} + \beta_3 \text{Demo} \\ & + \beta_4 \text{Econ} + \beta_5 \text{StatePolicy} + \varepsilon, \end{aligned} \quad (1)$$

where FoodInsecurity represents a dichotomous measure of the household's food security status, FinancialProduct represents the banking or AFS transactional product of interest, Demo represents demographic characteristics of the household, Econ represents economic characteristics of the household, and StatePolicy controls for state policies affecting LMI households. All estimates are weighted by the FSS weight.

The coefficient of interest, β_2 , reflects the correlation between financial transaction products and household food security. Interpreting β_2 should be performed carefully because there are likely unobservable household characteristics that relate to both their use of financial products and their food security. These unobservable characteristics could be fixed, such as financial management skills, or time varying, such as a recent economic shock.

The demographic and economic controls are those established in the literature to be related to food security and/or use of financial services (e.g., see Barr 2004; Gundersen, Kreider, and Pepper 2011; Hogarth and O'Donnell 2000). Demographic characteristics include an indicator for an unmarried parent as household head (with married parents serving as

the omitted group), indicators reflecting the racial/ethnic characteristics of the primary earner (non-Hispanic African American or Hispanic, with non-Hispanic Whites and all others serving as the omitted group), and an indicator if the primary earner is a native born citizen. I also control for age of the primary earner with a continuous variable and include dichotomous controls for the age of the oldest child in the household (aged 6–14 and aged 15–17, with aged 0–5 serving as the omitted group).

Economic characteristics capture the labor markets and economic resources potentially available to the household. These include indicators for the educational attainment of the most educated adult (less than a high school degree or high school graduate, with some college serving as the omitted group), a series of dichotomous variables for the ratio of the household's income to federal poverty level (FPL) ratio (130%–185%, 185%–300%, above 300%, with less than 130% serving as the omitted group), and an indicator for missing household income data. A series of employment indicators captures the employment status of the household's most employed adult: part-time worker; unemployed but looking for work; retired, out of the labor force, or disabled. Employed full-time serves as the omitted group. Finally, the 2008 state unemployment rate captures the economic environment, the 2008 state maximum EITC benefit for two dependents captures the generosity of the safety net, and the 2008 minimum wage controls for wages of LMI households.

Summary Statistics

Table 1 presents the descriptive statistics. Column 1 presents the full sample and columns 2 through 5 presents subsamples of households based on their use of bank accounts and AFS providers. Overall, the rate of very low food security and food insecurity over the previous 12 months is 9.6% and 27.9%, respectively. High rates of food hardship reflect the sample selection criteria. Food insecurity, as well as very low food security, over the previous 12 months is substantially greater for the unbanked (48.3%) and those that used nonbank money orders (40.2%) and nonbank check cashers (45.2%). The 30-day food security measure shows a similar pattern.

For the mean sample household, the primary earner is nearly 38-years old with an oldest child approximately 10-years old. One-fifth (20.0%) of the sample is headed by a Hispanic and most are headed by native-born citizens (84.2%). Less than half (38.9%) are unmarried parents. Nearly half (45.7%) possesses a high school degree or less. Despite the vast majority of primary earners being employed full-time (80.5%), only one quarter

TABLE 1
Summary Statistics for Households with Children, by Financial Decisions, Weighted

	Overall	Banked	Unbanked		At Least a Few Times a Year	
			All	Previously	Used	Used Check
			Unbanked	Banked	Money Order	Casher
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Outcome variables</i>						
Household very low food security, 12 months	0.096 (0.294)	0.084 (0.277)	0.177 (0.382)	0.213 (0.410)	0.155 (0.362)	0.174 (0.379)
Household food insecurity, 12 months	0.279 (0.449)	0.249 (0.432)	0.483 (0.500)	0.534 (0.500)	0.402 (0.490)	0.452 (0.498)
Household food insecurity, 30 days	0.165 (0.371)	0.147 (0.355)	0.282 (0.450)	0.309 (0.463)	0.239 (0.427)	0.272 (0.445)
<i>Demographic variables</i>						
Age of primary earner	38.204 (9.246)	38.722 (9.098)	34.749 (9.491)	34.484 (9.675)	36.715 (9.641)	35.792 (9.411)
Oldest child, age 0–5	0.205 (0.404)	0.191 (0.393)	0.284 (0.451)	0.288 (0.454)	0.236 (0.424)	0.254 (0.436)
Oldest child, age 6–14	0.501 (0.500)	0.501 (0.500)	0.504 (0.500)	0.525 (0.500)	0.496 (0.500)	0.500 (0.500)
Oldest child, age 15–17	0.296 (0.457)	0.309 (0.462)	0.212 (0.409)	0.178 (0.383)	0.275 (0.446)	0.254 (0.436)
Married parent	0.590 (0.492)	0.630 (0.483)	0.364 (0.481)	0.326 (0.469)	0.481 (0.500)	0.426 (0.495)
Unmarried parent	0.389 (0.488)	0.353 (0.478)	0.634 (0.482)	0.679 (0.467)	0.503 (0.500)	0.555 (0.497)
White or other, non-Hispanic	0.594 (0.491)	0.647 (0.478)	0.296 (0.457)	0.386 (0.488)	0.466 (0.499)	0.428 (0.495)
African American, non-Hispanic	0.119 (0.324)	0.098 (0.298)	0.261 (0.440)	0.283 (0.451)	0.206 (0.405)	0.211 (0.408)
Hispanic	0.200 (0.400)	0.177 (0.382)	0.352 (0.478)	0.222 (0.416)	0.244 (0.430)	0.271 (0.445)
Native-born citizen	0.842 (0.365)	0.859 (0.348)	0.728 (0.445)	0.872 (0.335)	0.835 (0.371)	0.815 (0.388)
<i>Economic characteristics</i>						
Less than HS degree	0.100 (0.300)	0.069 (0.254)	0.304 (0.460)	0.198 (0.399)	0.151 (0.358)	0.163 (0.370)
High school graduate	0.357 (0.479)	0.344 (0.475)	0.441 (0.497)	0.475 (0.500)	0.395 (0.489)	0.411 (0.492)
Some college	0.526 (0.499)	0.574 (0.495)	0.256 (0.436)	0.315 (0.465)	0.439 (0.496)	0.408 (0.492)
Household income, below 130% of FPL	0.352 (0.478)	0.280 (0.449)	0.757 (0.429)	0.749 (0.434)	0.510 (0.500)	0.539 (0.499)
Household income, 130–185% of FPL	0.116 (0.321)	0.122 (0.327)	0.080 (0.272)	0.096 (0.295)	0.134 (0.341)	0.135 (0.342)
Household income, 185–300% of FPL	0.221 (0.415)	0.244 (0.430)	0.064 (0.245)	0.082 (0.274)	0.174 (0.379)	0.148 (0.355)

TABLE 1
Continued

	Overall	Banked	Unbanked		At Least a Few Times a Year	
			All Unbanked	Previously Banked	Used Money Order	Used Check Casher
	(1)	(2)	(3)	(4)	(5)	(6)
Household income, above 300% of FPL	0.248 (0.432)	0.282 (0.450)	0.019 (0.137)	0.015 (0.120)	0.121 (0.327)	0.102 (0.302)
Household income missing	0.086 (0.280)	0.087 (0.282)	0.077 (0.267)	0.055 (0.229)	0.066 (0.248)	0.078 (0.269)
Employed full-time	0.793 (0.405)	0.844 (0.363)	0.510 (0.500)	0.497 (0.501)	0.718 (0.450)	0.687 (0.464)
Employed part-time	0.076 (0.266)	0.068 (0.251)	0.136 (0.343)	0.128 (0.335)	0.095 (0.293)	0.114 (0.318)
Unemployed	0.051 (0.220)	0.039 (0.192)	0.134 (0.341)	0.166 (0.373)	0.088 (0.283)	0.088 (0.283)
Not employed, retired, out of labor force, or disabled	0.068 (0.251)	0.046 (0.210)	0.209 (0.407)	0.198 (0.399)	0.097 (0.296)	0.102 (0.302)
<i>State characteristics</i>						
State unemployment rate	5.506 (1.264)	5.495 (1.275)	5.581 (1.188)	5.558 (1.190)	5.572 (1.208)	5.588 (1.238)
Maximum state EITC, in hundreds	0.302 (0.490)	0.305 (0.488)	0.285 (0.499)	0.268 (0.482)	0.307 (0.508)	0.304 (0.495)
State minimum wage	6.999 (0.516)	7.005 (0.516)	6.958 (0.517)	6.933 (0.494)	6.980 (0.516)	6.993 (0.531)
Observations	5,256	4,571	685	343	1,435	650

Notes: Author's calculations using households with children in both the December 2008 and January 2009 CPS. All sample statistics weighted by the FSS weight. Standard deviations provided in parentheses.

(24.8%) have income above 300% of poverty. Unbanked households and households using AFS products have similar demographic characteristics. Consistent with the literature, these households are slightly younger than banked households, much more likely to be non-White, Hispanic, headed by a unmarried parent, and nonnative citizens.

The characteristics of the unbanked suggest they experience greater hardship than households that used nonbank check cashing and nonbank money orders. The unbanked tend to have lower educational attainment with almost three-quarters (74.5%) holding a high school degree or less. In contrast, those that used AFS financial transaction products have similar educational attainment as the overall sample. Unbanked households have the lowest incomes and only half (52.1%) are employed full-time. Households using AFS products have lower incomes than the overall sample but are only slightly less likely to be employed full-time.

RESULTS

Relationship between Bank Account Ownership and Food Insecurity

Table 2 presents the mean marginal effects from estimating equation 1. In column 1, not owning a bank account is correlated with a statistically significant 3.3 percentage point increase in the probability of very low food security of the household. Compared to banked households, the unbanked are also 4.0 percentage points more likely to be food insecure during the previous 12 months (column 2) and 2.9 percentage points more likely to be food insecure during the previous 30 days (column 3).³

The magnitude of these estimates is large. To put it in perspective, recent estimates suggest that Supplemental Nutrition Assistance Program (SNAP) receipt is associated with a 20% reduction in very low food security and a 30% reduction in food insecurity (Ratcliffe et al. 2011). With 9.6% of the sample classified as very low food secure, 27.9% of the sample classified as food insecure, and 16.5% of the sample food insecure over the previous 30 days, not owning a bank account is associated with a 34.4% (3.3/9.6) increase in very low food security, a 14.3% (4.0/27.9) increase in food insecurity, and a 17.6% (2.9/16.5) increase in food insecurity over the previous 30 days. The relatively similar estimates for very low food security and food insecurity over the previous 12 months suggests that not owning a bank account is associated with the most extreme type of food insecurity. Moreover, not owning a bank account is related to a persistent difficulty in garnering adequate resources for food because food insecurity over the previous year is only slightly larger than food insecurity over the previous 30 days.

Many households transition in and out of account ownership and significant heterogeneity exists among the unbanked. Columns 4 through 6 of Table 2 distinguish between two types of unbanked households: previously banked households and never banked households. Currently banked households serve as the omitted group.

Relative to banked households, no correlation exists between never owning a bank account and very low food security, food insecurity, or food insecurity during the previous 30 days. Previously banked households are significantly associated with each outcome. Previously but not currently owning an account is related to a 3.9 percentage point increase in very low food security (column 4), a 5.7 percentage point increase in food insecurity

3. These are correlations. Ideally, an instrumental variable approach could be used to establish causal relationships. However, no valid instrument could be identified.

TABLE 2

Mean Marginal Effects of Bank Account Ownership on Food Security of Households with Children

	Very Low Food Security	Food Insecurity, 12 Months	Food Insecurity, 30 Days	Very Low Food Security	Food Insecurity, 12 Months	Food Insecurity 30 Days
	(1)	(2)	(3)	(4)	(5)	(6)
Unbanked	0.033** (0.013)	0.040* (0.021)	0.029* (0.017)			
Formerly banked				0.039** (0.016)	0.057** (0.026)	0.040* (0.021)
Never banked				0.025 (0.018)	0.030 (0.028)	0.017 (0.023)
Age of primary earner	0.001 (0.001)	-0.002** (0.001)	-0.001 (0.001)	0.001 (0.001)	-0.002** (0.001)	-0.001 (0.001)
Oldest child, age 6–14	0.030** (0.013)	0.037** (0.018)	0.030* (0.016)	0.030** (0.013)	0.038** (0.018)	0.031* (0.016)
Oldest child, age 15–17	0.051*** (0.015)	0.054** (0.021)	0.039** (0.018)	0.049*** (0.015)	0.052** (0.021)	0.036* (0.018)
Unmarried parent	0.023** (0.010)	0.042*** (0.015)	0.029** (0.013)	0.022** (0.010)	0.042*** (0.015)	0.028** (0.013)
African American, non-Hispanic	-0.006 (0.014)	0.033 (0.021)	-0.004 (0.018)	-0.009 (0.014)	0.031 (0.021)	-0.005 (0.018)
Hispanic	-0.013 (0.014)	0.001 (0.020)	0.002 (0.017)	-0.012 (0.014)	0.003 (0.020)	0.004 (0.017)
Native-born citizen	0.018 (0.016)	0.016 (0.022)	-0.015 (0.018)	0.019 (0.016)	0.014 (0.022)	-0.015 (0.018)
Less than HS degree	-0.031* (0.016)	0.036 (0.024)	-0.005 (0.020)	-0.027* (0.016)	0.037 (0.024)	-0.001 (0.020)
High school graduate	0.003 (0.010)	0.024 (0.015)	0.004 (0.013)	0.005 (0.010)	0.026* (0.015)	0.006 (0.013)
Household income, 130–185% of FPL	-0.035** (0.015)	-0.065*** (0.022)	-0.023 (0.019)	-0.035** (0.015)	-0.066*** (0.022)	-0.024 (0.019)
Household income, 185–300% of FPL	-0.082*** (0.014)	-0.163*** (0.019)	-0.099*** (0.017)	-0.083*** (0.014)	-0.165*** (0.019)	-0.100*** (0.017)
Household income, above 300% of FPL	-0.147*** (0.017)	-0.280*** (0.021)	-0.204*** (0.020)	-0.147*** (0.017)	-0.280*** (0.021)	-0.204*** (0.020)
Household income missing	-0.109*** (0.019)	-0.217*** (0.026)	-0.138*** (0.023)	-0.109*** (0.019)	-0.220*** (0.026)	-0.140*** (0.023)
Employed part-time	0.006 (0.016)	0.041* (0.024)	0.046** (0.020)	0.006 (0.016)	0.039 (0.024)	0.046** (0.020)
Unemployed	0.042** (0.018)	0.126*** (0.029)	0.091*** (0.024)	0.042** (0.018)	0.121*** (0.029)	0.090*** (0.024)
Not employed, retired, out of labor force, or disabled	0.037** (0.017)	0.117*** (0.027)	0.102*** (0.021)	0.039** (0.017)	0.116*** (0.027)	0.103*** (0.021)

TABLE 2
Continued

	Very Low Food Security	Food Insecurity, 12 Months	Food Insecurity, 30 Days	Very Low Food Security	Food Insecurity, 12 Months	Food Insecurity 30 Days
	(1)	(2)	(3)	(4)	(5)	(6)
State unemployment rate	−0.004 (0.004)	−0.008 (0.007)	−0.002 (0.006)	−0.004 (0.004)	−0.007 (0.007)	−0.002 (0.006)
Maximum state EITC, in hundreds	0.012 (0.010)	0.003 (0.015)	0.008 (0.013)	0.012 (0.010)	0.002 (0.015)	0.007 (0.013)
State minimum wage	0.012 (0.010)	0.010 (0.015)	−0.003 (0.013)	0.012 (0.010)	0.009 (0.015)	−0.004 (0.013)
Observations	5,256	5,256	5,256	5,231	5,231	5,231

Notes: Author’s calculations using households with children in both the December 2008 and January 2009 CPS. All sample statistics weighted by the FSS weight. Robust standard errors provided in parentheses.
Statistical significance is denoted as: *** $p < .01$, ** $p < .05$, * $p < .1$.

(column 5), and a 4.0 percentage point increase in food insecurity during the previous 30 days (column 6).

Thus, the increased likelihood of very low food security and food insecurity among the unbanked is concentrated among the previously banked. There is an important correlation between no longer owning a bank account and extreme food hardship: when parents close a bank account or have the account closed on their behalf, it is associated with a 40.6% (3.9/9.6) increase in the probability of very low food security, a 20.4% (5.7/27.9) increase in food insecurity, and a 24.2% (4.0/16.5) increase in food insecurity during the previous 30 days.

While not causal, these differences between the formerly banked and never banked could indicate a temporary situation, such as an economic shock, that led households to both exit the banking system and experience a spell of food insecurity. It could also reflect a fixed household characteristic, such as a lack of financial management skills, preventing a household from successfully managing a bank account and their food resources.

To distinguish between these explanations, I examine self-reports of who closed the account. Bank initiated closures almost always occur because of repeated account overdrafts, although fraud or account inactivity can also cause a bank initiated closure (Campbell, Martínez-Jerez, and Tufano 2012). Bank initiated closures are linked to economic shocks for those with few assets, poor financial management skills, to the competitiveness of the banking market, the bank’s size, and community social

norms (Campbell, Martínez-Jerez, and Tufano 2012). In contrast, a customer closing a bank account could reflect preferences or lack of financial education to understand the benefits of an account.

I divide the previously banked into two groups based on who closed the account—the account owner or the bank—in columns 1 through 3 of Table 3. Compared to the currently banked, formerly banked households with a bank initiated closure are 8.4 percentage points more likely to experience very low food security while those that report closing the account themselves are 3.5 percentage points more likely to be very low food secure (column 1). Compared to banked households, previously banked households with a bank-initiated closure are 12.4 percentage points more likely to be food insecure (column 2) and 9.2 percentage points more likely to experience food insecurity during the previous 30 days (column 3). Coefficient estimates between never banked households and households that experienced a bank closure are statistically significantly different for the very low food security outcome.

These estimates provide some support for a financial shock that led a household to both exit the mainstream financial system and experience a decline in food security, consistent with Rhine and Greene (2013) who find that becoming unbanked is associated with declines in family income, job loss, and loss of health insurance. Moreover, point estimates for a bank-initiated closure are biased toward zero due to its stigma and households preemptively closing their account before the bank initiates a closure. Still, these results do not rule out poor financial management skills. For example, overdrafts could be an expensive credit source or indicate a lack of skills.

To understand why the formerly banked are more likely to experience food insecurity, I examine when these households owned an account in columns 4 through 6. An economic shock that caused both a transition out of the banking system and food insecurity would be consistent with unbanked households owning an account within the last year. In contrast, poor financial management skills are a fixed household characteristic, even if poor skills may be related to both the frequency and severity of economic shocks. Thus, if poor financial management skills explain these relationships, unbanked households that owned an account more than a year ago—prior to when food insecurity was measured—would experience a heightened risk of food insecurity over the previous 12 months and previous 30 days.

In columns 4 through 6 of Table 3, I divide the previously banked into those that owned an account within the last year and those that owned an account more than a year ago. Banked households serve as the omitted

TABLE 3
Impact of Choice to Close the Account and Time Unbanked on Household Food Security

	Very Low Food Security	Food Insecurity, 12 Months	Food Insecurity, 30 Days	Very Low Food Security	Food Insecurity, 12 Months ^a	Food Insecurity 30 Days
	(1)	(2)	(3)	(4)	(5)	(6)
Never banked	0.026 (0.018)	0.032 (0.034)	0.016 (0.023)	0.025 (0.018)	0.037 (0.034)	0.016 (0.023)
Previously banked, bank closed account	0.084*** (0.031)	0.124* (0.073)	0.092** (0.044)			
Previously banked, self-closed account	0.035* (0.020)	0.037 (0.038)	0.025 (0.025)			
Previously banked, banked within last year				0.059** (0.026)	0.109** (0.055)	0.071** (0.035)
Previously banked, banked more than one year ago				0.030 (0.019)	0.049 (0.039)	0.025 (0.025)
<i>t-test of differences in coefficients</i>						
Never banked and bank closed account	<i>p</i> = .083	<i>p</i> = .237	<i>p</i> = .111			
Never banked and self-closed account	<i>p</i> = .695	<i>p</i> = .916	<i>p</i> = .760			
Bank closed account and self-closed account	<i>p</i> = .158	<i>p</i> = .274	<i>p</i> = .174			
Never banked and banked within last year				<i>p</i> = .267	<i>p</i> = .247	<i>p</i> = .166
Never banked and banked more than one year ago				<i>p</i> = .836	<i>p</i> = .792	<i>p</i> = .779
Banked within last year and banked more than one year ago				<i>p</i> = .353	<i>p</i> = .360	<i>p</i> = .261
Observations	5,231	5,231	5,231	5,228	5,228	5,228

Notes: Author's calculations using households with children in both the December 2008 and January 2009 CPS. All sample statistics weighted by the FSS weight. Mean marginal effects from probit specifications of equation 1 included above, except estimates for the food security outcome over the previous 12 months use a linear probability model due to lack of convergence with a probit approach. Robust standard errors provided in parentheses. Covariates include household income relative to poverty, age of the primary earner, age of the oldest child, race/ethnic status, nativity, household composition, educational attainment, employment, state unemployment rate, state maximum EITC, and state minimum wage. See text for further detail.

^aEstimated with a linear probability model because probit estimates would not converge. Statistical significance is denoted as: ****p* < .01, ***p* < .05, **p* < .1.

group. Relative to banked households, unbanked households that owned an account within the last year experienced a 5.9 percentage point increase in the likelihood of very low food security, a 10.9 percentage point increase in the likelihood of food insecurity, and a 7.1 percentage point increase in the likelihood of food insecurity during the previous 30 days. Coefficient estimates for the never banked and for households banked more than one year ago are positive but statistically insignificant. There is no statistical difference between the coefficient estimates.

The greater likelihood of food insecurity among households with a more recent account closure suggests a common shock better explains why previously banked households experience food insecurity. While economic shocks are by their nature transitory, the large and significant increase in food insecurity over the previous 30 days suggests that the shock has persisted to the most recent month. One possible reason is a lack of slack in the household's budget, as well as lack of formal and informal opportunities to borrow, both which forces the household to reduce their food spending because other spending items, like rent or car payments, are fixed.

Finally, I examine the main reason that the unbanked provided for not owning an account. I group these reasons into four types: customer service, economic, financial management skills, and other. Nearly half (49.40%) of the unbanked report economic reasons, followed by other reasons (21.22%), then customer service (15.27%), and financial management reasons (14.11%).⁴ I estimate regressions using these self-reported reasons in Table 4. Compared to banked households, unbanked households citing economic reasons for not owning an account are 5.3 percentage points more likely to be very low food secure, 11.8 percentage points more likely

4. For the previously banked, customer service reasons include inconvenient hours or location, language barriers, lack of trust or comfort with banks, or banks not offering desired services like check cashing; did not write enough checks; economic reasons include high minimum balance requirements, high service charges, too little money for an account, banks took too long to clear checks; financial management skills include they could not manage or balance a bank account, experienced too many overdrafts or bounced too many checks, or did not need or want a bank account; and other reasons include write-in reasons, none of these, or could not pick a single reason. For the never banked, customer service reasons include inconvenient hours or locations, language barriers, lack of trust or comfort in banks, not writing enough checks to make it worthwhile, or lack of services, like check cashing; Economic reasons include minimum balance requirements or service charges too high, not having enough money to need a bank account, credit problems that prevent the opening of an account, and banks taking too long to clear; financial management skills include an inability to manage or balance a bank account, lack of knowledge about how to open a bank account, not seeing the value of having a bank account, or bouncing too many checks or making too many overdrafts for an account; and other reasons for not owning an account include lack of proper documentation, inability to choose a single reason, or volunteering another answer.

TABLE 4

Mean Marginal Effects of Relationship between Food Insecurity and Reasons Unbanked Report Not Owning an Account

	Very Low Food Security	Food Insecurity, 12 Months ^a	Food Insecurity, 30 Days
	(1)	(2)	(3)
Customer service	-0.023 (0.036)	-0.047 (0.061)	-0.049 (0.043)
Economic	0.053*** (0.019)	0.118*** (0.039)	0.066*** (0.025)
Financial management skills	0.051 (0.032)	-0.002 (0.067)	0.024 (0.043)
Other	0.035 (0.027)	0.005 (0.054)	0.006 (0.037)
<i>t-test of differences in coefficients</i>			
Customer service and economic	$p = .051$	$p = .018$	$p = .016$
Economic and financial management skills	$p = .948$	$p = .109$	$p = .362$
Financial management skills and other	$p = .696$	$p = .931$	$p = .744$
Economic and other	$p = .565$	$p = .076$	$p = .146$
Customer service and financial management	$p = .111$	$p = .612$	$p = .222$
Observations	5,053	5,053	5,053

Notes: Author's calculations using households with children in both the December 2008 and January 2009 CPS. All estimates weighted by the FSS weight. Robust standard errors provided in parentheses. Covariates include household income relative to poverty, age of the primary earner, age of the oldest child, race/ethnic status, nativity, household composition, educational attainment, employment, state unemployment rate, state maximum EITC, and state minimum wage. See text for further detail.

^aEstimated with a linear probability model because probit estimates would not converge.

Statistical significance is denoted as: *** $p < .01$, ** $p < .05$, * $p < .1$.

to be food insecure, and 6.6 percentage points more likely to be food insecure over the last 30 days; estimates for financial management reasons are statistically insignificant. Unbanked households citing economic reasons are statistically different from those citing customer service reasons. In fact, customer service reasons appear the least related to food insecurity: point estimates are negative, although insignificant, and significantly different from economic reasons.

A final explanation is that the previously banked appear worst off because they are responding to asset tests in the SNAP by strategically closing their account to ensure financial assets do not disqualify them. Although the unbanked are more likely to receive SNAP, strategic account closure does not appear to be the explanation: the never banked and the formerly banked are equally as likely to receive SNAP; those with bank initiated closures are just as likely to receive SNAP as those that closed the

account themselves; SNAP receipt is correlated with owning an account more than a year ago rather than within the year; and, SNAP receipt is most related to financial management reasons for unbanked status.⁵

Can State Banking Policy Affect Food Insecurity?

By affecting the availability and features of accounts, laws and regulations alter the cost of bank account ownership. As a result, they could affect the relationship between owning a bank account and consumption inadequacy. One such law, enacted in seven states, is lifeline banking legislation that requires banks to offer low-cost bank accounts.⁶ These requirements are ineffective at “banking the unbanked,” but should increase the availability of accounts appropriate for LMI households and reduce account closures (Doyle, Lopez, and Saidenberg 1998; Washington 2006).⁷

In Table 5, I interact a lifeline legislation indicator with the detailed breakdown of banking status. Compared to banked households, formerly banked households in states without lifeline legislation are 4.1 percentage points more likely to be very low food secure, 6.6 percentage points more likely to be food insecure, and 4.3 percentage points more likely to be food insecure over the previous 30 days. While not statistically different from the formerly banked in states with lifeline legislation, the sign of the point estimates suggests that lifeline legislation assists banked households with obtaining low-cost accounts appropriate for their needs.

Use of Financial Transaction Products Offered by Nonbanks

A related question is how use of AFS transaction products—nonbank check cashers and nonbank money order—relate to the risk of food insecurity and if this risk differs by banking status. In Table 6, I estimate equation 1 for nonbank check cashers (panel A) and nonbank money orders (panel B). Using a nonbank check casher at least once or twice a year is related to a 3.3 percentage point increase in very low food security (column 1), a 7.5 percentage point increase in food insecurity (column 3), and a 4.5 percentage point increase in food insecurity over the previous 30 days (column 5). Ever using a nonbank money order is related to similar

5. Ratcliffe et al. (2016) find SNAP households in states that waive asset tests are more likely to own a bank account.

6. These states are Illinois, Massachusetts, Minnesota, New Jersey, New York, Rhode Island, and Vermont.

7. Similar to the literature, I do not find a relationship between account ownership and lifeline legislation. Point estimates are positive, but small and insignificant.

TABLE 5

Effect of Lifeline Legislation on Household Food Security

	Very Low Food Security	Food Insecurity, 12 Months ^a	Food Insecurity, 30 Days
	(1)	(2)	(3)
Formerly banked in state without lifeline legislation	0.041** (0.018)	0.066* (0.035)	0.043* (0.023)
Formerly banked in state with lifeline legislation	0.028 (0.040)	0.112 (0.088)	0.023 (0.056)
Never banked in state without lifeline legislation	0.031 (0.020)	0.049 (0.038)	0.014 (0.025)
Never banked in state with lifeline legislation	-0.001 (0.046)	-0.019 (0.072)	0.029 (0.053)
Lifeline legislation	-0.001 (0.018)	-0.002 (0.027)	0.006 (0.024)
<i>t-test of differences in coefficients</i>			
With and without lifeline legislation, formerly banked	$p = .749$	$p = .624$	$p = .741$
With and without lifeline legislation, never banked	$p = .524$	$p = .387$	$p = .803$
Observations	5,231	5,231	5,231

Notes: Author's calculations using households with children in both the December 2008 and January 2009 CPS. All estimates weighted by the FSS weight. Robust standard errors provided in parentheses. States with lifeline legislation include Illinois, Massachusetts, Minnesota, New Jersey, New York, Rhode Island, and Vermont. Covariates include household income relative to poverty, age of the primary earner, age of the oldest child, race/ethnic status, nativity, household composition, educational attainment, employment, and the state unemployment rate. See text for further detail.

^aEstimated with a linear probability model because probit estimates would not converge.

Statistical significance is denoted as: *** $p < .01$, ** $p < .05$, * $p < .10$.

increases in food insecurity: a 4.3 percentage point increase in very low food security, a 7.4 percentage point increase in food insecurity, and a 4.9 percentage point increase in food insecurity over the previous 30 days.

The relationship between use of AFS financial transaction providers and food insecurity may differ across banked and unbanked households. Unbanked households often must rely on these financial transaction products and work examining nonbank check cashers concludes decisions to be unbanked and use check cashers are made simultaneously (Rhine, Greene, and Toussaint-Comeau 2006). In contrast, banked households could receive these services from their bank and AFS use suggests their account is inadequate for their needs.

In the even columns of Table 6, I interact unbanked status with use of nonbank check cashers at least a few times per year (panel A) and with use of nonbank money orders at least a few times per year (panel B). Interaction terms are statistically significant, except for the very low

TABLE 6

Mean Marginal Effects of Nonbank Check Cashers and Nonbank Money Orders on Household Food Security

	Very Low Food Security		Food Insecurity, 12 Months		Food Insecurity, 30 Days	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>(A) Use of a nonbank check casher on food security</i>						
Use a nonbank check casher at least once or twice a year	0.033*** (0.012)	0.040*** (0.015)	0.075*** (0.019)	0.119*** (0.029)	0.045*** (0.016)	0.063*** (0.020)
Use a nonbank check casher at least once or twice a year * unbanked		-0.034 (0.026)		-0.123*** (0.053)		-0.060* (0.035)
Unbanked		0.034** (0.017)		0.070** (0.032)		0.033 (0.021)
Observations	5,121	5,121	5,121	5,121	5,121	5,121
<i>(B) Use of a nonbank money order on food security</i>						
Use a nonbank money order at least once or twice a year	0.043*** (0.010)	0.050*** (0.011)	0.074*** ^a (0.017)	0.084*** (0.017)	0.049*** (0.013)	0.056*** (0.015)
Use a nonbank money order at least once or twice a year * unbanked		-0.046* (0.025)		-0.088** (0.039)		-0.040 (0.032)
Unbanked		0.049** (0.020)		0.076** (0.031)		0.039 (0.026)
Observations	5,117	5,117	5,117	5,117	5,117	5,117

Notes: Author's calculations using households with children in both the December 2008 and January 2009 CPS. All estimates weighted by the FSS weight. Robust standard errors provided in parentheses. Covariates include household income relative to poverty, age of the primary earner, age of the oldest child, race/ethnic status, nativity, household composition, educational attainment, employment, state unemployment rate, state maximum EITC, and state minimum wage. See text for further detail.

^aEstimated with a linear probability model because probit estimates would not converge.

Statistical significance is denoted as: *** $p < .01$, ** $p < .05$, * $p < .1$.

food security outcome with nonbank check cashing use, and negative; point estimates for AFS financial transaction products are positive and statistically significant. Compared to banked households that use a check casher, unbanked households using a check casher at least once or twice a year do not experience an increase in very low food security but are 12.3 percentage points less likely to experience food insecurity over the past year and 6.0 percentage points less likely to experience food insecurity over the last 30 days. Compared to banked households that use nonbank money orders, unbanked households using nonbank money orders are 4.6

percentage points less likely to be very low food secure and 8.8 percentage points less likely to be food insecure; they experience no change in the risk of food insecurity over the last 30 days.

Thus, banked households using AFS financial transaction products relates to food hardship. Liquidity constraints are one possible explanation. Banked households may use check cashers to gain immediate access to funds, rather than wait for the bank to clear a check; a payee, such as a landlord, may require banked households to remit payment with a money order due to low funds or poor credit. Suboptimal use of a bank account because of poor financial management skills is another explanation. Finally, indirect costs of bank account ownership may be important, for example transportation and time costs if a bank branch is not conveniently located.

To shed light on these, I explore the main reason given for using nonbank transaction services by classifying these reasons into customer service, economic, and other reasons; for nonbank check cashers, I include unbanked as an additional category.⁸ For households that used nonbank check cashers at least once or twice a year, most indicated they did so for customer service reasons (44.2%) or not owning a bank account (33.7%), with a smaller portion choosing economic reasons (16.8%) and other reasons (5.3%); for households that used nonbank money orders more than once or twice a year, the main reason was predominantly customer service reasons (64.5%), followed by economic (26.0%), with the remainder (9.6%) choosing other reasons.

To understand if reasons for using AFS products relate to food insecurity, I estimate these relationships in Table 7 for nonbank check cashers. Relative to households not using a nonbank check casher more than once or twice per year, economic reasons, unbanked, and other reasons are significantly related to all measures of food hardship. Other reasons, however, appear most important. Nonbank check cashing customers that cite other reasons are related to a significantly greater risk of both food insecurity

8. For nonbank money orders, I classified as follows: customer service reasons include banks do not sell money orders and nonbank money order providers are more convenient or comfortable than a bank; economic reasons include banks charge more for money orders; other reasons include a write-in reason. For nonbank check cashers, reasons are grouped as follows: customer service reasons include the nonbank check casher is more convenient or comfortable than a bank and nonbank check cashers require fewer identification requirements; economic reasons include an immediate need to access the funds from the check and banks charge higher prices for check cashing; unbanked indicates the respondent indicated the main reason was lack of a bank account. Other reasons include write-in reasons. The January 2009 CPS did not collect reasons related to financial management skills for using an AFS financial transaction provider.

TABLE 7

Mean Marginal Effects of Reasons Why AFS Financial Transaction Product Users at Least a Few Times per Year on Food Security Measures

	Very Low Food Security	Food Insecurity, 12 Months	Food Insecurity, 30 Days
	(1)	(2)	(3)
<i>(A) Reasons given by households using nonbank check cashing at least a few times per year</i>			
Customer service	0.008 (0.017)	0.065** (0.027)	0.034 (0.022)
Economic	0.060** (0.016)	0.087** (0.043)	0.035 (0.037)
Unbanked	0.038* (0.020)	0.056* (0.032)	0.045* (0.063)
Other	0.096** (0.043)	0.267*** (0.080)	0.160** (0.063)
<i>t-Test of differences in coefficients</i>			
Customer service and economic	$p = .089$	$p = .660$	$p = .979$
Economic and other	$p = .466$	$p = .047$	$p = .085$
Customer service and unbanked	$p = .215$	$p = .824$	$p = .728$
Economic and unbanked	$p = .497$	$p = .558$	$p = .817$
Customer service and other	$p = .051$	$p = .017$	$p = .057$
Unbanked and other	$p = .211$	$p = .014$	$p = .090$
Observations	5,114	5,114	5,114
<i>(B) Reasons given by households using nonbank money order users at least a few times per year</i>			
Customer service	0.030** (0.012)	0.028 (0.018)	0.031** (0.015)
Economic	0.057*** (0.015)	0.084*** (0.027)	0.072*** (0.020)
Other	0.080*** (0.023)	0.124*** (0.046)	0.102*** (0.031)
<i>t-Test of differences in coefficients</i>			
Customer service and economic	$p = .097$	$p = .020$	$p = .067$
Economic and other	$p = .387$	$p = .368$	$p = .384$
Customer service and other	$p = .037$	$p = .014$	$p = .030$
Observations	5,112	5,112	5,112

Notes: Author's calculations using households with children in both the December 2008 and January 2009 CPS. All estimates weighted by the FSS weight. Robust standard errors provided in parentheses. Covariates include household income relative to poverty, age of the primary earner, age of the oldest child, race/ethnic status, nativity, household composition, educational attainment, employment, state unemployment rate, state maximum EITC, and state minimum wage. See text for further detail.

Statistical significance is denoted as: *** $p < .01$, ** $p < .05$, * $p < .1$.

over the previous 12 months and food insecurity over the previous 30 days than those citing economic reasons or unbanked reasons.

In panel B, I investigate reasons for using a nonbank money order at least once or twice per year. Relative to those who have not used a nonbank money order at least once or twice per year, both other reasons

and economic reasons are more related to food insecurity. Moreover, money order customers citing other reasons and economic reasons are significantly different than those citing customer service reasons in their food insecurity.

For both types of nonbank transaction products, other reasons, economic reasons, and not owning an account are significantly correlated with food insecurity. Because other reasons reflect idiosyncratic responses not captured by the survey, they are difficult to interpret. However, using AFS transaction products due to the prices charged by banks, liquidity constraints, or not owning a bank account are all related to experiencing difficulty achieving consumption adequacy.

Does Nonbank Check Cashing Cause Food Insecurity?

Estimates thus far establish correlations between financial products and food insecurity rather than indicate that specific financial products *cause* food insecurity. To address bias from unobservable household characteristics, I adopt an instrumental variable approach to examine the relationship between nonbank check cashers and food insecurity.⁹ Plausibly exogenous variation arises from state-level decisions to not regulate check cashers with a limit on fees, a registration requirement or a permit.¹⁰ Without regulation, the supply of check cashing services increases and, because demand is inelastic, households will be more likely to use these services (Caskey 1991, 2002; McDevitt and Sojourner 2016). The two-stage least squares (2SLS) equation is as follows:

$$\begin{aligned} \text{Pr}(\text{CheckCash}) = & \gamma_1 + \gamma_2 \text{StateLaws} + \gamma_3 \text{Demo} \\ & + \gamma_4 \text{Econ} + \gamma_5 \text{StatePolicy} + \eta, \end{aligned} \quad (2)$$

$$\begin{aligned} \text{Pr}(\text{FoodInsecurity}) = & \delta_1 + \delta_2 \text{CheckCash} + \delta_3 \text{Demo} \\ & + \delta_4 \text{Econ} + \delta_5 \text{StatePolicy} + v. \end{aligned} \quad (3)$$

The coefficient of interest is δ_2 which reflects the effect of utilizing a nonbank check casher on food insecurity for the marginal household. The 2SLS estimate should still be interpreted cautiously as a causal estimate

9. An instrumental variable approach for bank account ownership and nonbank money orders would be ideal but a suitable instrument could not be identified.

10. These states are Alabama, Alaska, Colorado, Idaho, Iowa, Kansas, Michigan, Missouri, Montana, Nebraska, New Hampshire, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming.

TABLE 8

Instrumental Variable Estimates for Use of Nonbank Check Cashier on Food Security

Nonbank Check Casher at Least a Few Times a Year			
(A) First-Stage Estimate	(1)		
State does not regulate check cashers	0.029** (0.014)		
Observations	5,114		
(B) Reduced Form Estimates			
	Very Low Food Security (1)	Food Insecurity, 12 Months (2)	Food Insecurity, 30 Days (3)
State does not regulate check cashers	-0.011 (0.011)	-0.021 (0.017)	-0.022 (0.014)
Observations	5,114	5,114	5,114
(C) 2SLS Estimates			
	Very Low Food Security (1)	Food Insecurity, 12 Months (2)	Food Insecurity, 30 Days (3)
Nonbank check cashier at least a few times a year	-0.348 (0.403)	-0.760 (0.694)	-0.754 (0.601)
Observations	5,114	5,114	5,114

Notes: Author's calculations using households with children in both the December 2008 and January 2009 CPS. All estimates weighted by the FSS weight. Robust standard errors provided in parentheses. Covariates include household income relative to poverty, age of the primary earner, age of the oldest child, race/ethnic status, nativity, household composition, educational attainment, employment, state unemployment rate, state maximum EITC, and state minimum wage. See text for further detail.

Statistical significance is denoted as: *** $p < .01$, ** $p < .05$, * $p < .1$.

because it is unknown if the household utilized a check cashier before or after a spell of food insecurity.

Table 8 presents these results. Panel A presents estimates from equation 2, the first-stage equation, to demonstrate the relationship between regulation and use of a nonbank check cashier at least once or twice a year. In states that do not regulate check cashing, households are 2.9 percentage points more likely to utilize a nonbank check cashier at least a few times a year. This corroborates the literature and suggests that these regulations do change consumer behavior.

Table 8B presents the reduced-form estimates that reflect the effect of check cashing regulations on food insecurity. Point estimates are negative but statistically insignificant, indicating that these regulations are not correlated with food insecurity.

The full specification 2SLS model is included in Table 8C. These estimates reflect the local average treatment effect described by Imbens and Angrist (1994), or the effect of nonbank check cashers on those who would otherwise be unable to use a check casher if the state regulated these providers. Estimates are negative, large in magnitude, but statistically insignificant.¹¹ The negative sign, along with the importance of economic reasons for using a nonbank check casher, suggests that patronizing a nonbank check cashing could be addressing household liquidity constraints. The large magnitude suggests that, with more precise point estimates, the effect would be important.

DISCUSSION

All households face financial decisions that could alter their risk of food insecurity. Using households in both the December 2008 and January 2009 CPS, I find strong evidence that, after controlling for other factors, forgoing a bank account or using an AFS transaction product is correlated with food insecurity. Currently unbanked but previously banked households, particularly those banked within the last year and those with a bank initiated closure, appear worst off. Economic reasons for exiting the banking system appear the most plausible explanation, but financial management skills could play a role. The previously banked in states without lifeline legislation are more likely to experience food insecurity, suggesting that policies to expand basic accounts have positive spillovers in reducing material hardship.

Households that use nonbank check cashers or nonbank money orders are more likely to experience food insecurity. Banked households that utilize AFS financial transaction products—underbanked households—are more likely to experience food insecurity than unbanked households. While idiosyncratic reasons for using AFS products have the largest relationship with food insecurity, economic reasons and lack of a bank account are also important factors. Using an instrumental variable approach, I find that check cashing services do not cause food insecurity and, if anything, could reduce food hardship by providing needed liquidity.

This study provides insight into the potential impact that financial services have on food security. The findings come with a number of caveats. Most importantly, large and significant correlations do not prove that lacking a bank account or using an AFS transaction product *causes*

11. The LATE does not provide insight into the average effect of nonbank check cashers in the overall population but is relevant to assessing how consumers respond to changes in check cashing access.

food insecurity. Although a plausibly exogenous instrument was identified for nonbank check cashers, imprecise estimates limit causal conclusions; a lack of valid instruments for bank account ownership and nonbank money orders, as well as the importance of idiosyncratic reasons for using these products, makes it difficult to draw strong conclusions. More work is needed to tease out these effects, including improved measures of the timing and frequency of use of these financial services relative to any spell of food insecurity.

Still, the greater risk of food insecurity facing unbanked and underbanked households with children and the relatively high prices that those at-risk for material hardship pay for financial transactions suggests that this should be a source of policy concern. While the lack of casual evidence limits clear policy prescriptions, this study does suggest that addressing the problem of food insecurity in households with children may benefit from a multifaceted approach that addresses their banking and financial transaction needs, in addition to food assistance and income support.

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