

THE IMPACTS OF PAYDAY LOAN USE ON THE FINANCIAL WELL- BEING OF SOCIAL SECURITY BENEFICIARIES

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Abstract

This paper studies the impact of payday loan borrowing on the financial well-being of Social Security (SS) income and Supplemental Security Income (SSI) receivers. Specifically, it focuses on the borrowing behaviors of low-wealth, Old-Age, Survivors, Disability Insurance program (OASDI) and SSI beneficiaries who rely on alternative financial services (AFS), such as payday lending. A significant share of low-income and low-wealth population experience financial hardship and pay excessive fees and interest when they borrow from alternative financial service providers. In 2009 17 percent of households in the U.S. were considered under-banked because they both maintained bank accounts and relied on AFS (FDIC 2009). Using data from the Current Population Survey (CPS) unbanked and under-banked supplements and Survey of Consumer Finances (SCF), this research investigates the following research questions: 1) Are Social Security Administration (SSA) beneficiaries more likely to use payday loans than non-SSA recipients? 2) How does payday loan use vary by income, age, and education among SSA beneficiaries? 3) How does receiving income from SSA affect payday loan use? Our findings suggest that there is little or no demographic variation between SSA beneficiaries and non-SSA beneficiaries who use payday loans. However, being an SSA beneficiary increases the likelihood of receiving payday loans. Lower-income SSA beneficiaries use payday loans more intensively. Borrowing behaviors of lower-income SSA beneficiaries, especially from AFS, are understudied in the literature. This paper attempts to fill this gap.

Key words: payday lending, consumer finance, SSA recipients, predatory lending

JEL Codes : D14, D18, G21

1. Introduction

This paper explores whether the use of payday loans among social security beneficiaries negatively affects their financial well-being. Specifically, it studies the borrowing behaviors of low-wealth social security recipients who rely on alternative financial services, including payday lending. A significant share of the low-income and low-wealth population experiences financial hardship and pay excessive fees and interest when they borrow from alternative financial service providers (AFS). The Social Security Administration (SSA) is concerned with income security and financial well-being of vulnerable populations. The main goal of this paper is to explore how payday loans affect the long-term financial well-being of OASDI and SSI beneficiaries.

In 2009, 17% of U.S. households were under-banked because they both maintained bank accounts and relied on AFS (FDIC 2009). Approximately 12 million Americans use payday loans each year (PEW 2014). Among these households, some are the beneficiaries of OASDI and SSI. Based on the information retrieved from the Current Population Survey (CPS) unbanked/under-banked supplements and Survey of Consumer Finance (SCF) data, we estimate that about 1.8 million Social Security recipients use payday loans on an annual basis.

Payday loans are small, unsecured, short-term, easy to get, and high-cost credit products (Stegman 2007). The borrower writes a check for the amount of the loan and its fee. The check postdate corresponds to the borrower's next pay date. If the borrower fails to pay off the loan by the date posted on the check, the lender can deposit the check. Receiving regular benefits makes Social Security Administration (SSA) recipients less risky and, therefore, more attractive borrowers. If used more frequently, these high-cost payday loans and other alternative financial services can negatively affect the SSA beneficiaries' financial security in retirement. A recent study shows that SSA recipients use payday loans more frequently close to the SSA benefit payment dates and the amount of borrowing increases with the length of the pay period (Leary and Wang 2016).

This paper seeks to answer the following research questions: 1) Are SSA beneficiaries more likely to use payday loans than non-SSA recipients? 2) How does payday loan use vary by income, age, and education among SSA beneficiaries? 3) How does receiving income from SSA affect payday loan use? 4) How do financial literacy and the aspect of the industry characterized

as predatory (Skiba and Tobacman 2007; Campbell et al. 2011) affect the intensity of payday loan use among SSA beneficiaries?

Borrowing behaviors of lower-income SSA beneficiaries, especially from AFS, are understudied in the literature. Our study attempts to fill this gap. It finds that payday loan users among SSA recipients are mostly low-income, lack college education, experience financial hardship and previously were denied credit. To protect the consumers from the negative impacts of payday lending, states, federal agencies and consumer advocate groups have designed and implemented various regulations and pilot programs (PEW 2014), ranging from state-level bans to efforts to improve financial literacy among payday loan consumers and providing new small credit loans for vulnerable populations. Of these measures, lower-cost small credit loans or a similar strategy to address cash flow timing issues may alleviate financial hardship and decrease the demand for payday loans among SSA recipients.

This research contributes to the mission of the Social Security Administration's interest in the adequacy of benefits because borrowing from alternative financial services such as payday loans and other (AFS) products, on the one hand, allows consumers to spread out temporary income changes in the short-run but on the other hand it may cause them to face economic and/or financial insecurity in the long-run.

This paper contributes to the literature by studying (a) the frequency and reasons for payday loan use among the OASDI and SSI beneficiaries, (b) how using payday loans affects the long-term financial well-being of the OASDI and SSI receivers, and (c) whether payday loan use increases demand for other AFS including pawnshops and rent-to-own loans.

2. Literature Review

Previous research on payday lending focused almost exclusively on the impact of payday loans on specific demographics – minorities, low-income borrowers –, their consequences and access to other credit types while paying little or no attention to this vulnerable subset of the older population. Most payday loan users are in fragile economic status. Almost 90% of borrowers have outstanding credit balances; many do not have credit left on their existing cards (Elliehausen 2009). If payday loans are used only rarely, their long-term impacts could be minor or even positive compared to the cost of a late utility bill or a bounced check (Campbell et al.

2011). Most borrowers receive multiple loans in a year. Occasionally, a loan from one lender is used to pay another (Elliehausen 2009). Melzer (2011) documented that access to payday loans increased financial hardship. He showed that payday loan customers had difficulty in paying mortgage, rent, and utility bills; experienced a higher rate of foreclosures and evictions; and had to delay needed medical and dental cares. However, having limited access to regular credit options may cause consumers to seek loans from payday lenders (Bhutta et al. 2015). The authors found that payday loan applicants have weak credit history. Initial payday loan applications occur when consumers have almost no credit available on credit cards (Bhutta et al. 2015). Because of budgetary mistakes, some consumers face cash flow problems and seek loans from payday lenders (Agarwal, Skiba, and Tobacman 2009; Carter, Skiba, and Tobacman 2011). Carrell and Zinman (2014) find that access to this type of borrowing has adverse impacts on job performance and readiness of military personnel.

Lack of banking services, financial literacy and/or knowledge, and funds to pay off the loans further worsen the financial well-being of payday loan consumers as they become trapped in an avoidable continuous debt cycle. About 40 percent of unbanked¹ population use some type of AFS products including payday loans (Federal Reserve 2019). After the U.S. SSA decided to exclusively transition to electronic payments in March 2013 (Anderson et al. 2017), almost all SSA beneficiaries started to receive their payments through the banking system. Electronic payments may reduce demand for check-cashing services, but they are not expected to change the demand for payday loans. Consumers turn to payday lenders when they do not have access to regular banking loans and credit cards (Bhutta et al. 2015).

Birkenmaier and Qiang (2016) found that for more than half of the U.S. population, it is difficult to maintain substantial savings; while Agarwal et al. (2009) point out that payday loan borrowing reflects long-term liquidity loss from other sources such as credit cards. Payday loan use cannot be entirely attributed to lack of financial literacy. Using lender transaction data, Mann (2014) found that borrowers, on average, are rational about their decisions to seek loans from payday lenders. He showed that most borrowers provided accurate description of their ability to repay their payday loans.

¹ Those who do not have checking or saving accounts (FDIC 2009).

The U.S. states do not have uniform payday loan regulations. Fifteen states², including the District of Columbia, have either banned or passed very restrictive regulations against payday lending (Pew 2014). Some states have very lax rules, and others implemented rate caps and limited the number of outstanding loans. Payday lenders usually locate in lower-income neighborhoods (Avery and Samolyk 2011). In payday lending-permitting states there is a high correlation between the concentration of payday lending stores and the concentration of poverty (Campbell et al. 2010). A small number of papers estimate the effect of regulation on access to payday lending. Bhutta et al. (2016) used difference-in-difference analysis and concluded that such policies are effective at reducing payday lending. However, consumers respond by shifting to other high-interest credit types rather than to traditional credit instruments. This suggests that payday loans are always more attractive due to the ease of approval and that restricting access may make consumers worse off. Fitzpatrick et al. (2014) explored the relationship between payday loan access and material well-being and found that payday loan borrowing helps some households to avoid food insecurity.

Leary and Wang (2016) showed that budgeting errors could be a driving factor for payday loan use. They estimated that budgeting errors contribute up to 15% of payday loan volume. According to Leary and Wang (2016), some SSA recipients are unable to adjust to predictable income variations, and the annual excess costs of using payday loans are between \$25 and \$35 million for this vulnerable group. Cash flow timing issues seem to increase demand for payday loans and cause financial hardship. A recent study (Allen et al. 2017) found that the frequency of monthly payday loan borrowing was reduced by 11% due to early Medicaid expansion. Consequently, both the number of payday loans and the amount of payday loan debt decreased. However, without data linking payday lending to insurance status, they were unable to conclude who saw a reduction. Regardless, they concluded that Medicaid reduced high-interest loan demand and improved American families' financial well-being.

Our study focuses on social security recipients because this population is diverse in terms of age, income, wealth, and other demographic variables. As documented by Leary and

² The states that banned or have very restrictive regulations against payday lending are New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Delaware, Maryland, DC, North Carolina, Georgia, Arizona, Arkansas and Montana (Pew, 2014).

Wang (2016) when financially vulnerable SSA recipients experience cash flow timing issues, their demand for payday loans increases.

3. Data and Methods

This study draws information from CPS unbanked/under-banked supplements, and SCF. These datasets provide information on different aspects of consumer demand for payday loans. They allow us to control for a broader set of demographic variables that are correlated with payday loan use. These nationally representative samples also provide additional information on the factors that make payday loans more attractive compared to bank loans and credit cards. The Federal Deposit Insurance Corporation's (FDIC's) National Survey of Unbanked and Under-banked Households is a supplement to the Current Population Survey (CPS). It contains detailed information about consumer demand for various credit products including alternative financial services. The CPS unbanked/under-banked supplements do not provide information on whether the survey respondent or household head is a beneficiary of social security income. Therefore, we merged the CPS supplements with the Annual Social and Economic Supplement (ASEC) to have data on payday loan use and Social Security recipient status, along with other demographic and economic variables³. Since we merged the CPS monthly samples that belong to the surveys conducted in different months, our final merged dataset is significantly smaller than the original CPS unbanked and under-banked supplement.

We followed the data merging procedure applied by Butcher and Schanzenbach (2018). We merged observations by unique household and personnel identification numbers. We used the CPS unbanked/underbanked household weight in our regression analysis. Table A7 provides the weighted average values of all variables used in our analysis. After merging the CPS unbanked/under-banked sample, CPS March sample and ASEC sample, we ended up with 22,213, 10,222, and 9,224 households in 2009, 2011 and 2013, respectively. To check for biases that we may have built during merging, we compare our data set with the FDIC unbanked and

³ We first merged unbanked/under-banked supplements with the March supplement in the same year by matching at household and personal levels. Then we merged this dataset with the ASEC sample of the same year. We followed the data linking methodology used by IPUMS (see https://cps.ipums.org/cps-action/variables/group?id=h-core_linking).

under-banked data tables (<https://www.economicinclusion.gov/custom-data/>). Tables A1-A3 in the Appendix show that we have a smaller sample, but the average values of our key variables and those reported by FDIC tables are close. For example, the share of households who used payday loans was 3.6% in the FDIC column and 3.47 % in the CPS-ASEC column in 2009 (Table A1). The share of black households was 7.9% in the FDIC column and 7.83 in the CPS-ASEC column (Table A1). The summary statistics computed by our data and FDIC unbanked and under-banked data in Tables A1-A3 are very similar.

Table A4 presents the weighted averages of all CPS-ASEC variables used in our analysis. We created six age groups, five income groups, five education groups, and four racial and ethnic groups. Table A4 presents the share of the households in each of age, income, racial/ethnic, marital status, employment status and gender group. The share of Social Security income recipients, Supplemental Social Security income recipients and the share of the households who used Alternative Financial Services including payday loans, rent-to-own loans, pawnshops and tax refund anticipation loans are also reported in Table A4. To test whether the demands for payday loans and pawnshops are related, we included the share of the respondents who used pawnshops for various reasons including convenience, comfort, easy to qualify and others as independent variables.

To explore whether lack of access to low-cost credit products increased demand for payday loans we used SCF samples for comparable⁴ time. The SCF⁵ samples for 2010, 2013 and 2016

⁴They are Current Population Survey unbanked & under-banked supplements, Survey of Consumer and Finances (SCF) These cross-sectional datasets are publicly available for various years. The SCF data are available for 2010, 2013 and 2016. The CPS unbanked/under-banked supplements are available for the odd years between 2009 and 2017. To have comparable data, we use the CPS unbanked/under-banked supplements for 2009, 2011 and 2013. The dataset used in this research covers all 50 states including the District of Columbia for 2009, 2011, and 2013 years. We gathered both CPS and ASEC data from the Integrated Public Use Microdata Series (IPUMS) database. To obtain information on the Alternative Financial Services (AFS) we merged the CPS unbanked and under-banked supplements with the CPS-ASEC by using household and personal level identification codes. We merged three sets of datasets from various years: CPS-March, CPS-ASEC, and CPS- unbanked/under-banked January/June.

⁵ The SCF organizes data around the “head” of the household. The SCF survey provides information on the financial characteristics of the head and other members related to the head. When the head and the original respondent are different persons, the data are organized around the respondent.

include specific questions about credit history, financial literacy, and access to low-cost credit cards. Tables A5-A7 present the weighted average values of the demographic and economic variables including those related to financial literacy and access to low-cost credit cards. The question about financial literacy was only available in the 2016 SCF sample (Table A7). The SCF samples in 2010, 2013 and 2016 asked questions about credit card availability and the statuses of credit card applications⁶.

In the SCF data, imputation methods were used to populate missing observations⁷. We used both imputed and non-imputed observations in our estimations. Applying the technique from Hogarth et al. (2004), a variable is only considered significant if the coefficient estimate is significant at the 0.05 level in at least four of the five implicates. The coefficient estimates for aggregate implicates are used as reference. Tables A5-A7 in the Appendix present the weighted averages of all demographic and economic variables using SCF data. The values for the aggregate and each implicate are similar and consistent across the years.

We carry out our regression analysis at the household level. The personal level information used in our analysis is based on the responses from the household head or the survey respondent. SCF samples do not separately identify the statuses of the SS and SSI recipients. To create distinct SS and SSI recipient groups, we used information from two SCF survey questions. The SS recipient question asked whether respondents or their partners received Social Security Payments – including railroad retirement and SSI. The SSI variable was extracted from the SS recipient question in conjunction with another variable in the dataset which specified whether the respondent or anyone else in their household received income from Temporary Assistance for Needy Families (TANF), Supplemental Nutrition Assistance Program (SNAP), or other welfare or assistance programs such as SSI. If the respondent indicated “yes” to both questions, this

⁶ Respondents were asked about the statuses of their credit card applications. Tables A5-A7 present the responses to the questions about credit card application that were denied, applications that were approved for lower credit limits, and applications that were approved. The last question asked whether the respondent had a credit card.

⁷ The multiple imputation procedure generates five values for each missing value and is used to approximate the distribution of missing data. Imputations are stored as five consecutive replicates for each observation; therefore, the number of records in each dataset is five times the actual number. Data analysis on one implicate is possible, however, the benefits of the imputations would be lost and there may be bias in the results (Lindamood et. al, 2007).

household was considered as an SSI recipient. Since the SS recipient question does not include those who received income from TANF and SNAP, we were able to identify SSI recipients as a separate group. Then we created an SS binary variable by excluding the SSI recipients from the broader SS recipient group. Tables A5-A7 in Appendix show that the share of SSI recipients increased from about 3 percent to about 5 percent between 2010 and 2016.

4. Results

The summary tables (Tables A5-A7) present population shares in various demographic and income groups, and groups related to credit application status, SS and SSI beneficiary statuses. These population shares are comparable to those obtained from the CPS supplements (Table A4). Tables A5-A7 show that payday loan use among all households was 3.85 percent, 4.15 percent and 3.42 percent in 2010, 2013 and 2016 respectively. The share of payday loan borrowers computed using CPS-ASEC samples are 3.48 percent, 4.22 percent and 4.47 percent in 2009, 2011 and 2013, respectively. Compared to the general population, the SSI recipients used payday loans at higher rates while the SS recipients used payday loans at lower rates. Table 1 shows that among SSI recipients payday loan use was 9.1 percent in 2010, 5.7 percent in 2013 and 4.2 percent in 2016. For SS recipients these shares were 2.7 percent, 3.2 percent and 2.5 percent, respectively.

Table 1. Payday Loan Use among SS and SSI Recipients, SCF Data

	2010	2013	2016
All households	3.85%	4.15%	3.42%
SS recipients	2.7%	3.2%	2.5%
SSI recipients	9.1%	5.7%	4.2%

Source: Author's calculations based on 2010, 2013, and 2016 SCF samples (weighted).

Table 2 presents payday loan use by age groups. Among SSI recipients, 22 percent of the 65 years and younger group used payday loans in 2010. It seems that payday loan use was very high right after the 2008 recession. In every age group, SSI recipients used payday loans at significantly higher rates than their SS recipient counterparts. Although demand for payday loans

decreased between 2010 and 2016, still about 6 percent of the SSI recipients in the 65 and younger and 66-70 age groups used these loans.

Table 2. Payday Loan Use among SS and SSI Recipients by Age

Share of SS recipients who use payday loans (%)						
	2010		2013		2016	
Age Group	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
65 and younger	6.2	6.5	6.7	6.7	4.9	4.6
66-70	3.1	2.1	2.5	1.8	1.5	1.1
71 and older	0.6	0.5	1.5	1.2	1.6	1.1

Share of SSI recipients who use payday loans (%)						
Age Group	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
65 and younger	21.9	22.5	10.0	10.9	5.9	6.9
66-70	8.7	8.6	6.5	6.2	5.8	6
71 and older	3.3	3.6	3.4	3.8	2	2.1

Source: Author's calculations based on 2010, 2013 and 2016 SCF samples.

Table 3 presents the population share of SS and SSI recipients who provided “yes” answers to the questions that asked whether the respondent or someone in the household used payday loans, pawnshops, tax-refund-anticipation loans and rent-to-own loans. This table indicates that SSI recipients used payday loans, pawnshops and rent-to-own loans very heavily. The share of SSI recipients who indicated that they used pawnshops increased from 12.48 percent to 15.51 percent, and those who indicated that they used rent-to-own loans increased from 9.12 percent to 11.57 percent between 2009 and 2013.

Table 3. Percentage of SSI and SS Recipients used Payday Loans, Pawn Shops, Tax Refund Anticipation Loans and Rent-to-Own Loans (weighted)

Alternative Financial Services	2009		2011		2013	
	SS	SSI	SS	SSI	SS	SSI
Payday loan	2.47	9.31	2.38	7.30	3.12	5.07
Pawnshop	3.19	12.48	4.78	15.33	5.64	15.51
Tax Refund Anticipation Loan	1.37	3.59	1.11	3.12	2.95	4.96
Rent-to-Own	2.18	9.12	2.72	9.07	3.02	11.57

Source: Author's calculations based on the merged data from January/ June-CPS, March-CPS and ASEC-CPS) samples.

Tables 4 lists the most important reasons identified for payday loan use. All households in SCF surveys indicated “emergency”/ “needed quick money”, “convenience”, “pay other bills/loans”, “only option” as the most important reasons for using payday loans in 2010, 2013 and 2016. In case of SS recipients, “emergency”/ “needed quick money”, and “convenience”, were the two top reasons for payday loan use in 2010, 2013 and 2016. About 40 percent of the SSI recipients responded that they used payday loans to “pay other bills/loans” in 2010 and 2013. In 2016 approximately 38 percent of the respondents indicated that the most important reason for payday loan use was “emergency”/ “needed quick money”. These results suggest that the SSI recipients rated financial hardship as one of the key reasons of payday loan use.

Table 4. Most Important Reasons for Payday Loan Use, %

	2010	2013	2016
All Households			
Emergency/"needed quick money"	30.5	25.9	26.7
"Convenient"	24.1	24.5	25.2
Pay other bills/loans	18.6	18.2	16.9
"Only option"	10.8	11.3	11.4
SS Recipients			
Emergency/"needed quick money"	34.04	24.3	32.3
"Convenient"	26.99	24.0	22.8
Pay other bills/loans	16.52	14.4	8.6
"Only option"	9.75	20.4	8.1
Help family	3.19	4.7	7.4
Buy medicine/medical payments	2.68		8.1
SSI Recipients			
Pay other bills/loans	39.91	40.8	
"Convenient"	25.29	12.0	22.8
Emergency/"needed quick money"	21.16	15.3	38.1
"Christmas"	4.69		
Pay utilities	4.49		
Buy medicine/medical payments			12.3
Help family			10.0
"Only Option"		32.0	6.5
Vehicle expenses other than gas	4.46		10.3

Source: Authors calculations based on 2010, 2013, and 2016 SCF samples (weighted). Values smaller than 2% are not reported.

4.1. Probit Regression Results using CPS Supplements

Table A8 presents the results of our Probit regressions where the dependent variable takes the value of 1 if anyone in the household used payday loans and 0 otherwise. We estimated Probit regressions by using the datasets created by merging CPS-ASEC and CPS unbanked/underbanked surveys for 2009, 2011 and 2013. We created independent variables to control for the variations in demand for payday loans in terms of economics and demographic characteristics including age, gender, race, Hispanic or non-Hispanic, marital status, labor force status, household income, and education⁸. To test whether the demand for payday loans is correlated with the demand for other AFS including pawnshops, rent-to-own, and tax refund anticipation loans, we included them as independent variables in our Probit regressions. Payday loans are regulated by states in the U.S. As of 2014, 13 states and D.C. either banned or implemented restrictive regulations against payday lending, and 37 states implemented less restrictive regulations. We created a dichotomous variable to control for the variation across states with respect to access to payday loans. To explore the relationship between demand for payday loans and pawnshops, we included the reasons for pawnshop use as independent variables in 2009 and 2011 regressions. This additional information on demand for pawnshops was not available in 2013. We used CPS unbanked and under-banked supplement's household weight to adjust for non-response in our Probit regressions in 2009, 2011, and 2013.

Table A8 confirms that the probability of payday loan use is higher among younger, unemployed, and African American households. States with more permissive payday loan regulations had higher incidence of payday loan use. Those who used pawnshops because of their easy access and convenience also used payday loans. Being an SS or SSI recipient does not increase the likelihood of receiving payday loans. The coefficient of the SS variable is statistically significant only in 2011. In all other years, both SS and SSI coefficients are

⁸ We use categorical measure (0/1 dummy variables) of each household characteristics to allow for nonlinear relationships. The base or excluded groups are: income below \$15,000, non-Hispanic, White, household-head under 24 years old, married, employed and less than a high school education. The dependent variable in each equation is coded as 1 if any member of the household used a payday loan and is coded 0 otherwise.

statistically insignificant. We had very few SSI recipients in 2013 and it was dropped from that year's regression.

Table A8 in the Appendix A indicates that the estimated coefficients of rent-to-own loans, pawnshop convenience and ease, and tax refund-anticipation loans were positive and statistically significant. Table A4 shows that between 2009 and 2013 the share of the population that used payday loans, pawnshops, rent-to-own loans, and tax refund-anticipations loans steadily increased. Our results show that the consumers who use payday loans are also more likely to use other AFS.

4.2. Probit Regression Results using SCF Samples

Tables A9-A13 present the results of our Probit regressions using SCF data in 2010, 2013 and 2016. We present the results of the regressions that used both the imputed data (all implicates) and the random samples that did not include the imputed data (implicates 1-5). The estimated coefficients of each single implicate (implicates 1-5) and the aggregate data based on the imputed data (all implicates) are similar in terms of size and significance. Tables A9, A11 and A13 present the Probit regression results for 2010, 2013 and 2016. These regressions do not include SS and SSI recipient status as independent variables. Tables, A9, A11, and A13 confirm that the incidence of payday loan use is higher among borrowers who are younger, less educated, unemployed, African American, from female-headed or lower-income households, and those who applied for credit and were denied or received a lower amount than they had applied for. These tables also show that having access to credit cards lowers the likelihood of receiving payday loans. SCF asked the respondents questions to estimate a score for financial literacy in 2016. The estimated coefficient was not statistically significant, suggesting that the demand for payday loans could not be explained by the lack of financial literacy in 2016.

To test whether SS recipients and SSI recipients use payday loans at higher rates compared to those with similar demographic and economic characteristics in the general population, we included SSI recipient status and SS recipient status as independent variables in our regressions. Except for 2013, the estimated coefficients of these variables in Tables A10, A12 and A14 are not significant. The coefficients on these variables were statistically insignificant. They indicate that having SS or SSI benefits does not change someone's demand for payday loans. We utilized two datasets that capture different aspects of the demand for payday loans. It is reassuring that

the estimated coefficients of the common demographic and economic variables in Probit regressions that used CPS-ASEC data and SCF data are similar. The CPP-ASEC data provide more detailed information about demand for AFS products. SCF data on the other has information on access to low-cost credit cards. Using both SCF samples and CPS-ASEC samples allows us to study two aspects of demand for payday loans and other AFS products. First, consumers who use payday loans also tend to use other AFS products. Second, lack of access to low-cost credit cards also increases demand for payday loans. Our results suggest that lower-income SSI recipients are using payday loans, pawnshops and rent-to-own loans because they experience financial hardship and do not have access to low-cost credit cards. Consequently they turn to payday loans and other AFS products.

5. Discussion

This study confirms that payday loan borrowers are mostly low-income, lack college education, and have previously been denied credit. African Americans and to some extent Hispanics are more likely to use payday loans. We demonstrate that the incidence of payday loan use is significantly higher among SSI recipients compared to the general population and SS recipients. A higher share of the SSI recipients use payday loans because they have lower incomes compared to the general population and SS recipients. Among SSI recipients payday loan use was 9.1 percent in 2010, 5.7 percent in 2013, and 4.2 percent in 2016. For SS recipients these shares were 2.7 percent, 3.2 percent and 2.5 percent, respectively. Among SSI recipients the incidence of payday loan use was about 22 percent for the 65 years and younger age group in 2010.

A higher share of the lower-income SSI recipients used payday loans during 2008 recession, which suggests that during economic downturns economically vulnerable populations experience severe cash flow problems. Leary and Wang (2016) documented that demand for payday loans increased with the length of pay period. Our results suggest that economic downturn, independent of the length of pay period, increases demand for payday loans. Any policy strategy designed to address cash flow timing issues should consider recessions as an independent factor.

This paper contributes to the literature by studying (a) the frequency and reasons for payday use among OASDI and SSI beneficiaries, (b) how using payday loans affects the long-term financial well-being of the OASDI and SSI recipients, and (c) whether payday loan use increases

demand for other AFS including pawnshops and rent-to-own loans. We use multiple data sources to study various aspects of the demand for payday loans among SS and SSI beneficiaries. We find that SSI beneficiaries use payday loans at higher rates during economic downturn because they are more likely to face financial hardship. SSI recipients rate financial hardship as the top reason for receiving payday loans. Among SSI recipients, a smaller and more vulnerable group may need extra layers of protection when they face cash flow timing issues.

We plan to extend this project to study the demand for rent-to-own and other AFS by SSI and SS beneficiaries. We intend to use the across-state variation in regulations of AFS products as an identification strategy. The recent rise of rent-to-own lending in both payday loan-allowing and payday loan-banning states provides a promising identification strategy to study the demand for this product by SSI and SS recipients.

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Appendix A

Table A1. Summary Table of Selected Household Characteristics and Payday Loan Use (% Weighted): FDIC Sample versus IPUMS-CPS Merged Sample, 2009

	Households (1000s) (FDIC)	Households (1000s) (IPUMS-CPS)	Ever used FDIC	Ever used (IPUMS- CPS)	Has never used FDIC	Never used (IPUMS- CPS)	Unknown FDIC	Unknown (IPUMS- CPS)
All Households	119003	21909	3.6	3.49	94.0	94.20	2.4	2.32
Black	15541	1985	7.9	7.83	88.0	88.60	4.2	3.57
Hispanic	13246	1883	3.9	3.46	92.2	92.7	3.9	3.85
Asian	4790	730	1.0	0.79	95.0	95.20	4.1	4.02
White	83783	18586	2.8	2.85	95.4	95.11	1.8	2.04
Other	1643	606	7.8	8.03	90.4	89.47	1.8	2.49
Age group								
15 to 24 years	6592	971	4.9	4.75	91.0	91.83	4.1	3.42
25 to 34 years	19705	3369	6.0	5.54	91.0	92.03	2.8	2.43
35 to 44 years	22590	3980	4.9	5.01	92.7	92.71	2.4	2.27
45 to 54 years	24863	4733	3.7	3.81	94.3	94.09	2.1	2.1
55 to 64 years	20274	3984	2.5	2.45	95.4	95.52	2.1	2.03
65 years+	24979	4872	0.9	0.79	96.7	96.77	2.4	2.44
Education								
No high school diploma	14996	2524	3.9	3.4	91.9	92.11	4.2	4.49
High school diploma	34662	6359	4.2	4.23	93.4	93.81	2.5	1.95
Some college	33308	4112	5.2	5.25	92.4	92.03	2.4	2.72
College	36035	8914	1.4	2.15	96.9	96.16	1.8	1.7
Employment status								
Employed	73150	13537	3.9	3.83	93.8	94.00	2.3	2.17
Unemployed	6646	1122	7.0	7.39	90.3	89.65	2.7	2.96

Source: FDIC unbanked/underbanked tables (<https://www.economicinclusion.gov/custom-data/>), and our calculations based on merged IPUMS- CPS samples are presented side by side. UBSUPPWTH weight specific to the underbanked supplement was used to weight observations (see ipums.org).

Table A2. Summary Table of Selected Household Characteristics and Payday Loan Use (% , Weighted): FDIC Sample versus IPUMS-CPS Merged Sample, 2011

	Households (1000s) (FDIC)	Households (1000s) (IPUMS- CPS)	Has ever used (FDIC)	Has ever used (IPUMS- CPS)	Has never used (FDIC)	Has never used (IPUMS- CPS)	Unknown (FDIC)	Unknown (IPUMS- CPS)
All Households	120408	10222	4.7	4.22	92.8	93.07	2.5	2.7
Race/Ethnicity								
Black	16046	956	9.5	9.14	86.7	86.82	3.8	4.04
Hispanic	13710	975	5.1	4.66	91.8	92.24	3.2	3.09
Asian	4985	389	1.3	1.39	95.7	95.59	3.0	3.01
White	83988	8615	3.8	3.43	94.1	94.12	2.1	2.45
Other	1679	262	8.8	11.50	87.9	84.13	3.4	4.36
Age group								
15 to 24 years	6299	396	5.6	3.68	92.0	93.01	2.4	3.32
25 to 34 years	20374	1604	7.6	6.93	90.1	90.30	2.3	2.77
35 to 44 years	21414	1824	6.6	7.34	91.2	90.54	2.3	2.13
45 to 54 years	24658	2088	4.8	3.85	92.3	93.01	2.9	3.13
55 to 64 years	22036	1984	3.3	3.15	94.4	94.47	2.3	2.37
65 years+	25625	2326	1.6	1.06	95.8	96.06	2.7	2.88
Education (PCT)								
No high school diploma	14321	1152	4.5	3.52	91.8	92.55	3.7	3.93
High school diploma	34462	2902	5.3	4.66	91.8	92.12	2.9	3.22
Some college	34010	1962	6.8	6.64	91.1	90.92	2.1	2.43
College degree	37615	4206	2.2	2.96	95.8	94.92	2.0	2.13
Employment status								
Employed	72580	6215	4.9	4.64	92.8	93.07	2.2	2.29
Unemployed	6779	525	8.8	7.78	88.7	89.29	2.4	2.94
Family income								
Less than \$15,000	19541	1504	5.5	4.15	90.9	91.78	3.5	4.07
\$15,000 to \$30,000	22073	1853	6.5	5.20	90.3	91.37	3.1	3.42
\$30,000 to \$50,000	24787	2051	5.9	6.07	91.7	91.30	2.3	2.62
\$50,000 to \$75,000	21975	1987	4.2	4.50	93.6	93.72	2.2	1.79
At least \$75,000	32032	2827	2.2	2.12	96.0	95.74	1.8	2.14

Source: FDIC unbanked/underbanked tables (<https://www.economicinclusion.gov/custom-data/>), and our calculations based on merged IPUMS- CPS samples are presented side by side. UBSUPPWTH weight specific to the underbanked supplement was used to weight observations (see ipums.org).

Table A3. Summary Table of Selected Household Characteristics and Payday Loan Use (% , Weighted): FDIC Sample versus IPUMS-CPS Merged Sample, 2013

	Households (1000s) (FDIC)	Households (1000s) (IPUMS- CPS)	Has ever used FDIC	Has ever used (IPU- MS- CPS)	Never used (FDIC)	Never used IPUM S- CPS)	Unk- now FDI C	Unknown (IPUMS- CPS)
All	123750	9224	4.6	4.47	90.4	90.01	5.0	5.52
Race/Ethnicity								
Black	16773	910	9.9	10.56	82.8	82.02	7.3	7.42
Hispanic	14953	916	5.1	5.01	89.1	88.89	5.8	6.1
Asian	5931	365	1.1	1.05	93.1	92.62	5.9	6.33
White	84310	7677	3.7	3.51	92.0	91.42	4.3	5.06
Other	1783	270	7.7	10.52	88.7	80.65	3.6	8.83
Age group								
15 to 24 years	6244	327	4.8	4.87	91.1	91.62	4.1	3.51
25 to 34 years	20464	1371	6.6	5.63	88.6	88.44	4.7	5.94
35 to 44 years	21408	1571	7.1	6.83	88.0	88.17	4.9	5.00
45 to 54 years	24551	1864	5.0	5.46	90.1	89.31	4.9	5.22
55 to 64 years	22710	1833	3.8	3.96	91.8	90.87	4.4	5.17
65 years+	28372	2258	1.6	1.40	92.5	92.08	5.9	6.52
Education								
No high school diploma	13871	994	5.2	3.51	89.2	90.84	5.6	5.65
High school diploma	33684	2467	5.1	5.19	89.5	88.47	5.4	6.33
Some college	36007	1725	6.6	6.77	88.6	87.04	4.8	6.18
College degree	40188	4038	2.2	3.28	93.2	92.04	4.6	4.68
Employment status								
Employed	75587	5565	4.9	4.76	90.5	90.19	4.7	5.06
Unemployed	5436	343	9.0	9.24	87.1	85.21	3.9	5.54
Family income								
Less than \$15,000	19044	1264	5.7	5.72	88.8	87.03	5.5	7.25
\$15,000 to \$30,000	21763	1560	6.4	6.56	87.7	87.60	5.9	5.84
\$30,000 to \$50,000	24496	1858	5.9	5.47	88.6	88.58	5.5	5.93
\$50,000 to \$75,000	22552	1750	4.4	4.23	91.0	90.51	4.5	5.26
At least \$75,000	35895	2792	2.2	2.11	93.8	93.53	4.0	4.37

Source: FDIC unbanked/underbanked tables (<https://www.economicinclusion.gov/custom-data/>), and our calculations based on merged IPUMS- CPS samples are presented side by side. UBSUPPWTH weight specific to the underbanked supplement was used to weight observations (see ipums.org).

Table A4. 2009, 2011 and 2013 ASEC-CPS Data: Summary Table (% , Weighted)

Variable	n=22213 2009	n=10222 2011	n=9224 2013
Age*			
15-24	5.04	4.49	4.28
25-34	16.32	16.07	15.78
35-44	18.99	17.97	17.51
45-54	21.09	20.82	20.09
55-64	17.09	18.76	19.03
65 and older	21.43	21.86	23.27
Sex*			
Male	51.31	50.20	50.18
Female	48.68	49.79	49.81
Annual Household Total Income*			
Less than \$15K	12.72	13.06	12.49
\$15,000-\$29,999	17.62	18.09	17.10
\$30,000-\$49,999	18.67	18.55	18.38
\$50,000-\$74,999	17.95	17.47	17.22
\$75,000 and Above	33.02	32.80	34.78
Education*			
Less than High School	12.16	11.75	11.56
High School	28.89	28.33	26.27
Some College	27.79	28.28	29.00
College	19.48	19.85	20.78
Grad School	11.20	11.76	12.37
Race*			
White	81.78	81.71	80.47
Black	12.01	12.29	12.27
Hispanic	11.35	11.27	12.57
Race, other	6.19	5.98	7.25
Unmarried*	47.20	49.88	48.96
Payday Borrower*	3.48	4.22	4.47
Social Security Recipient (SS)*	24.27	24.59	25.92
Supplemental Social Security (SSI)*	2.60	3.03	2.84
Work*			
Employed	91.69	91.43	93.55
Unemployed	8.30	8.56	6.44
States that allow to use payday*	69.96	70.01	70.50
Rent to own *	3.83	4.25	4.36
Tax Refund Anticipation loan*	3.74	3.33	4.44
Pawnshop Users*	5.36	7.03	7.00
The Reasons for Pawnshop*			
Pawnshop Small Loan	0.34	1.13	
Pawnshop Convenient	1.03	0.83	
Pawnshop Easier to get	1.82	3.18	
Pawnshop Comfortable	0.11	0.04	
Pawnshop Qualify	0.59	1.06	
Pawnshop Trust	1.33	0.07	
Pawnshop Other	0.007	0.64	

*Dummy coded, 1=yes, 0=no

Source: The weighted averages are calculated based on the merged CPS samples. The CPS-ASEC samples and the CPS unbanked/under-banked supplements were merged at both household and personal levels. We created our data extracts from IPUMS (ipums.org) and then merged ASEC samples and CPS unbanked/under-banked supplements.

Table A5. Summary Table of Imputed and Non-imputed Data, SCF 2010 Sample

Variable	32,410	6,482	6,482	6,482	6,482	6,482
	All Implicates	Implicate 1	Implicate 2	Implicate 3	Implicate 4	Implicate 5
	%	%	%	%	%	%
Age*						
18 - 24	5.07	5.07	5.07	5.07	5.07	5.07
25 - 34	15.90	15.90	15.90	15.90	15.90	15.90
35 - 44	18.15	18.15	18.15	18.15	18.15	18.15
45 - 54	21.13	21.13	21.13	21.13	21.13	21.13
55 - 64	17.52	17.52	17.52	17.52	17.52	17.52
65 and older	22.23	22.23	22.23	22.23	22.23	22.23
Sex*						
Male	72.89	72.88	72.83	72.86	73.03	72.85
Female	27.11	27.12	27.17	27.14	26.97	27.15
Household Income*						
Less than \$15k	12.39	12.33	12.41	12.36	12.43	12.42
\$15,000 - \$24,999	14.26	14.34	14.23	14.29	14.19	14.24
\$25,000 - \$34,999	13.38	13.10	13.56	13.52	13.26	13.47
\$35,000 - \$49,999	14.60	14.63	14.60	14.72	14.48	14.57
\$50,000 - \$74,999	17.94	18.25	17.87	17.98	17.78	17.82
\$75,000 - \$99,999	10.03	9.95	10.08	9.99	10.16	9.97
\$100,000 and over	17.60	17.59	17.44	17.35	17.90	17.72
Education*						
Less than High School	13.31	13.35	13.29	13.42	13.23	13.29
High School	30.84	30.86	30.88	30.89	30.73	30.87
Some College	23.80	23.74	23.87	23.85	23.78	23.77
College	19.36	19.38	19.33	19.31	19.39	19.4
Grad School	12.68	12.67	12.64	12.53	12.87	12.67

Race*

White	70.80	70.80	70.70	70.77	70.95	70.77
Black	13.83	13.82	13.92	13.83	13.72	13.85
Hispanic	10.76	10.74	10.80	10.79	10.71	10.75
Other	4.62	4.64	4.59	4.62	4.62	4.63
Unmarried*	49.48	49.46	49.54	49.54	49.29	49.59
Payday Borrower*	3.85	3.85	3.86	3.87	3.83	3.86
SS* Recipient	27.52	27.51	27.55	27.54	27.50	27.52
SSI* Recipient	2.98	2.99	2.98	2.99	2.98	2.99
Credit Application*						
Credit Denied	28.29	28.28	28.32	28.40	28.16	28.29
Received	5.63	5.68	5.59	5.65	5.64	5.60
Lower Credit						
Credit	66.08	66.04	66.09	65.95	66.20	66.10
Approved						
Has Credit	67.96	67.93	67.91	67.85	68.16	67.95
Cards*						

*Dummy coded, 1 = yes, 0 = no

Source: Author's calculations based on 2010 SCF sample. Weighted averages of the imputed data (all implicates) and non-imputed data (single implicates).

Table A6. Summary Table of Imputed and Non-imputed Data, SCF 2013 Sample

Variable	30,075	6,015	6,015	6,015	6,015	6,015
	All Implicates	Implicate 1	Implicate 2	Implicate 3	Implicate 4	Implicate 5
	%	%	%	%	%	%
Age*						
18 - 24	5.00	5.00	5.00	5.00	5.00	5.00
25 - 34	15.76	15.76	15.76	15.76	15.76	15.76
35 - 44	17.28	17.28	17.28	17.28	17.28	17.28
45 - 54	19.63	19.63	19.63	19.63	19.63	19.63
55 - 64	18.74	18.74	18.74	18.74	18.74	18.74
65 and older	23.59	23.59	23.59	23.59	23.59	23.59
Sex*						
Male	71.58	71.62	71.54	71.62	71.56	71.58
Female	28.42	28.38	28.46	28.38	28.44	28.42
Household Income*						
Less than \$15k	11.56	11.36	11.63	11.70	11.55	11.56
\$15,000 - \$24,999	14.49	14.65	14.42	14.29	14.56	14.52
\$25,000 - \$34,999	12.71	12.65	12.77	12.71	12.59	12.81
\$35,000 - \$49,999	15.09	15.18	14.92	15.15	15.24	14.98
\$50,000 - \$74,999	16.24	16.12	16.51	16.18	16.18	16.20
\$75,000 - \$99,999	10.05	10.11	9.97	10.02	10.09	10.06
\$100,000 and over	20.07	20.14	19.99	20.14	19.99	20.07
Education*						
Less than High School	12.40	12.38	12.39	12.45	12.38	12.40
High School	29.89	29.83	29.95	29.80	29.94	29.91
Some College	24.21	24.22	24.22	24.18	24.19	24.26
College	20.03	20.02	20.02	20.06	20.04	20.01
Grad School	13.47	13.55	13.41	13.51	13.45	13.41
Race*						
White	70.09	70.11	70.02	70.14	70.10	70.09
Black	14.61	14.58	14.65	14.59	14.62	14.64

Hispanic	10.64	10.61	10.68	10.62	10.65	10.65
Other	4.65	4.70	4.65	4.65	4.63	4.63
Unmarried*	51.87	51.85	51.91	51.84	51.87	51.86
Payday Borrower*	4.15	4.15	4.15	4.15	4.15	4.15
SS* Recipient	29.83	29.82	29.82	29.83	29.85	29.84
SSI* Recipient	4.32	4.32	4.32	4.32	4.32	4.32
Credit Application*						
Credit Denied	27.25	27.22	27.25	27.21	27.36	27.22
Received Lower Credit	4.68	4.73	4.58	4.71	4.64	4.75
Credit Approved	68.06	68.04	68.16	68.08	68.00	68.03
Has Credit Cards*	67.51	67.54	67.49	67.53	67.48	67.53

*Dummy coded, 1 = yes, 0 = no

Source: Author's calculations based on 2013 SCF sample. Weighted averages of the imputed data (all implicates) and non-imputed data (single implicates)

Table A7. Summary Table of Imputed and Non-imputed Data, SCF 2016 Sample

Variable	31,240	6,248	6,248	6,248	6,248	6,248
	All Implicates	Implicate 1	Implicate 2	Implicate 3	Implicate 4	Implicate 5
	%	%	%	%	%	%
Age*						
18 - 24	4.92	4.92	4.92	4.92	4.92	4.92
25 - 34	15.34	15.34	15.34	15.34	15.34	15.34
35 - 44	16.85	16.85	16.85	16.85	16.85	16.85
45 - 54	18.34	18.34	18.34	18.34	18.34	18.34
55 - 64	19.22	19.22	19.22	19.22	19.22	19.22
65 and older	25.33	25.33	25.33	25.33	25.33	25.33
Sex*						
Male	72.53	72.53	72.48	72.56	72.56	72.52
Female	27.47	27.47	27.52	27.44	27.44	27.48
Household Income*						
Less than \$15k	10.03	10.00	9.90	10.08	10.04	10.16
\$15,000 - \$24,999	12.86	12.87	12.91	12.86	12.93	12.74
\$25,000 - \$34,999	11.50	11.50	11.75	11.45	11.53	11.30
\$35,000 - \$49,999	16.41	16.32	16.24	16.41	16.25	16.85
\$50,000 - \$74,999	16.66	16.69	16.79	16.60	16.79	16.46
\$75,000 - \$99,999	11.16	11.30	11.22	11.15	11.02	11.11
\$100,000 and over	23.39	23.35	23.25	23.48	23.46	23.44
Education*						
Less than High School	12.68	12.63	12.76	12.67	12.68	12.65
High School	41.46	41.51	41.42	41.46	41.45	41.48
Some College	11.83	11.87	11.83	11.84	11.79	11.81
College	20.92	20.92	20.88	20.92	20.95	20.91
Grad and Post- Grad	13.11	13.07	13.12	13.11	13.12	13.15
Race*						

White	68.03	68.03	68.03	68.04	68.02	68.04
Black	15.85	15.84	15.85	15.85	15.87	15.87
Hispanic	11.34	11.34	11.32	11.32	11.35	11.35
Other	4.77	4.79	4.81	4.78	4.75	4.74
Unmarried*	52.64	52.61	52.72	52.58	52.65	52.64
Payday Borrower*	3.42	3.41	3.43	3.42	3.42	3.41
SS Recipient*	32.06	32.07	32.06	32.06	32.04	32.05
SSI* Recipient*	5.35	5.36	5.36	5.36	5.36	5.35
Credit Application*						
Credit Denied	19.56	19.57	19.57	19.56	19.61	19.51
Received	3.34	3.34	3.33	3.34	3.36	3.34
Lower Credit Approved						
Has Credit	77.09	77.10	77.09	77.10	77.03	77.15
Has Credit	71.20	71.22	71.19	71.24	71.16	71.21
Cards*						

*Dummy coded, 1 = yes, 0 = no

Source: Author's calculations based on 2016 SCF sample. Weighted averages of the imputed data (all implicates) and non-imputed data (single implicates).

Table A8. Probit Regression Results, (Dependent Variable: Payday Loan Use 1/0)

Variable	2009	2011	2013
Black	0.353*** (0.069)	0.453*** (0.0987)	0.578*** (0.0938)
Hispanic	0.0562 (0.0759)	0.00788 (0.107)	0.154 (0.107)
Race, Other	0.244** (0.0951)	0.172 (0.123)	0.123 (0.114)
Age 25-34	0.0771 (0.105)	0.218 (0.176)	0.462** (0.18)
Age 35-44	0.00585 (0.104)	0.18 (0.177)	0.372** (0.18)
Age 45-54	-0.0325 (0.105)	-0.0498 (0.181)	0.337* (0.181)
Age 55-64	-0.185 (0.114)	-0.00386 (0.186)	0.3 (0.186)
Age 65 and Above	-0.244 (0.184)	-0.943*** (0.335)	-0.534 (0.333)
Household income 15K-30K	0.0689 (0.112)	-0.000897 (0.165)	0.00295 (0.155)
Household income 30K-50K	0.108 (0.109)	0.2 (0.154)	0.134 (0.149)
Household income 50K-75K	0.136 (0.11)	0.236 (0.158)	-0.00897 (0.152)
Household income 75K and Above	-0.00347 (0.113)	0.132 (0.159)	-0.117 (0.155)
High School Diploma	0.0887 (0.0919)	0.138 (0.146)	0.367** (0.16)
Some College	0.168* (0.0921)	0.227 (0.146)	0.517*** (0.155)
College Degree	-0.0606 (0.103)	-0.0432 (0.161)	0.116 (0.179)
Post Graduate	-0.382*** (0.141)	-0.0916 (0.184)	0.161 (0.191)
Female	0.0959** (0.0478)	0.0259 (0.0696)	0.0374 (0.0699)
Unemployed	0.159** (0.0792)	-0.00089 (0.123)	0.250** (0.124)
SS Recipient	-0.105 (0.15)	0.616*** (0.205)	0.296 (0.203)
SSI Recipient	0.323 (0.218)	0.479 (0.345)	
States that allow to use payday	0.370*** (0.0626)	0.387*** (0.0904)	
Rent-to-own	0.678*** (0.0841)	0.672*** (0.119)	

Tax Refund Anticipation Loan	1.024*** (0.0765)	0.778*** (0.121)	
Pawnshop Reasons Small	0.356 (0.305)	0.763*** (0.19)	
Pawnshop Reasons Convenient	0.617*** (0.136)	0.623** (0.254)	
Pawnshop Reasons Easier to Get	0.507*** (0.12)	0.601*** (0.14)	
Pawnshop Reasons Comfortable	-0.257 (0.795)		
Pawnshop Reasons Qualify	0.680*** (0.198)	1.043*** (0.198)	
Pawnshop Reasons Trust	0.321** (0.141)	0.183 (0.605)	
Pawnshop Reasons Other		0.475 (0.306)	
Constant	-2.398*** (0.16)	-2.624*** (0.247)	-2.958*** (0.286)
R-squared	0.1923	0.1981	0.1811
Log pseudo likelihood	-5791936.3	-2823151.2	-2925917.2
Wald chi2	730.40	319.25	295.08
Observations	14,659	6,740	5,908

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: data from CPS_ASEC_Unbanked/underbanked supplements for 2009, 2011 and 2013 (weighted). Comparison groups are whites, age 16-24, income less than \$15K, less than high school education, employed and male.

Table A9. Probit Regression Results, SCF 2010 (Dependent Variable Payday Loan Use 1/0)

	(1)	(2)	(3)	(4)	(5)	(6)
	All_Implicates	Implicate_1	Implicate_2	Implicate_3	Implicate_4	Implicate_5
age_2	0.216** (0.089)	0.208 (0.196)	0.208 (0.199)	0.206 (0.198)	0.235 (0.204)	0.224 (0.198)
age_3	0.192** (0.089)	0.180 (0.196)	0.176 (0.198)	0.179 (0.198)	0.210 (0.203)	0.212 (0.197)
age_4	0.267*** (0.088)	0.250 (0.194)	0.252 (0.197)	0.253 (0.196)	0.299 (0.202)	0.282 (0.195)
age_5	0.217** (0.094)	0.204 (0.208)	0.199 (0.210)	0.212 (0.211)	0.239 (0.215)	0.227 (0.209)
age_6	-0.049 (0.109)	-0.064 (0.241)	-0.082 (0.244)	-0.053 (0.243)	-0.015 (0.248)	-0.029 (0.242)
less_than_HS	0.509*** (0.112)	0.512** (0.250)	0.512** (0.250)	0.509** (0.249)	0.505** (0.250)	0.508** (0.250)
highschool	0.561*** (0.096)	0.555*** (0.215)	0.565*** (0.213)	0.564*** (0.212)	0.559*** (0.215)	0.564*** (0.214)
some_college	0.761*** (0.096)	0.755*** (0.215)	0.768*** (0.213)	0.759*** (0.212)	0.766*** (0.215)	0.760*** (0.214)
college	0.364*** (0.102)	0.365 (0.230)	0.361 (0.228)	0.354 (0.227)	0.368 (0.230)	0.369 (0.229)
income_1	0.551*** (0.103)	0.543** (0.232)	0.491** (0.224)	0.573** (0.234)	0.528** (0.231)	0.623*** (0.233)
income_2	0.662*** (0.100)	0.698*** (0.223)	0.592*** (0.217)	0.674*** (0.224)	0.710*** (0.224)	0.645*** (0.225)
income_3	0.625*** (0.098)	0.644*** (0.221)	0.555*** (0.211)	0.605*** (0.223)	0.650*** (0.221)	0.675*** (0.220)
income_4	0.648*** (0.091)	0.671*** (0.205)	0.581*** (0.196)	0.670*** (0.204)	0.663*** (0.205)	0.662*** (0.205)
income_5	0.447*** (0.091)	0.458** (0.204)	0.365* (0.197)	0.479** (0.204)	0.475** (0.204)	0.465** (0.204)
income_6	0.616*** (0.096)	0.641*** (0.217)	0.525** (0.208)	0.630*** (0.219)	0.633*** (0.216)	0.658*** (0.216)
female	-0.056 (0.053)	-0.047 (0.119)	-0.075 (0.118)	-0.040 (0.119)	-0.062 (0.118)	-0.053 (0.119)
other_race	0.481*** (0.092)	0.457** (0.211)	0.479** (0.211)	0.489** (0.206)	0.486** (0.202)	0.498** (0.204)
black	0.379*** (0.049)	0.366*** (0.110)	0.408*** (0.109)	0.367*** (0.110)	0.390*** (0.109)	0.363*** (0.109)
hispanic	-0.073 (0.064)	-0.076 (0.144)	-0.061 (0.145)	-0.079 (0.143)	-0.070 (0.144)	-0.079 (0.144)
unmarried	0.128*** (0.048)	0.124 (0.108)	0.134 (0.109)	0.128 (0.108)	0.135 (0.108)	0.120 (0.109)
recieved credit_card	-0.546*** (0.043)	-0.549*** (0.096)	-0.547*** (0.096)	-0.554*** (0.096)	-0.541*** (0.096)	-0.541*** (0.096)
credit_denied	0.709*** (0.041)	0.706*** (0.092)	0.704*** (0.092)	0.711*** (0.092)	0.710*** (0.092)	0.716*** (0.092)
lower_credit	0.609*** (0.073)	0.599*** (0.164)	0.612*** (0.163)	0.622*** (0.164)	0.596*** (0.164)	0.613*** (0.163)
_cons	-3.061*** (0.145)	-3.054*** (0.324)	-2.983*** (0.316)	-3.060*** (0.324)	-3.113*** (0.329)	-3.101*** (0.325)

Obs.	20069	4012	4017	4008	4016	4016
Pseudo R ²	0.203	0.202	0.204	0.203	0.206	0.202

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source. Regressions are weighted. Comparison groups are older age group, college plus education, highest income group, male and white.

Table A10. Probit Regression Results, SCF 2010 (Dependent Variable Payday Loan Use 1/0) with SS and SSI

	(1)	(2)	(3)	(4)	(5)	(6)
	All_Implicat es	Implicate_1	Implicate_2	Implicate_3	Implicate_4	Implicate_5
SS recipient	0.163** (0.075)	0.158 (0.169)	0.164 (0.166)	0.171 (0.169)	0.157 (0.168)	0.163 (0.168)
SSI recipient	0.471*** (0.126)	0.451 (0.287)	0.503* (0.278)	0.433 (0.283)	0.523* (0.273)	0.442 (0.283)
age_2	0.184** (0.088)	0.180 (0.196)	0.173 (0.198)	0.176 (0.197)	0.201 (0.203)	0.193 (0.197)
age_3	0.146* (0.088)	0.139 (0.195)	0.128 (0.197)	0.135 (0.197)	0.161 (0.202)	0.168 (0.197)
age_4	0.200** (0.088)	0.191 (0.195)	0.178 (0.198)	0.188 (0.197)	0.225 (0.202)	0.217 (0.196)
age_5	0.107 (0.095)	0.102 (0.211)	0.083 (0.214)	0.105 (0.213)	0.126 (0.218)	0.120 (0.212)
age_6	-0.259** (0.126)	-0.265 (0.280)	-0.298 (0.279)	-0.267 (0.281)	-0.228 (0.285)	-0.236 (0.279)
less_than_HS	0.462*** (0.111)	0.464* (0.248)	0.464* (0.248)	0.467* (0.247)	0.452* (0.248)	0.462* (0.248)
highschool	0.551*** (0.096)	0.545*** (0.215)	0.556*** (0.213)	0.554*** (0.212)	0.549*** (0.215)	0.552*** (0.214)
some_college	0.756*** (0.095)	0.750*** (0.214)	0.761*** (0.213)	0.755*** (0.212)	0.759*** (0.215)	0.754*** (0.214)
college	0.364*** (0.102)	0.364 (0.230)	0.361 (0.228)	0.355 (0.227)	0.368 (0.230)	0.368 (0.229)
income_1	0.457*** (0.106)	0.460* (0.238)	0.390* (0.230)	0.485** (0.238)	0.419* (0.237)	0.533** (0.238)
income_2	0.608*** (0.100)	0.643*** (0.224)	0.537** (0.218)	0.620*** (0.225)	0.653*** (0.225)	0.596*** (0.226)
income_3	0.601*** (0.098)	0.624*** (0.222)	0.532** (0.212)	0.583*** (0.224)	0.622*** (0.222)	0.652*** (0.221)
income_4	0.626*** (0.091)	0.650*** (0.206)	0.560*** (0.197)	0.649*** (0.205)	0.639*** (0.206)	0.642*** (0.206)
income_5	0.431*** (0.091)	0.443** (0.204)	0.350* (0.197)	0.462** (0.204)	0.457** (0.204)	0.449** (0.205)
income_6	0.600*** (0.096)	0.626*** (0.216)	0.509** (0.208)	0.614*** (0.218)	0.615*** (0.216)	0.643*** (0.216)
female	-0.042 (0.053)	-0.036 (0.119)	-0.060 (0.119)	-0.029 (0.119)	-0.044 (0.119)	-0.041 (0.120)
other_race	0.474*** (0.093)	0.454** (0.211)	0.476** (0.212)	0.479** (0.207)	0.475** (0.204)	0.488** (0.206)
black	0.377*** (0.049)	0.364*** (0.109)	0.407*** (0.109)	0.367*** (0.109)	0.384*** (0.109)	0.363*** (0.109)
hispanic	-0.053 (0.065)	-0.058 (0.144)	-0.041 (0.146)	-0.060 (0.144)	-0.049 (0.144)	-0.059 (0.144)
unmarried	0.123** (0.049)	0.119 (0.109)	0.128 (0.109)	0.123 (0.109)	0.126 (0.109)	0.115 (0.109)
received credit_card	-0.543*** (0.043)	-0.548*** (0.096)	-0.543*** (0.096)	-0.550*** (0.097)	-0.539*** (0.096)	-0.538*** (0.097)
credit_denied	0.705*** (0.041)	0.702*** (0.092)	0.699*** (0.092)	0.707*** (0.093)	0.704*** (0.093)	0.711*** (0.092)

lower_credit	0.609*** (0.073)	0.597*** (0.164)	0.613*** (0.163)	0.623*** (0.164)	0.594*** (0.164)	0.614*** (0.163)
_cons	-2.994*** (0.144)	-2.993*** (0.323)	-2.914*** (0.314)	-2.998*** (0.323)	-3.037*** (0.327)	-3.036*** (0.323)
Obs.	20069	4012	4017	4008	4016	4016
Pseudo R ²	0.208	0.207	0.209	0.207	0.212	0.207

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source. Regressions are weighted. Comparison groups are older age group, college plus education, highest income group, male and white.

Table A11. Probit Regression Results, SCF 2013 (Dependent Variable Payday Loan Use 1/0)

	(1)	(2)	(3)	(4)	(5)	(6)
	All_Implicat es	Implicate_1	Implicate_2	Implicate_3	Implicate_4	Implicate_5
age_2	0.345*** (0.098)	0.367* (0.218)	0.322 (0.218)	0.363* (0.220)	0.312 (0.221)	0.359 (0.220)
age_3	0.250** (0.101)	0.259 (0.225)	0.231 (0.223)	0.256 (0.225)	0.233 (0.227)	0.271 (0.225)
age_4	0.151 (0.104)	0.160 (0.232)	0.135 (0.230)	0.164 (0.232)	0.138 (0.234)	0.158 (0.233)
age_5	0.206* (0.108)	0.226 (0.240)	0.204 (0.239)	0.227 (0.240)	0.167 (0.242)	0.204 (0.242)
age_6	0.029 (0.119)	0.047 (0.264)	-0.007 (0.267)	0.050 (0.264)	0.039 (0.266)	0.010 (0.269)
less_than_HS	0.257** (0.102)	0.234 (0.228)	0.260 (0.227)	0.231 (0.229)	0.367* (0.222)	0.202 (0.230)
highschool	0.290*** (0.080)	0.272 (0.179)	0.281 (0.178)	0.270 (0.179)	0.377** (0.178)	0.261 (0.178)
some_college	0.479*** (0.076)	0.468*** (0.169)	0.463*** (0.169)	0.455*** (0.170)	0.569*** (0.171)	0.450*** (0.169)
college	-0.139* (0.084)	-0.155 (0.187)	-0.141 (0.186)	-0.166 (0.188)	-0.058 (0.191)	-0.168 (0.187)
income_1	-0.038 (0.116)	0.001 (0.257)	-0.011 (0.255)	-0.035 (0.261)	-0.129 (0.249)	-0.030 (0.266)
income_2	0.177* (0.096)	0.218 (0.215)	0.177 (0.217)	0.183 (0.214)	0.076 (0.220)	0.220 (0.213)
income_3	0.392*** (0.083)	0.360* (0.188)	0.349* (0.186)	0.438*** (0.186)	0.412** (0.185)	0.399** (0.187)
income_4	0.143* (0.079)	0.173 (0.176)	0.156 (0.178)	0.123 (0.177)	0.096 (0.177)	0.165 (0.176)
income_5	0.230*** (0.073)	0.228 (0.164)	0.234 (0.163)	0.227 (0.164)	0.208 (0.165)	0.249 (0.163)
income_6	0.087 (0.081)	0.082 (0.182)	0.077 (0.181)	0.096 (0.182)	0.083 (0.182)	0.095 (0.181)
female	0.084 (0.056)	0.084 (0.124)	0.063 (0.125)	0.089 (0.125)	0.098 (0.127)	0.087 (0.125)
other_race	-0.076 (0.116)	-0.095 (0.259)	-0.076 (0.257)	-0.068 (0.259)	-0.056 (0.260)	-0.084 (0.260)
black	0.413*** (0.049)	0.419*** (0.108)	0.412*** (0.109)	0.416*** (0.108)	0.425*** (0.109)	0.390*** (0.108)
hispanic	0.200*** (0.064)	0.204 (0.142)	0.202 (0.143)	0.191 (0.143)	0.212 (0.143)	0.191 (0.143)
unmarried	0.061 (0.054)	0.055 (0.120)	0.061 (0.119)	0.059 (0.120)	0.078 (0.120)	0.053 (0.120)
received_credit_card	-0.349*** (0.048)	-0.346*** (0.108)	-0.364*** (0.108)	-0.350*** (0.108)	-0.336*** (0.108)	-0.353*** (0.109)
credit_denied	0.677*** (0.042)	0.679*** (0.093)	0.660*** (0.094)	0.681*** (0.093)	0.696*** (0.094)	0.674*** (0.093)
lower_credit	0.359*** (0.081)	0.323* (0.184)	0.367** (0.180)	0.368** (0.179)	0.392** (0.181)	0.352** (0.178)

_cons	-2.499*** (0.133)	-2.501*** (0.296)	-2.449*** (0.295)	-2.496*** (0.297)	-2.579*** (0.302)	-2.478*** (0.298)
Obs.	18386	3680	3676	3680	3671	3679
Pseudo R ²	0.182	0.181	0.177	0.186	0.188	0.182

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source. Regressions are weighted. Comparison groups are older age group, college plus education, highest income group, male and white.

Table A12. Probit Regression Results, SCF 2013 (Dependent Variable Payday Loan Use 1/0), with SS and SSI

	(1)	(2)	(3)	(4)	(5)	(6)
	All_Implicat es	Implicate_1	Implicate_2	Implicate_3	Implicate_4	Implicate_5
SS recipient	0.429*** (0.079)	0.424** (0.174)	0.426** (0.175)	0.448** (0.174)	0.451** (0.179)	0.396** (0.177)
SSI recipient	-0.103 (0.143)	-0.115 (0.318)	-0.071 (0.319)	-0.060 (0.323)	-0.267 (0.330)	-0.028 (0.309)
age_2	0.333*** (0.098)	0.354 (0.219)	0.306 (0.218)	0.350 (0.220)	0.303 (0.222)	0.344 (0.220)
age_3	0.223** (0.101)	0.234 (0.226)	0.201 (0.225)	0.225 (0.227)	0.214 (0.229)	0.240 (0.227)
age_4	0.093 (0.105)	0.102 (0.233)	0.074 (0.232)	0.103 (0.234)	0.087 (0.236)	0.098 (0.235)
age_5	0.060 (0.111)	0.081 (0.246)	0.054 (0.245)	0.069 (0.247)	0.029 (0.250)	0.062 (0.248)
age_6	-0.377*** (0.139)	-0.353 (0.309)	-0.414 (0.312)	-0.377 (0.309)	-0.377 (0.315)	-0.370 (0.313)
less_than_HS	0.262** (0.103)	0.239 (0.230)	0.264 (0.228)	0.239 (0.229)	0.374* (0.224)	0.209 (0.230)
highschool	0.293*** (0.079)	0.276 (0.177)	0.285 (0.176)	0.275 (0.177)	0.374*** (0.179)	0.267 (0.176)
some_college	0.488*** (0.076)	0.478*** (0.168)	0.474*** (0.167)	0.468*** (0.168)	0.571*** (0.173)	0.462*** (0.167)
college	-0.134 (0.084)	-0.148 (0.187)	-0.133 (0.185)	-0.160 (0.187)	-0.058 (0.192)	-0.161 (0.186)
income_1	-0.110 (0.115)	-0.069 (0.254)	-0.090 (0.253)	-0.120 (0.258)	-0.186 (0.253)	-0.105 (0.263)
income_2	0.129 (0.098)	0.171 (0.218)	0.124 (0.220)	0.132 (0.216)	0.036 (0.223)	0.171 (0.216)
income_3	0.364*** (0.083)	0.331* (0.188)	0.323* (0.186)	0.405*** (0.186)	0.390*** (0.185)	0.365* (0.186)
income_4	0.110 (0.079)	0.139 (0.176)	0.123 (0.177)	0.084 (0.177)	0.067 (0.176)	0.132 (0.175)
income_5	0.204*** (0.074)	0.203 (0.165)	0.207 (0.164)	0.201 (0.165)	0.184 (0.166)	0.225 (0.164)
income_6	0.087 (0.082)	0.078 (0.183)	0.077 (0.181)	0.097 (0.183)	0.085 (0.183)	0.096 (0.182)
female	0.100* (0.056)	0.101 (0.124)	0.078 (0.126)	0.105 (0.125)	0.115 (0.127)	0.101 (0.125)
other_race	-0.088 (0.115)	-0.106 (0.257)	-0.090 (0.255)	-0.084 (0.258)	-0.057 (0.258)	-0.099 (0.258)
black	0.415*** (0.049)	0.421*** (0.108)	0.416*** (0.109)	0.418*** (0.109)	0.426*** (0.110)	0.394*** (0.109)
hispanic	0.223*** (0.064)	0.227 (0.143)	0.226 (0.143)	0.215 (0.143)	0.233 (0.143)	0.214 (0.143)
unmarried	0.067 (0.054)	0.061 (0.120)	0.068 (0.119)	0.066 (0.120)	0.085 (0.119)	0.058 (0.120)
received_credit_card	-0.344*** (0.048)	-0.340*** (0.107)	-0.358*** (0.108)	-0.344*** (0.107)	-0.334*** (0.108)	-0.345*** (0.108)
credit_denied	0.678*** (0.042)	0.680*** (0.095)	0.660*** (0.095)	0.682*** (0.094)	0.700*** (0.095)	0.673*** (0.094)
lower_credit	0.366***	0.328*	0.374**	0.374**	0.403**	0.357**

	(0.081)	(0.185)	(0.181)	(0.181)	(0.181)	(0.179)
_cons	-2.485***	-2.487***	-2.432***	-2.481***	-2.569***	-2.463***
	(0.135)	(0.300)	(0.299)	(0.301)	(0.306)	(0.301)
Obs.	18386	3680	3676	3680	3671	3679
Pseudo R ²	0.188	0.186	0.183	0.192	0.193	0.187

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source. Regressions are weighted. Comparison groups are older age group, college plus education, highest income group, male and white.

Table A13. Probit Regression Results, SCF 2016 (Dependent Variable Payday Loan Use 1/0)

	(1)	(2)	(3)	(4)	(5)	(6)
	All_Implicat es	Implicate_1	Implicate_2	Implicate_3	Implicate_4	Implicate_5
age_2	0.409*** (0.109)	0.461* (0.255)	0.469* (0.254)	0.379 (0.237)	0.308 (0.223)	0.459* (0.254)
age_3	0.256** (0.109)	0.324 (0.255)	0.307 (0.255)	0.222 (0.238)	0.158 (0.224)	0.298 (0.255)
age_4	0.182 (0.111)	0.262 (0.258)	0.223 (0.259)	0.136 (0.243)	0.097 (0.229)	0.223 (0.259)
age_5	0.179 (0.113)	0.245 (0.262)	0.232 (0.262)	0.142 (0.246)	0.073 (0.234)	0.231 (0.262)
age_6	0.059 (0.124)	0.116 (0.288)	0.116 (0.287)	0.024 (0.272)	-0.049 (0.260)	0.116 (0.288)
less_than_HS	0.319*** (0.107)	0.307 (0.239)	0.339 (0.239)	0.332 (0.237)	0.303 (0.238)	0.316 (0.239)
highschool	0.191** (0.090)	0.186 (0.201)	0.195 (0.201)	0.199 (0.201)	0.168 (0.202)	0.209 (0.201)
some_college	0.179* (0.100)	0.204 (0.221)	0.167 (0.224)	0.172 (0.224)	0.180 (0.222)	0.174 (0.224)
college	-0.073 (0.104)	-0.075 (0.232)	-0.074 (0.233)	-0.075 (0.233)	-0.063 (0.230)	-0.077 (0.232)
income_1	-0.236** (0.118)	-0.313 (0.276)	-0.244 (0.264)	-0.162 (0.254)	-0.204 (0.265)	-0.288 (0.265)
income_2	0.266*** (0.101)	0.302 (0.231)	0.249 (0.225)	0.261 (0.223)	0.303 (0.226)	0.210 (0.228)
income_3	0.429*** (0.098)	0.445** (0.217)	0.389* (0.220)	0.445** (0.218)	0.486** (0.218)	0.379* (0.220)
income_4	0.494*** (0.087)	0.515*** (0.194)	0.511*** (0.192)	0.466** (0.194)	0.524*** (0.194)	0.457** (0.194)
income_5	0.514*** (0.087)	0.533*** (0.193)	0.506*** (0.195)	0.512*** (0.194)	0.510*** (0.194)	0.513*** (0.193)
income_6	0.298*** (0.092)	0.276 (0.206)	0.300 (0.207)	0.272 (0.210)	0.313 (0.206)	0.326 (0.202)
female	0.240*** (0.056)	0.219* (0.126)	0.242* (0.126)	0.255** (0.125)	0.233* (0.126)	0.251** (0.125)
other_race	-0.123 (0.101)	-0.147 (0.227)	-0.115 (0.226)	-0.109 (0.227)	-0.137 (0.227)	-0.105 (0.227)
black	0.073 (0.053)	0.054 (0.120)	0.065 (0.119)	0.086 (0.118)	0.081 (0.118)	0.078 (0.119)
hispanic	-0.204*** (0.069)	-0.214 (0.154)	-0.205 (0.154)	-0.203 (0.154)	-0.210 (0.154)	-0.190 (0.153)
unmarried	0.119** (0.055)	0.117 (0.122)	0.127 (0.123)	0.113 (0.122)	0.103 (0.122)	0.137 (0.122)
received_credit_card	-0.374*** (0.048)	-0.368*** (0.108)	-0.375*** (0.108)	-0.377*** (0.107)	-0.371*** (0.106)	-0.381*** (0.109)
credit_denied	0.728*** (0.048)	0.726*** (0.108)	0.726*** (0.108)	0.725*** (0.107)	0.742*** (0.105)	0.721*** (0.108)
lower_credit	0.737*** (0.082)	0.747*** (0.182)	0.744*** (0.183)	0.737*** (0.184)	0.732*** (0.183)	0.729*** (0.183)
finlitscore	-0.090 (0.087)	-0.096 (0.195)	-0.096 (0.195)	-0.088 (0.194)	-0.079 (0.192)	-0.095 (0.195)
_cons	-2.474***	-2.532***	-2.522***	-2.441***	-2.388***	-2.516***

	(0.184)	(0.419)	(0.419)	(0.406)	(0.396)	(0.419)
Obs.	16774	3353	3354	3355	3356	3356
Pseudo R ²	0.170	0.170	0.170	0.171	0.172	0.169

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source. Regressions are weighted. Comparison groups are older age group, college plus education, highest income group, male and white. Finlitscore indicates financial literacy score.

Table A14. Probit Regression Results, SCF 2016 (Dependent Variable Payday Loan Use 1/0), SS and SSI Included

	(1)	(2)	(3)	(4)	(5)	(6)
	All_Implicat es	Implicate_1	Implicate_2	Implicate_3	Implicate_4	Implicate_5
SS recipient	0.148* (0.088)	0.150 (0.196)	0.163 (0.196)	0.145 (0.195)	0.132 (0.196)	0.151 (0.196)
SSI recipient	0.033 (0.110)	0.065 (0.247)	0.015 (0.246)	0.011 (0.244)	0.036 (0.248)	0.042 (0.247)
age_2	0.404*** (0.109)	0.455* (0.255)	0.465* (0.254)	0.374 (0.237)	0.301 (0.223)	0.454* (0.255)
age_3	0.238** (0.109)	0.305 (0.255)	0.290 (0.255)	0.207 (0.238)	0.140 (0.225)	0.280 (0.256)
age_4	0.158 (0.112)	0.236 (0.260)	0.199 (0.261)	0.114 (0.244)	0.073 (0.231)	0.199 (0.261)
age_5	0.117 (0.115)	0.180 (0.268)	0.168 (0.268)	0.084 (0.252)	0.016 (0.239)	0.168 (0.269)
age_6	-0.091 (0.145)	-0.039 (0.332)	-0.046 (0.332)	-0.120 (0.317)	-0.186 (0.309)	-0.037 (0.333)
less_than_HS	0.309*** (0.106)	0.295 (0.237)	0.330 (0.237)	0.325 (0.236)	0.293 (0.236)	0.304 (0.237)
highschool	0.191** (0.090)	0.186 (0.200)	0.195 (0.200)	0.199 (0.200)	0.168 (0.201)	0.209 (0.200)
some_college	0.182* (0.099)	0.207 (0.220)	0.170 (0.223)	0.175 (0.223)	0.182 (0.221)	0.177 (0.223)
college	-0.073 (0.104)	-0.076 (0.232)	-0.074 (0.233)	-0.076 (0.233)	-0.063 (0.230)	-0.077 (0.233)
income_1	-0.278** (0.122)	-0.366 (0.283)	-0.288 (0.271)	-0.198 (0.260)	-0.242 (0.272)	-0.333 (0.273)
income_2	0.244** (0.102)	0.278 (0.233)	0.226 (0.228)	0.240 (0.225)	0.284 (0.228)	0.188 (0.230)
income_3	0.411*** (0.098)	0.426* (0.219)	0.370* (0.222)	0.427* (0.219)	0.471** (0.220)	0.359 (0.221)
income_4	0.483*** (0.087)	0.503*** (0.195)	0.499*** (0.193)	0.455** (0.195)	0.513*** (0.195)	0.447** (0.194)
income_5	0.505*** (0.087)	0.522*** (0.194)	0.495** (0.195)	0.501*** (0.195)	0.501*** (0.194)	0.504*** (0.194)
income_6	0.297*** (0.092)	0.276 (0.206)	0.300 (0.207)	0.270 (0.210)	0.313 (0.206)	0.323 (0.202)
female	0.248*** (0.057)	0.227* (0.127)	0.251** (0.127)	0.263** (0.126)	0.241* (0.127)	0.259** (0.126)
other_race	-0.131 (0.101)	-0.158 (0.227)	-0.124 (0.225)	-0.116 (0.226)	-0.145 (0.227)	-0.113 (0.226)
black	0.074 (0.053)	0.054 (0.120)	0.065 (0.119)	0.086 (0.119)	0.081 (0.118)	0.079 (0.119)
hispanic	-0.201*** (0.069)	-0.211 (0.153)	-0.201 (0.154)	-0.200 (0.153)	-0.207 (0.153)	-0.187 (0.153)
unmarried	0.119** (0.054)	0.116 (0.121)	0.128 (0.121)	0.114 (0.121)	0.102 (0.121)	0.136 (0.120)
received credit_card	-0.369*** (0.048)	-0.362*** (0.109)	-0.371*** (0.109)	-0.374*** (0.108)	-0.367*** (0.107)	-0.375*** (0.110)
credit_denied	0.723*** (0.048)	0.721*** (0.108)	0.720*** (0.108)	0.720*** (0.107)	0.737*** (0.105)	0.716*** (0.108)
lower_credit	0.735***	0.745***	0.743***	0.735***	0.729***	0.727***

	(0.082)	(0.183)	(0.183)	(0.185)	(0.183)	(0.184)
finlitscore	-0.082	-0.087	-0.088	-0.081	-0.071	-0.086
	(0.086)	(0.194)	(0.194)	(0.193)	(0.191)	(0.194)
_cons	-2.465***	-2.522***	-2.513***	-2.431***	-2.377***	-2.509***
	(0.184)	(0.419)	(0.420)	(0.406)	(0.397)	(0.420)
Obs.	16774	3353	3354	3355	3356	3356
Pseudo R ²	0.171	0.171	0.171	0.172	0.173	0.170

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source. Regressions are weighted. Comparison groups are older age group, college plus education, highest income group, male and white.



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