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Household Assets and Food Stamp Program Participation among Eligible Low-income Households

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Household Assets and Food Stamp Program Participation among Eligible Low-income Households

This study examines the association between asset ownership and Food Stamp Program participation among eligible households using a sample from a longitudinal national survey. This study employs two approaches: a multinomial model on the level of program participation and an event history analysis on the duration of eligible nonparticipation spells. Analysis results show that home, vehicle, and bank account ownership are negatively related to program participation, suggesting that asset ownership may reduce low-income households' chances of receiving food assistance. It is recommended that program administrators liberalize asset eligibility rules and simplify procedures to facilitate program participation among low-income asset owners.

Key words: *vehicle, homeownership, financial assets, public assistance*

The Food Stamp Program (FSP)[1] is a federal means-tested entitlement program intended to help low-income families purchase nutritious food (Carlson, Lino, Juan, Hanson, & Basiotis, 2007; Zedlewski & Rader, 2005). FSP provides a critical safety net to low-income households by boosting food purchasing power (Daponte, Haviland, & Kadane 2004; Rosenbaum & Super, 2005). Nonetheless, a significant proportion of FSP-eligible households do not participate in the program; just over half of FSP-eligible households are estimated to have actually received FSP benefits in 2006 (Cunnyngham & Ohls, 2008). Accordingly, low FSP participation among eligible low-income households has become a policy issue (Kornfeld, 2002; U.S. GAO, 2004).

Research to date has examined the roles of employment status and income in determining participation in FSP. Existing literature has found that FSP participation is closely related to employment status and household composition, since unemployment and divorce often precede applications for food assistance (Gleason, Schochet, & Moffitt, 1998; Lubitz & Carr, 1985). The FSP participation rate is lower among employed individuals, who tend to have less time than unemployed individuals do and may find the application process burdensome (McKernan & Ratcliffe, 2003).

There is little research on the role of assets in determining FSP participation (Gleason et al., 1998; McConnell & Ponza, 1999; U.S. GAO, 2004), although assets are likely to influence low-income households' participation in many ways. For example, FSP asset limits may preclude low-income households that own assets beyond the limits from participating. In addition, asset ownership may discourage participation among low-income households with assets below the FSP limit. These

[1] The title of the federal Food Stamp Program (FSP) was changed to the Supplemental Nutrition Assistance Program (SNAP) in October, 2008. We use FSP because our study covers data collected between 1996 and 2000, the period before the program title change.

households may choose not to participate because they do not need FSP benefits, or because program application and recertification incur high transaction costs for applicants with assets.

To address the knowledge gap regarding household assets and program participation, this study examines the effect of household assets on FSP participation among eligible low-income households using national data from the 1996 panel of Survey of Income and Program Participation (SIPP). We chose the 1996 SIPP because it covers the period when FSP asset test rules remained relatively strict between the welfare reform of 1996 and the liberalization of FSP asset limits in the early 2000s. In this way, recent policy changes are not likely to affect analyses in this study.

Background

A major component of the nation's "safety net," the FSP was the largest domestic food and nutrition assistance program administered by the U.S. Department of Agriculture. To ensure that the program targeted households who needed food assistance, the FSP imposed income and asset limits on applicants. The gross and net income limits were set at 130% and 100% of the federal poverty threshold, respectively. In addition, countable assets could not exceed $2,000 for households without elderly or disabled members until recent legislation relaxed asset limits in the FSP.

Recent legislation relaxed FSP eligibility rules to promote FSP participation among low-income households in need. For example, the Agricultural Appropriation Act of 2001 (PL 106-398) and the Food Security and Rural Investment Act of 2002 (PL 107-171) permitted state governments to increase FSP asset limits to be comparable to those of other public assistance programs (e.g. Temporary Assistance to Need Families), leading most states to relax their FSP asset limits (Nam, McKernan, & Ratcliff, 2008). The Food, Conservation, and Energy Act of 2008 allowed FSP asset limits to be indexed to inflation and excluded retirement and education savings from the asset test (Cunnyngham & Ohls, 2008).

These legislative changes occurred as asset limits in FSP and other public assistance programs attracted the attention of policymakers and social researchers, who increasingly recognize the potentially positive effect of assets on long-term development and the potentially negative impacts of asset limits on low-income households' asset accumulation (Nam 2008; Nam, McKernan, & Ratcliffe 2008; Sherraden 1991). For this reason, policymakers may be interested in whether and how asset ownership affects low-income households' participation in public assistance programs, including FSP.

Potential Asset Impacts on Program Participation

We hypothesize that asset ownership may affect low-income families' FSP participation. First, the asset test may disqualify low-income households with assets from receiving benefits, or discourage eligible households from applying. Some eligible households believe that they are ineligible even when their savings fall below the asset limits (Bartlett, Burstein, & Hamilton 2004), while others do not apply for FSP because it is time-consuming to prepare and submit financial documents such as

bank statements (Pavetti, Maloy, & Schott 2002). Others feel that questions about assets at application and recertification are too personal to answer (McConnell & Ponza, 1999).

Second, assets, especially financial assets, provide buffers during economically difficult times that reduce households' need for public assistance. Savings accumulated in the past can be used to meet consumption needs in the event of a sudden income loss (e.g., unemployment) or unexpected expenditure (e.g., unanticipated medical costs) (Carroll, 1997; Friedman, 1957; Nam, Huang, & Sherraden, 2008). Accordingly, low-income families with savings may use the money saved to cover consumption costs during temporary income shortfalls, rather than apply for FSP benefits. Households with non-financial assets may also turn to the credit market during times of economic difficulty, especially if they are already connected to financial institutions. For example, homeowners can expand their economic resources by taking out home equity loans during periods of economic hardship.

Third, certain types of assets (e.g. automobiles and income-generating tools for small businesses) may expand employment opportunities and increase income among low-income families (Danziger et al., 2000; Edin, 2001; Ong, 2002). Accordingly, assets could help owners navigate economic emergencies, lessening their need for FSP. Conversely, vehicle ownership is likely to facilitate FSP application by increasing access to FSP offices. Difficulty making it to appointments at the FSP office may deter families without reliable vehicles from applying for benefits (Gabor, Hardison, & Botsko, 2003; Martin, Cook, Rogers, & Joseph, 2003).

We have limited empirical evidence on how asset ownership impacts FSP participation among eligible low-income and low-asset households. Several studies estimate that 20% to 30% of income-eligible households do not qualify for FSP because their asset levels exceed asset limits (Cunnyngham & Ohls, 2008; Rosso, 2003; Trippe & Schecter, 2007). Some studies provide at least suggestive evidence that assets may reduce FSP participation among eligible households because of confusion about the asset eligibility test (Daponte, Sanders, & Taylor, 1999). Bartlett and Burstein (2004) found that, in a sample of 1,374 eligible nonparticipants, nearly three-quarters (74%) of respondents with bank accounts stated that they would be ineligible, compared to 62% of respondents without accounts. In addition, a substantial proportion of eligible nonparticipants falsely believed that they were ineligible because of their vehicles (15%) or financial assets (12%).

Associations between specific types of asset ownership and FSP participation have been shown in a small number of studies. Using simulated data based on the 2001 March Current Population Survey (N=2,498), one study suggested that homeowners' odds of FSP participation were 30%-50% lower than those of renters (US GAO, 2004). Zedlewski and Rader (2005), who pooled three cross-sectional surveys of the National Survey of American Families (1997, 1999, and 2002) to evaluate FSP participation among welfare leavers, found that homeownership was only statistically significant in 1999, when it reduced the participation rate by 5%. Research on vehicle ownership is also mixed. Although Martin et al. (2003) showed that transportation difficulties limited potential beneficiaries' ability to apply for benefits, Issar and Silver (2008) found that vehicle ownership was negatively

associated with program reentry among a group of previous FSP recipients. Applying an event history analysis to administrative data from Rhode Island (*N*=27,400), Issar and Silver (2008) found that vehicle owners had 22% lower odds of returning to the FSP than non-owners, and suggested that this lower likelihood of return could be explained by vehicle owners' greater access to job opportunities. Zedlewski and Rader (2005) found that welfare leavers who owned cars had FSP participation rates 5%-10% lower than those without a car across three time points. Families who earned income from financial assets also had decreased rates of participation in 1997 and 2002 (Zedlewski & Rader, 2005).

Invaluable as they are, existing studies have limitations. First, a proportion of previous studies report mainly descriptive statistics, such as the percentage of income-eligible households whose asset ownership renders them ineligible for FSP (Cunnyngham & Ohls, 2008; Trippe & Schechter, 2007; Wemmerus & Gottlieb, 1999). Findings from descriptive studies are limited because we cannot rule out spurious associations caused by third factors (Greene, 2003). Second, with one exception (Zedlewski & Rader, 2005), multivariate analyses generally include only one single asset measure to examine determinants of FSP participation, such as homeownership in the U.S. GAO (2004), vehicle ownership in Issar and Silver (2008), and "having some assets" in Bartlett and Burstein (2004). Third, most previous studies examine asset impacts on FSP participation using cross-sectional data (e.g., U.S. GAO 2004; Zedlewski & Rader, 2005), which may not be able to capture dynamic associations between asset ownership and FSP participation. One study based on longitudinal data (Issar & Silver, 2008) used data collected from one state, not from a nationally representative sample.

To fill gaps in our current knowledge, this study investigates asset impacts on FSP participation using the 1996 panel of the Survey of Income and Program Participation (SIPP). This study contributes to the field in two major ways. First, by using multivariate analysis with a comprehensive list of asset measures—including vehicle ownership, homeownership, and financial assets (bank account ownership and total amount of financial assets)—we are able to measure how each asset type differentially affects the decision to participate in FSP.

Second, unlike prior studies, we use longitudinal data collected from a nationally representative sample to explore the dynamics of program participation through low-income households' level of participation and nonparticipation duration. We summarize households' level of participation over four waves to show the proportion of time on FSP while eligible. We also investigate whether low-income households with assets take longer to participate in FSP than those without assets when they become eligible.

Method

Data and Sample

The SIPP is a longitudinal survey from a nationally representative sample on demographics, economic resources (income and assets), employment, and public assistance program participation.

The 1996 SIPP collected data over 12 waves, interviewing respondents every fourth month from December 1995 to February 2000 to collect core information, and asking additional questions on supplementary topics at longer intervals (U.S. Census Bureau, 2001). As discussed above, we chose an observation period when FSP rules remained relatively stable and strict. We use data from waves 3, 6, 9, and 12 because only these waves collected information on assets and liabilities. We also utilize wave 2 data on householders' immigration status.

In the study sample, we include households that were eligible for FSP at least once during the observation period, had at least one child, and were headed by non-disabled individuals aged between 18 and 59. We exclude households without children because able-bodied adults without dependents were subject to stricter work requirements during the observation period and were more likely to be ineligible for FSP than those in comparable economic situations who had children. We also exclude a small number of households headed by minors (under age 18) because these households may face unique legal or economic conditions, distinct from those faced by other households, that could influence FSP participation. We exclude households with disabled or elderly members (60 years old or older) because FSP asset limits are higher for these households. We restrict our sample only to households eligible for FSP at least once during the observation period because our focus was on why some low-income households did not participate in FSP even when they were eligible.

In determining FSP eligibility, this study takes household income, assets, and TANF receipt into account. Following previous studies (e.g., Farrell, Fishman, Langley, & Stapleton, 2003; Heflin & Ziliak, 2008; Ratcliffe, & McKernan, 2008; Zedlewski & Gruber, 2001), we use the global income test, treating households with gross monthly income of less than 130% of the poverty line as income eligible. We consider households with countable assets—the sum of financial assets and vehicle assets exceeding the vehicle asset limit—of less than $2,000 as asset eligible (Bloom, 2003). In calculating household vehicle assets, FSP includes the fair-market values of the first two vehicles net of $4,650, excluding income-producing vehicles (e.g., a taxi or ice cream truck). All other vehicles are valued at either (1) the fair-market value in excess of $4,650 or (2) the equity value for each vehicle, whichever is larger. Finally, since welfare (TANF) recipients are automatically eligible for FSP under a categorical eligibility rule, we treat those on TANF as FSP eligible.[2]

Analytical Models

This study employs two approaches to examine FSP participation. Focusing first on the level of program participation, we use multinomial logit regression to investigate whether asset ownership differentiates households who fully participate in FSP from those who partially participate or do not participate in FSP. The second approach employs discrete-time event history analyses to further examine whether asset ownership is associated with length of eligible nonparticipation spells.

[2] Our FSP eligibility criteria are estimated to be reliable. When comparing with actual FSP participation, less than 1.5% of the sample is assessed to receive FSP while estimated as ineligible under our criteria.

Level of FSP participation. The dependent variable for the level-of-participation analyses consists of three categories summarized from households' total eligible waves during the observation period: (1) no participation (households never participated while they were eligible during the observation period); (2) partial participation (households participated in FSP for some portion of the eligible period); and (3) full participation (households always participated in FSP as long as they were eligible).

The key independent variables are various measures of assets measured at the first eligible wave. We include three indicators of asset ownership in the first analysis model: home, vehicle, and bank accounts (yes=1, no=0). We run a second analysis model using the amount of household financial assets to replace bank account ownership. Financial assets include money in checking/savings accounts, money markets, certificates of deposit, stock/mutual funds, and money in IRA and KEOGH accounts. In regressions, we use the natural logarithm of continuous financial assets[3] because this variable's distribution is highly skewed.

Both analytical models control for heads' and households' characteristics and other relevant factors. Heads' characteristics include age, race and Hispanic origin, education, and immigration status (native citizen, naturalized citizen, and noncitizen). Household characteristics include household types (households headed by couples, single males, or single females), household size, number of children, and residence in metropolitan areas (yes=1, no=0). We also use the state unemployment rate obtained from the Bureau of Labor Statistics as an indicator of macroeconomic conditions. All control variables are measured at households' first eligible wave. All analyses are weighted by household-level weight for the last eligible wave provided by the SIPP.

To test the robustness of our findings in the level-of-participation analyses, an additional analysis is conducted after removing households who were eligible for FSP for only one wave during the observation period. Results from the additional analysis are consistent with what is reported here (Results from supplementary analyses are available from the first author upon request).

Event history analyses of eligible nonparticipation spells. Informative as it is, the level-of-participation analyses are not free from limitations. For example, given the same level of participation, one household may participate in FSP immediately upon becoming eligible, while another one may postpone the decision to participate. To some extent, the duration of eligible nonparticipation reflects both households' capacity to deal with economic difficulties without public food assistance and their willingness to participate in the program. The level-of-participation analyses, however, cannot capture this important information. Furthermore, the level-of-participation analyses are unable to differentiate households that joined FSP after becoming eligible and those that lost their eligibility before participating in FSP.

[3] We replace values less than 1 with '1' before log-transforming the variable to prevent missing values.

As a result, we employed discrete-time event history analyses to identify factors associated with length of eligible nonparticipation spells. Households "enter" an eligible nonparticipation spell when they became eligible for FSP but do not participate in the program, and "exit" the spell either through FSP participation or loss of eligibility due to an increase in income or assets. Although FSP participation and eligibility are determined on a monthly basis, we use yearly information to define eligible nonparticipation spells because our asset data were collected on a yearly basis.

Discrete-time event history analysis enables us to differentiate nonparticipant households that retained eligibility for longer periods from nonparticipant households that retained eligibility for shorter periods. In addition, event history analysis has the capacity to incorporate changes in both dependent and independent variables into analyses (Allison, 1984; Box-Steffensmeier & Jones, 1997; Yamaguchi, 1991). In this study, discrete-time event history analyses estimate the probability that households will participate or lose program eligibility during a particular year, given that they were eligible non-participant households the previous year.

During the observation period, low-income households may experience several eligible nonparticipation spells. For event history analyses, we further restrict our sample to the first eligible nonparticipation spell from each household. In addition, we do not include left-censored spells, i.e., spells that started before the first observation in our data. Since we do not know when they started, it is possible that including these left-censored spells would cause selection bias; in other words, unobserved characteristics may differentiate these observed spells from other spells that ended before the first observation (Yamaguchi, 1991).

The dependent variable in event history analyses is three possible "exiting" statuses from an eligible nonparticipation spell at each wave: (1) exiting by participating in FSP, (2) exiting by losing eligibility (income or assets increased beyond the limit), and (3) remaining on the eligible nonparticipation spell (reference category). We differentiate two different types of exits from each other because those who exit through FSP participation are likely to be different from those who lose eligibility. We use multinomial logit regressions because the dependent variable consists of three categories. Standard errors are clustered by household to account for multiple observations from the same household (Greene, 2003).

We use the same model specifications as those in the level-of-participation analyses: (1) one analysis that uses three dichotomous asset ownership measures, and (2) a second that replaces bank account ownership with the continuous financial asset variable. We use asset variables measured at the preceding wave (*t-1*) of the dependent variable to address a potential endogeneity issue: to remain eligible for FSP, some households that could otherwise have saved may have chosen not to accumulate assets. Event history analyses include the same control variables as the level-of-participation analyses. All control variables are time-varying except household head's race and immigrant status. In addition, dummy indicators of observed time-points (wave) are included in analyses to allow for an estimation of non-parametric baseline hazard. All analyses are weighted by household-level weight for the last eligible wave provided by the SIPP.

To test the robustness of our findings from event history analyses, we conduct supplementary analyses. First, we conduct analyses using asset measures observed at a different time-point: one uses time-varying asset measures observed in the concurrent wave (*t* instead of *t-1*) of the dependent variable; the others employ time-invariant asset measures observed at the first eligible wave. Second, we run models after adding householder's employment status observed in the concurrent wave of the dependent variable. Results from these additional analyses do not substantively differ from those reported here (Results from supplementary analyses are available from the first author upon request).

Results

Sample Characteristics

Table 1 presents demographic and household characteristics measured at the first eligible wave from the two analytical samples: a sample for the level-of-participation analyses and another for discrete-time event history analyses. Reflecting economic difficulties among households eligible for FSP, the majority in both samples are headed by members of racial/ethnic minority groups and individuals without college education, and the majority of households do not own their homes or hold bank accounts. Table 1 also shows that the event-history-analysis sample is socioeconomically advantaged compared to the level-of-participation analysis sample: Households in the former sample are more likely to be headed by couples and by college-educated individuals than the latter, and home, vehicle, and bank account ownership rates are much higher among the former than the latter. These differences may reflect the fact that the level-of-participation analysis sample includes long-term spells excluded in the event-history-analysis sample.

Analysis Results on Level of FSP Participation

Weighted percentage distribution of level of FSP participation is reported in Table 2. About half of eligible households never participated in FSP, 16% participated in FSP partially, and another 33% were always in the program as long as they were eligible.

Table 3 summarizes the analysis results on level of participation. In these analyses, the reference category is nonparticipation (never participated in FSP while eligible during the observation period). These analyses produced two sets of coefficients. One set contrasts the probability of participating partially in FSP during the eligible period with that of never participating in the program; the other set compares the probability of full participation to that of nonparticipation. As expected, households headed by younger individuals (aged 19-24) and single mothers are more likely to participate in the program. In addition, head's education has a negative association with FSP participation, and households headed by noncitizens are significantly less likely to participate in FSP than those headed by citizens with similar characteristics.

Table 1. Descriptive characteristics of the samples (Weighted)

	Level-of-Participation Analysis Sample	Event History Analysis Sample
Age (%)		
<=24	14.43	8.75
25-34	35.94	38.07
35-44	33.70	38.05
>=45	15.93	15.13
Race		
Non-Hispanic White	43.75	48.40
Non-Hispanic Black	26.17	24.26
Non-Hispanic other	4.29	3.84
Hispanic	25.79	23.50
Household type		
Couple-headed	41.20	50.19
Single male-headed	7.70	6.80
Single female-headed	51.10	43.01
Education		
Less than HS	34.56	30.13
HS	37.02	35.86
Above HS	28.41	34.01
Metro (yes)	78.63	80.00
Number of children (Mean)	2.20	2.18
Household size (Mean)	4.00	4.00
Citizenship		
Native	79.06	79.04
Naturalized	3.76	4.04
Non-citizen	17.17	16.91
State unemployment rate (Mean)	5.31	4.75
Vehicle ownership	64.45	72.01
Homeownership (yes)	28.61	35.55
Checking/Saving account (yes)	33.41	38.95
Amount of financial assets		
Mean	482.27	318.80
Median	0	0
Amount of financial assets (top 5% removal)		
Mean	0	27.25
Median	31.82	0
Unweighted Sample Size (N)	3,528	942

Table 2. Weighted Percentage Distribution of Level of FSP Participation (Unweighted, N=3,528)

Level of Participation	Percentage
No participation	50.95
Partial participation	16.24
Full participation	32.82

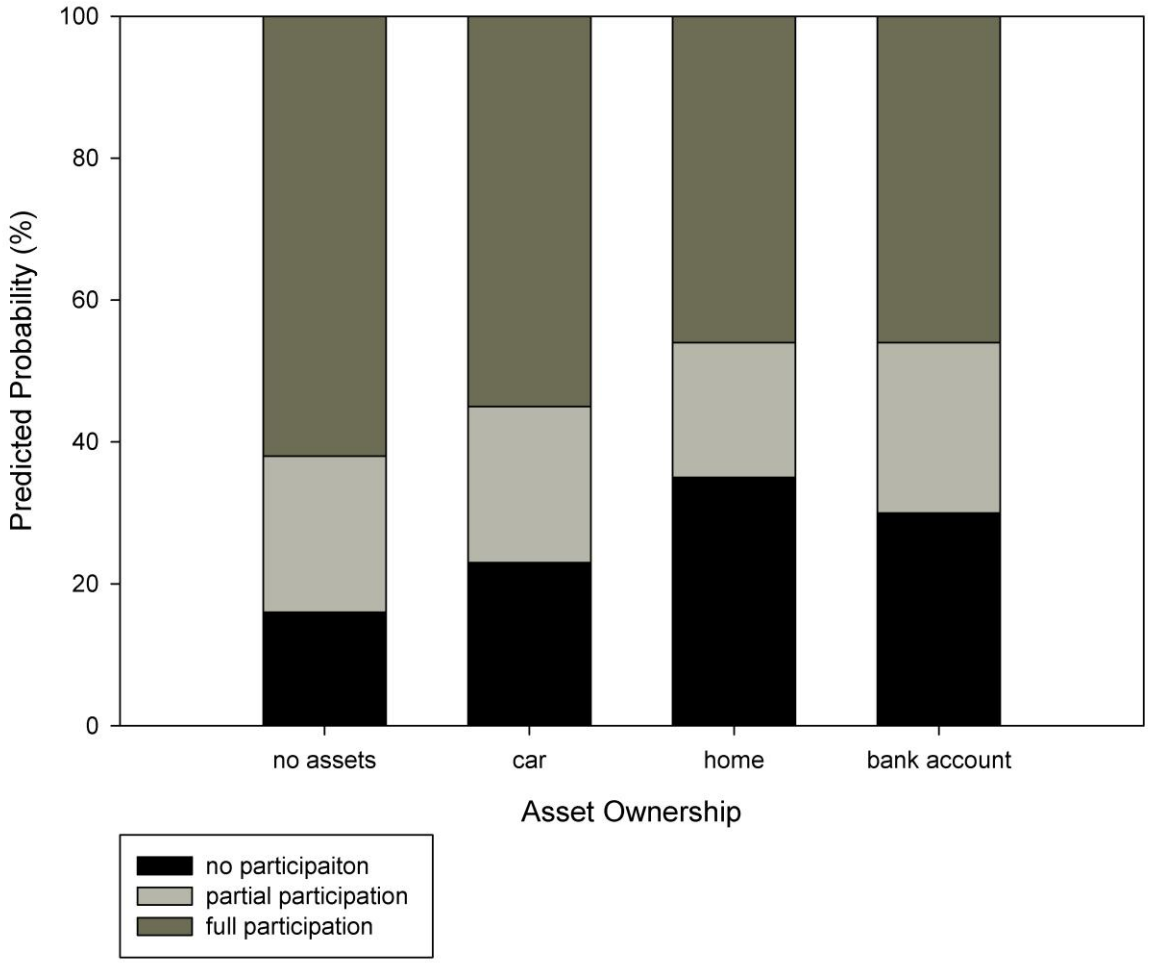
Table 3. Multinomial-logit analyses on the level of FSP participation (weighted)

Variables	Model 1: Asset Ownership Model		Model 2: Financial Asset Amount Model	
	Partial Participation	Full Participation	Partial Participation	Full Participation
Asset holding measures				
Vehicle ownership	-0.30*	-0.45***	-0.32*	-0.50***
	(0.13)	(0.10)	(0.13)	(0.10)
Homeownership	-0.62***	-0.60***	-0.63***	-0.63***
	(0.14)	(0.12)	(0.14)	(0.12)
Account ownership	-0.22	-0.49***		
	(0.13)	(0.11)		
Financial assets			-0.03	-0.03
			(0.03)	(0.02)
Covariates				
Age (ref: 25-34)				
<=24	0.33	0.30*	0.34	0.32*
	(0.18)	(0.15)	(0.18)	(0.15)
35-44	-0.48***	-0.29**	-0.47***	-0.28*
	(0.14)	(0.11)	(0.14)	(0.11)
>=45	-0.35	-0.17	-0.34	-0.17
	(0.19)	(0.15)	(0.19)	(0.15)
Race (ref: White)				
Black	0.26	0.08	0.30*	0.14
	(0.15)	(0.12)	(0.15)	(0.12)
Hispanics	0.21	0.70**	0.22	0.71**
	(0.29)	(0.23)	(0.29)	(0.23)
Others	-0.33	-0.24	-0.32	-0.19
	(0.19)	(0.16)	(0.19)	(0.16)
Household types (ref: Couples)				
Single male-headed	0.03	0.37	0.04	0.39
	(0.28)	(0.21)	(0.28)	(0.21)
Single female-headed	0.91***	1.64***	0.91***	1.64***
	(0.15)	(0.12)	(0.15)	(0.12)
Education (ref: Below HS)				
High school	-0.48***	-0.35**	-0.49***	-0.38**
	(0.14)	(0.12)	(0.14)	(0.12)
Above high school	-0.66***	-0.42***	-0.69***	-0.51***
	(0.16)	(0.13)	(0.15)	(0.13)
Residence (metro area)	-0.36*	-0.21	-0.36*	-0.21
	(0.14)	(0.13)	(0.14)	(0.13)
Number of children	0.17	0.06	0.17	0.05
	(0.10)	(0.08)	(0.10)	(0.08)
Household size	0.09	0.26***	0.10	0.27***
	(0.08)	(0.07)	(0.08)	(0.07)
Citizenship				
Naturalized	0.03	-0.68**	0.02	-0.70**
	(0.29)	(0.26)	(0.29)	(0.26)
Non-citizen	-0.52**	-0.83***	-0.51**	-0.82***
	(0.20)	(0.18)	(0.20)	(0.18)
State unemployment rate	0.39***	0.26***	0.39***	0.26***
	(0.05)	(0.05)	(0.05)	(0.05)
Observations	3276		3276	

Note: 252 observations are deleted due to missing values on citizenship variable. Robust standard errors in parentheses. ***p<.001 **p<0.01, *p<0.05.

Analysis results show that asset ownership negatively influences level of FSP participation. In both models, vehicle ownership significantly decreased households' probability of participating, either partially or fully, in FSP. Homeownership also shows a significantly negative association with program participation in both models: homeowners are significantly less likely than renters to participate in FSP partially or fully while eligible. In addition, bank account ownership has a significantly negative association with one's chance of full participation, although the amount of financial assets has no significant association with FSP participation, as shown in Table 3. These results suggest that account ownership itself, regardless of the amount of savings in accounts, may influence households' FSP participation.

Figure 1. Asset ownership and predicted probability of FSP participation



To show the magnitude of difference that asset ownership makes, we estimate predicted probabilities of FSP participation for a typical low-income, low-resource household using Model 1 of Table 3. In our sample, a typical household is headed by a white, single, native mother aged 25-34 with education below high school; this household has four members, including two children; and

lives in a metro area with a state unemployment rate 5.3%. As shown in Figure 1, car owners' predicted probability of nonparticipation is seven percentage points higher than comparable households without any assets (23% versus 16%). By contrast, car owners' predicted chance of full participation is seven percentage points lower than counterparts who have no assets (55% versus 62%). For typical households with a home, the predicted probability of never participating in FSP while eligible is more than twice that of typical households without any assets (35% versus 16%). The difference in the predicted probability of nonparticipation between households having a bank account and those without is 14 percentage points (30% versus 16%).

Results from Event History Analyses

Figure 2. Kaplan-Meier survival functions by exit type of nonparticipation spells

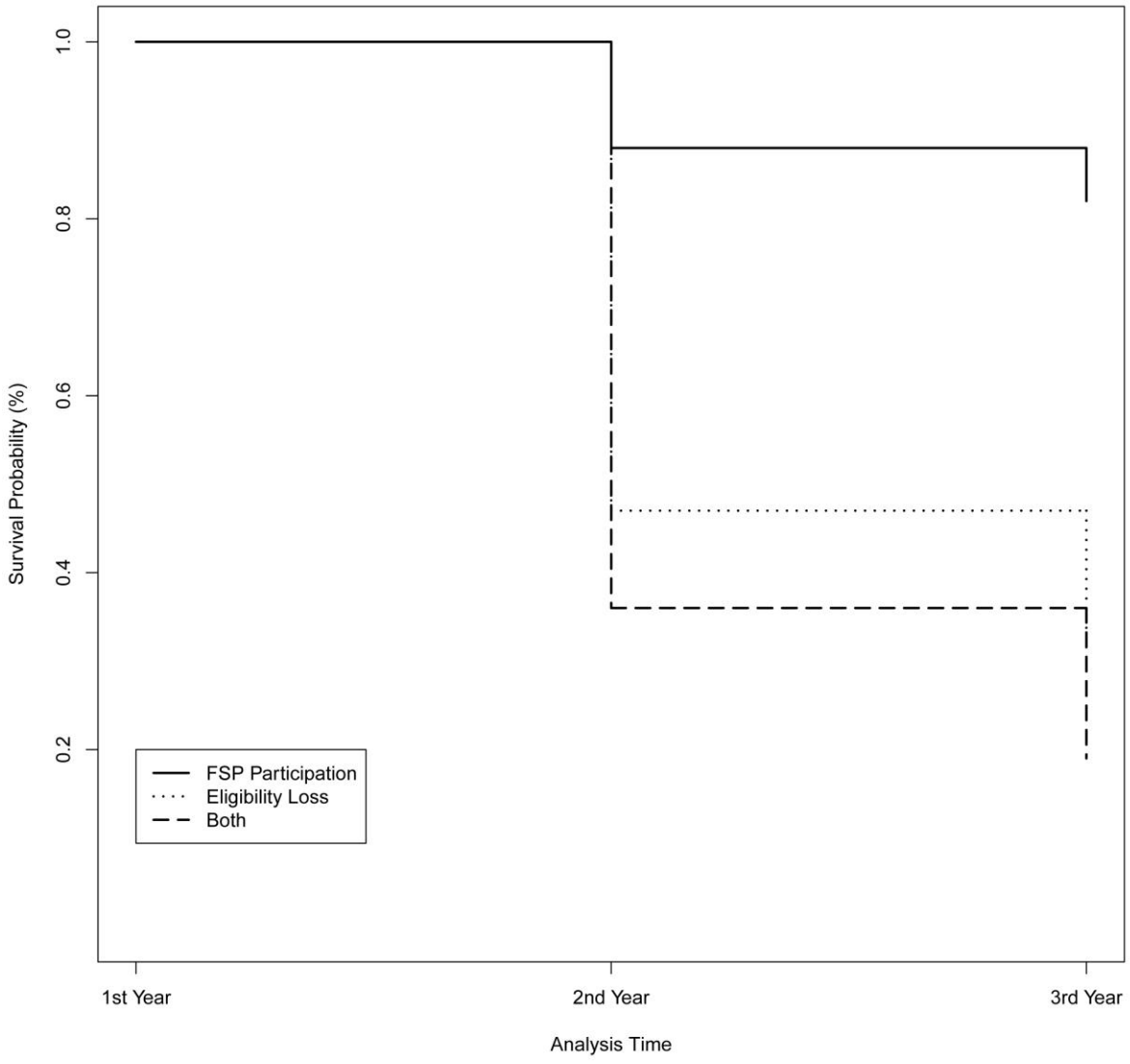


Figure 2 shows survival functions by exit type. Survival functions indicate that one's probability of exiting eligible nonparticipation spells is conditional on the household not having done so earlier. Most eligible nonparticipation spells ended within three years, with about 70% of spells ending by the second year and another 10% by the third year, leaving only 20% of households that retained eligible non-participant status into the third year. Figure 2 also demonstrates that more spells ended through eligibility loss than through program participation.

Table 4 reports the results from two event history analyses: one with bank account ownership and another with the continuous measure of financial assets. Each model produces two sets of coefficients. One set estimates the association between each independent variable and the relative rate of leaving an eligible nonparticipation spell through FSP participation compared to staying. The other set assesses the rate of exiting the spell by losing eligibility against the likelihood of remaining eligible without participating. Most control variables have coefficients with expected signs. Households headed by younger heads (aged 19-24) and by single parents are less likely to exit spells by losing eligibility. Households led by highly educated heads are significantly less likely to end their spells through program participation.

Table 4 demonstrates the role of asset holdings on a household's probability of exiting an eligible nonparticipation spell. Among three types of asset ownership, vehicle ownership has a significantly negative coefficient in exit through program participation in both models, suggesting that vehicle ownership may have decreased households' chances of participating in FSP. However, vehicle ownership does not have a significant association with eligibility loss. These findings do not support a hypothesis that vehicle ownership may reduce risk of FSP participation by expanding economic opportunities such as employment prospects. Instead, results suggest that vehicle ownership does not increase income or assets to the extent that households lose FSP eligibility. In addition, our supplementary analyses that include employment status produced results similar to those in Table 4, implying that employment is not a mediating factor between asset ownership and FSP participation. Two other types of assets (home and financial assets) do not have significant associations with either type of exit.

It is noteworthy that the event-history and level-of-participation analyses show different effects of home and bank account ownership on FSP participation. These differences may be the result of different sample compositions and distinct analytical methods. First, event history analyses restrict the analysis sample to households whose eligible nonparticipation spells started after the observation and, therefore, exclude those that remain on the spell throughout the observation period. By contrast, the level-of-participation analyses include every household ever eligible for FSP during the observation period. As a result, the sample size is much smaller for event history analyses than for the level-of-participation analyses. Second, event history analyses differentiate routes by which households exit eligible participation spells (FSP participation versus lost eligibility), while the level-of-participation analyses focus on the proportion of time that households were on FSP while eligible.

Table 4. Event history analyses of eligible nonparticipation spell (weighted)

Variables	Model 1: Asset Ownership Model		Model 2: Financial Asset Amount Model	
	Exit through program participation	Exit through losing eligibility	Exit through program participation	Exit through losing eligibility
Asset holding measures				
Vehicle ownership	-0.64*	-0.13	-0.59*	-0.11
	(0.30)	(0.23)	(0.30)	(0.23)
Homeownership	-0.38	-0.14	-0.37	-0.13
	(0.36)	(0.22)	(0.36)	(0.22)
Account ownership	0.09	0.12		
	(0.34)	(0.21)		
Financial assets			-0.08	0.01
			(0.10)	(0.04)
Covariates				
Age (ref: 25-34)				
<=24	-0.07	-1.23*	-0.07	-1.24*
	(0.57)	(0.48)	(0.58)	(0.49)
35-44	-0.24	0.08	-0.21	0.08
	(0.38)	(0.23)	(0.38)	(0.23)
>=45	0.61	-0.00	0.65	-0.01
	(0.43)	(0.31)	(0.43)	(0.31)
Race (ref: White)				
Black	0.04	-0.19	0.01	-0.21
	(0.36)	(0.29)	(0.35)	(0.28)
Hispanic	-0.28	0.18	-0.22	0.15
	(1.24)	(0.60)	(1.24)	(0.61)
Other	0.15	0.00	0.15	-0.01
	(0.74)	(0.34)	(0.73)	(0.34)
Household types (ref: Couples)				
Single-male-headed	-1.17	-0.71	-1.20	-0.73
	(0.99)	(0.39)	(0.99)	(0.39)
Single-female-headed	0.33	-0.97**	0.30	-0.96**
	(0.42)	(0.24)	(0.43)	(0.24)
Education (ref: Below HS)				
High school	-0.52	-0.26	-0.47	-0.25
	(0.36)	(0.26)	(0.35)	(0.26)
Above high school	-1.06**	0.24	-1.00**	0.26
	(0.39)	(0.25)	(0.39)	(0.25)
Residence (metro area)	-0.55	-0.13	-0.53	-0.14
	(0.39)	(0.26)	(0.40)	(0.27)
Number of children	0.16	-0.29	0.14	-0.28
	(0.34)	(0.19)	(0.34)	(0.19)
Household size	-0.43	-0.13	-0.42	-0.13
	(0.29)	(0.15)	(0.29)	(0.15)

Table 4. Event history analyses of eligible nonparticipation spell (weighted) (continued)

Citizenship				
Naturalized	-0.05	-0.32	-0.07	-0.30
	(1.06)	(0.51)	(1.06)	(0.51)
Non-citizen	-0.57	-0.39	-0.59	-0.38
	(0.76)	(0.37)	(0.75)	(0.37)
State unemployment rate	-0.75**	-0.65**	-0.74**	-0.64**
	(0.15)	(0.09)	(0.14)	(0.09)
2nd Year	4.89***	5.24***	4.83***	5.25***
	(0.33)	(0.22)	(0.33)	(0.24)
3rd Year	3.98***	4.51***	3.92***	4.52***
	(0.57)	(0.34)	(0.56)	(0.34)
Observations	1531		1531	

Notes: 54 observations are deleted due to missing values. Robust standard errors in parentheses. ***p<.001 **p<.01, *p<.05.

Discussion

Using a sample of households eligible for FSP from 1996 SIPP data, this study examines the association between asset ownership and FSP participation. Results of analyses show that various types of asset ownership are negatively related to FSP participation, suggesting that asset ownership may reduce low-income households' FSP participation.

Among three types of asset ownership examined, vehicle ownership has the most salient impact, since it has significant coefficients in both approaches (see Tables 3 and 4). In the level-of-participation analyses, vehicle owners are less likely to participate in FSP—either fully or partially—when they are eligible. In event history analyses, they are also less likely to exit from an eligible nonparticipation spell through program participation. The negative association between vehicle ownership and program participation does not support one aforementioned hypothesis—that vehicle ownership may facilitate participation by providing a convenient transportation tool to FSP offices. It should also be noted that, in event history analyses, vehicle ownership is not significant when comparing losing program eligibility to remaining on the spell. This result is not consistent with the hypothesis that vehicle ownership expands economic opportunities for low-income households.

Consistent with previous studies (U.S. GAO 2004; Zedlewski & Rader, 2005), homeownership has a statistically significant association with level of FSP participation (see Table 3): Homeowners are less likely to participate in FSP than renters. This difference in participation cannot be explained by the asset test, because the FSP asset test does not count housing assets. It may be, as hypothesized in the background section, that homeownership provides economic buffers (e.g., home equity loan) or that homeowners exhibit different characteristics than renters (e.g., better financial management skills). These hypotheses, however, have not been empirically tested in this study.

Bank account ownership shows a significantly negative association with full participation in FSP (see Table 3), but this association does not appear to be related to the amount of assets in the account. In fact, the amount of financial assets held by a household does not have any significant associations with FSP participation. Considering that there is not much variation in financial assets in our sample (only households with less than $2,000 are included), it is not surprising that the amount of financial assets held by a household does not make a difference in FSP participation. The negative association between FSP participation and bank account ownership may result from bank account owners' greater experience working with banks or accessing credit markets than non-owners. This hypothesis, however, has not been tested in this study.

Several limitations of the study should be noted. The relationship between household assets and program participation is complicated because household assets are a determinant of program eligibility. We use asset measures collected before outcome measures (FSP participation variables) were observed, but this approach may not solve the issue of endogeneity. For instance, to cope with economic difficulties, households may already spend down savings at the time we measure asset variables. Therefore, the estimated association between asset ownership and FSP participation may be spurious. In addition, this study uses yearly asset measures, and assumes the same probability of program participation within an observed year. This may produce inaccurate estimation, since program eligibility and participation are determined on a monthly basis. Nonetheless, a variety of robustness tests produce substantively similar results to those reported in this paper.

Conclusion

Low FSP/SNAP participation might not concern policymakers and researchers if low-income households with assets choose not to participate in a food assistance program because they experience minimal need for food assistance, have other economic resources to rely on, or can improve household economic circumstances quickly. But policymakers should be concerned about low FSP/SNAP participation if eligible households face severe obstacles during the application and recertification processes that inhibit participation. Our study provides only suggestive evidence on this issue. Vehicle ownership may reduce one's chance of exiting an eligible nonparticipation spell through FSP/SNAP participation but does not increase one's chance of leaving the spell due to income or asset increases (losing eligibility). These results suggest that vehicle ownership may impose barriers to FSP/SNAP participation without providing a meaningful improvement to owners' economic situations. The asset test rules on vehicle equity during our observation period were complicated, and it is difficult to estimate the market value and equity of vehicles. Low-income vehicle owners may have had misconceptions about their eligibility that lead them to maintain their eligible nonparticipation status.

Policymakers should also be concerned that eligible asset owners may be spending down their assets to meet food consumption needs rather than participating in a food assistance program. This suggests that non-participant households are diverting assets accumulated for long-term investment toward short-term consumption. The purpose of asset accumulation includes not just consumption

smoothing but also long-term investment, and it has been recognized by policymakers that asset development is important to help low-income households transition out of poverty over the long term. For low-income households with limited assets, spending down their savings for current consumption may indicate a loss of opportunity to accumulate assets for long-term development. Therefore, the latest policy change may protect savings for long-term investment by excluding retirement and educational savings from the FSP/SNAP asset test. To ensure that asset development does not present barriers to obtaining public assistance, this policy option encourages low-income households to accumulate assets for long-term development.

Accordingly, it is recommended that the USDA remove barriers to FSP/SNAP participation among asset owners. Liberalizing asset eligibility rules may be one way to reach this goal. Although not a major topic of our study, restrictive asset eligibility rules prohibit a substantial proportion of low-income households from receiving FSP/SNAP benefits (Cunnyngham & Ohls, 2008). For this reason, recent policy changes have been desirable, because they provided state governments the flexibility to define less restrictive FSP/SNAP asset tests.

Beyond revisions to asset rules, simplifying program administrative procedures can further reduce transaction costs to participation for households with assets. Given the complexity of asset rules, households with assets have to gather and report asset information, navigate a time-consuming application and client interview process, and wait for the local office to verify their asset eligibility. Furthermore, household's eligibility information was monitored on a monthly basis before 2001. Households with assets face more administrative work during the process of program application and participation than those who do not have assets. This option may also reduce transaction costs for program participants with assets.

Finally, federal and state governments should expand outreach and education effects to correct misconceptions about asset rules. Low-income households with assets who still need food assistance may not be aware of their eligibility. Bartlett et al. (2004) shows that households with some assets are statistically less likely to be aware of their eligibility, and O'Brien (2008) demonstrates that many low-income individuals believe that they would not be eligible for welfare while they have savings in their accounts, even when it falls below the asset limit. Accordingly, it is essential to educate low-income households on asset eligibility rules.

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