United States Department of Agriculture

Economic Research Service

Economic Information Bulletin Number 176

August 2017

The Food-Spending Patterns of Households Participating in the Supplemental Nutrition Assistance Program: Findings From USDA's FoodAPS

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Recommended citation format for this publication:

Tiehen, Laura, Constance Newman, and John A. Kirlin. *The Food-Spending Patterns of Households Participating in the Supplemental Nutrition Assistance Program: Findings From USDA's FoodAPS,* EIB-176, U.S. Department of Agriculture, Economic Research Service, August 2017.

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Abstract

USDA's Supplemental Nutrition Assistance Program (SNAP) is designed to increase the food purchasing power of low-income households. A recent USDA survey—the National Household Food Acquisition and Purchase Survey (FoodAPS)—provides a unique opportunity to gain a comprehensive understanding of the food spending of SNAP households. This study finds that, when adjusted for household size and composition, average food spending in SNAP households is lower than in other U.S. households, even those that are eligible for SNAP but choose not to participate. Food-at-home spending accounts for a greater share of the total food expenditures of SNAP households than of other households. SNAP benefits account for over 60 percent of the average food-at-home expenditures of SNAP households. They also play a strong role in the food budgets of households with children and those in poverty, especially those in deep poverty. Among both SNAP households and eligible nonparticipant households, those that are food secure spend more on food than those that are food insecure. Finally, this study finds clear evidence of a cyclical pattern in the food spending of SNAP households across the benefit month.

Keywords: FoodAPS, National Household Food Acquisition and Purchase Survey, food expenditures, Supplemental Nutrition Assistance Program, SNAP, food insecurity, SNAP benefit cycle

Acknowledgments

The authors thank peer reviewers Jiyoon Kim (Indiana University-Purdue University Fort Wayne), Erin Todd Bronchetti (Swarthmore College), Michele Ver Ploeg (USDA, Economic Research Service (ERS)), and Kameron Burt (USDA, Food and Nutrition Service) for their comments. David Smallwood, Mark Denbaly, and Diansheng Dong (USDA, ERS) provided helpful guidance and review. Thanks also to John Weber and Cynthia A. Ray of ERS for editing and design assistance.

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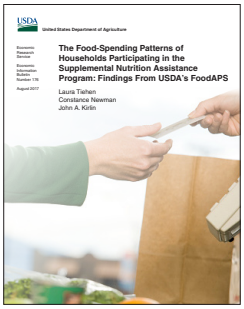

The Food-Spending Patterns of Households Participating in the Supplemental Nutrition Assistance Program: Findings From USDA's FoodAPS

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What Is the Issue?

USDA's Supplemental Nutrition Assistance Program (SNAP) is the cornerstone of Federal food assistance for low-income households and is one of the largest safety net programs in the United States, with program benefits of almost $67 billion in 2016. SNAP is designed to increase the food purchasing power of program participants. This, in turn, should increase their ability to achieve a nutritious diet and attain food security—having enough food for an active, healthy life. Given the significant Federal investment in SNAP, policymakers and program administrators can benefit from having a comprehensive understanding of food expenditures of households that participate in the program. A recent USDA survey—the National Household Food Acquisition and Purchase Survey (FoodAPS)—provides a unique opportunity to conduct a detailed analysis of the food-spending patterns of SNAP households.

This study compares food expenditures of SNAP households with those of eligible nonparticipant households and households overall. Findings provide background information on a number of issues related to the adequacy of SNAP benefits and the importance of SNAP in the food budgets of participating households, the relationship between food spending and food insecurity, and the timing of SNAP benefits.

What Did the Study Find?

The food-spending patterns of SNAP households differ from those of other households, even nonparticipant households whose income and assets are low enough to make them eligible for the program. Key differences in food spending include the following:

- SNAP households spend less on average on food, adjusting for household size and composition, than other households, even compared with eligible nonparticipant households. The average weekly food expenditures per adult-male equivalent (AME) in 2012 were $47 for SNAP households, $61 for eligible nonparticipant households, and $67 for all U.S. households.
- Food-at-home (grocery store) spending accounts for a greater share of the total food expenditures of SNAP households (74 percent) than of eligible nonparticipant households (65 percent) and of all U.S. households (62 percent).

The average weekly total food spending of SNAP households was slightly more than the cost of the Thrifty Food Plan (TFP), which represents combinations of food items that a household could prepare and consume at home to meet current dietary standards at a low cost. However, the average weekly food-at-home spending was 82 percent of the TFP cost. Across SNAP households, food-spending patterns varied considerably per AME, relative to the TFP, and in the contribution (share) of SNAP to the food budget:

- Food spending was lower in SNAP households with children than in those without children; it was higher in SNAP households without a married head than in those with a married head; and it was higher in SNAP households residing in rural areas than in those living in urban or suburban areas.
- Overall spending in SNAP households did not vary by presence of employed adults. However, SNAP households with employed adults spent more on food away from home and less on food at home than those with no employed adults.
- The contribution of SNAP benefits to food-at-home spending is substantial—at least two-thirds—among households with children and households with income below the poverty line. SNAP benefits account for 80 percent of the food-at-home spending of SNAP households with income below 50 percent of the Federal poverty guidelines.

Among both SNAP households and eligible nonparticipant households, those that are food secure spend more on food than those that are food insecure:

- Most of the difference in total food spending by food-security status can be attributed to differences in average food-at-home spending, whereas the differences in food-away-from-home spending were small and not statistically significant.
- For food-insecure households, average food spending does not vary among those that experience the more severe condition of very low food security and those that do not.

Findings reveal a clear temporal pattern in the food spending of SNAP households across the benefit month:

- On the days just after SNAP benefit receipt, average daily food expenditures are substantially higher than on days during the rest of the month. The same cyclical pattern is seen in food-at-home spending and in the contribution of SNAP benefits to food spending.
- Food-away-from-home spending does not vary over the SNAP benefit month.
- While average food spending declines sharply over the SNAP benefit month, there is no increase in the average number of times SNAP households acquire free food and beverages as the month progresses.

How Was the Study Conducted?

This study uses data from FoodAPS, a nationally representative USDA survey that collected detailed information about food acquisitions by all household members over a 7-day period. Data were collected between April 2012 and January 2013. A total of 4,826 households completed the survey. The main food shopper or meal planner for each household (the primary respondent) provided information on household characteristics, including household size and composition, income, SNAP participation, and food-security status. Primary respondents also supplied information on expenditures for all at-home and away-from-home foods and beverages purchased and acquired from all sources by all household members.

FoodAPS purposely sampled a disproportionately high number of SNAP households and other low-income households. The study uses two approaches to adjust for differences in household size and composition that would be expected to influence food needs: (1) calculating food spending per adult-male equivalent in the household, which is essentially a per-person measure that is adjusted for the average daily energy needs of particular age and gender groups, and (2) comparing household spending to the cost of the Thrifty Food Plan.

The Food-Spending Patterns of Households Participating in the Supplemental Nutrition Assistance Program: Findings From USDA's FoodAPS

Introduction

USDA's Supplemental Nutrition Assistance Program (SNAP) is the cornerstone of Federal food assistance for low-income households and is one of the largest safety net programs in the United States, with program expenditures of almost $67 billion in 2016 (USDA, 2017). An average of 44.2 million persons in 21.8 million households, or about 14 percent of the Nation's population, participated in the program per month in 2016. In that same year, the program provided participating households with a monthly average of $255 in benefits to purchase food.

SNAP is designed to increase the food purchasing power of low-income households and increase their ability to achieve a nutritious diet and attain food security—access to enough food at all times for an active, healthy life. Given the large Federal investment in SNAP, it is beneficial for policymakers and program administrators to have a comprehensive understanding of the food spending of households that participate in the program. A recent nationally representative USDA survey—the National Household Food Acquisition and Purchase Survey (FoodAPS)—provides a unique opportunity to conduct a detailed analysis of the food-spending patterns of SNAP households, including food-at-home and food-away-from-home spending.

This study compares the food-spending patterns of SNAP households with those of eligible nonparticipant households and ineligible households. It examines the effects of household characteristics, including food security status, on food spending by SNAP households. It also documents the contribution of SNAP benefits to total household food spending, using detailed information in the FoodAPS dataset on the source of funds for food shopping. Lastly, the study describes changes in food-spending patterns of SNAP households during the month following receipt of benefits. Findings provide background information on a number of issues related to the adequacy of SNAP benefits and the importance of SNAP in the food budgets of participating households, the relationship between food spending and food insecurity, and the timing of SNAP benefits.

SNAP: Eligibility and Benefits

In contrast with eligibility requirements of many other Government assistance programs serving low-income households, SNAP eligibility does not generally depend on family structure, age, or disability status, so benefits reach a broad range of economically disadvantaged households.[1] SNAP benefits are federally funded, but the program is administered in partnership with the States. For most of its history, the program has had nationally uniform program eligibility standards and benefit levels. Federal eligibility rules stipulate that households must meet three financial criteria to be eligible for SNAP: the gross income, net income, and asset tests. In the month prior to application, a household's gross income must be 130 percent or less of the Federal poverty guidelines, and household net income (gross income less certain deductions, such as a standard deduction and deductions for earned income, dependent care, excess shelter costs, and more) must be 100 percent or less of the Federal poverty guidelines.[2] Lastly, households cannot have more than $2,250 in countable resources (assets), such as a checking or savings account, or $3,250 in countable resources if at least one person in the household is elderly or disabled. However, the asset test does not consider certain resources, such as a home and lot, most retirement (pension) plans, and the benefits received through Supplemental Security Income (SSI) or Temporary Assistance for Needy Families (TANF).

Over the past 15 years, States have been granted increased flexibility in how they administer SNAP in an effort to increase program access, reduce administrative burden, and better align SNAP eligibility requirements with those of other social assistance programs (GAO, 2002). States have used this flexibility to modify the gross income and asset tests faced by SNAP applicants through a policy option referred to as "broad-based categorical eligibility." For example, by 2011, almost all States had either eliminated the Federal liquid asset test for virtually all SNAP households or at least exempted the value of all household vehicles from the asset test (USDA, 2013). In addition, a majority of States have increased the gross income limit for SNAP households to be above 130 percent of the poverty guidelines, to be in alignment with the eligibility guidelines in the same States' cash assistance programs.[3]

The SNAP benefit formula is a function of the maximum SNAP benefit amount (also known as the benefit guarantee) and a household's net income. Households with no net income receive the maximum SNAP benefit, based on the estimated cost of a nutritionally adequate diet for a given household size. The SNAP benefit reduction rate is 30 percent—benefits are reduced by 30 cents for each additional dollar in household net income. SNAP participants receive an Electronic Benefit Transfer (EBT) card that they can redeem for most types of food in over 261,000 authorized commercial retail food stores across the Nation (USDA, 2015). In 2014, over 80 percent of eligible individuals participated in SNAP (Farson Gray and Cunnyngham, 2016).

[1]There are certain restrictions on the receipt of SNAP benefits by legal immigrants and able-bodied adults without dependents (ABAWDs). Households receiving Supplemental Security Income (SSI) or Temporary Assistance to Needy Families (TANF) are categorically eligible.

[2]Households with elderly or disabled individuals have slightly more generous program rules.

[3]As of May 2012, 26 States had gross income thresholds above 130 percent of the poverty guidelines, and 14 of the 26 States set the gross income threshold at 200 percent of the poverty guidelines.

Data and Methods

The FoodAPS survey collected data from 4,826 households in the United States, containing a total of 14,317 household members. The primary respondent for each household—the main food shopper or meal planner—completed two in-person interviews, providing information about the household and individuals in the household. Survey responses provide information on household demographic characteristics, income and employment status, and food-security status. Each primary respondent in the FoodAPS survey was asked to provide detailed information on the foods all household members acquired (even if they were not consumed) over a 7-day period. The FoodAPS household is defined as all persons who live together and share food and who expect to be present at the sampled address during at least part of the data-collection week. The primary respondent was also asked to call the survey's telephone center three times during 7 days to report food acquisition events. The survey was fielded from April 2012 through mid-January 2013. For ease of exposition, this analysis will refer to the study period as calendar year 2012.

This study uses descriptive analyses to examine the average household food expenditures of SNAP households, with some comparisons to three groups of nonparticipating households. SNAP participation is identified through FoodAPS survey responses that indicate whether any household member received SNAP during the month of the initial interview as well as through a match with two types of SNAP administrative data. Administrative data-matching is a unique aspect of FoodAPS used to both confirm household-reported SNAP participation and correct for survey misreporting. The underreporting of participation in SNAP and other social assistance programs in household surveys can be quite severe (Meyer et al., 2009). For example, Mabli and Marlsberger (2013) find that the annual SNAP receipt reported in the Consumer Expenditure Survey over the 2004 to 2010 period is 62 percent lower than the monthly receipt identified in official administrative counts. Many respondents (97.5 percent of the sample) consented to have SNAP administrative records matched to their survey responses, and the resulting administrative record was used to determine participation status in the case of any discrepancy.[4] Almost 9 percent of the 1,581 FoodAPS sample households did not report SNAP participation in the survey interview but were identified as participants via administrative data-matching.

To assess how well FoodAPS captures the broad range of households that participate in SNAP, we compare the characteristics of SNAP households and participants in FoodAPS with those reported from USDA's Quality Control (QC) data (Farson Gray and Eslami, 2014).[5] The QC data are derived from a sample of SNAP administrative records from participating households selected for review as part of USDA's audit system to monitor the accuracy of determinations of eligibility and benefits by State agencies. The QC sample records are weighted to match SNAP caseload totals and provide demographic information that can serve as a useful benchmark to household survey data.

One of the challenges in comparing program administrative data with survey data is the potential discrepancy in the definition of a household across the two data sources. In the QC data, a SNAP unit, based on program standards, is defined as persons who live together and customarily purchase and prepare food together. Although this definition is similar to that used for a FoodAPS "house-

[4]For households that did not consent to the match to administrative data or who lived in States that did not provide SNAP administrative data, SNAP participation is based on the survey report.

[5]Clay et al. (2016) provide a comprehensive comparison of FoodAPS data to data from other national surveys of food spending. We note long-term SNAP recipients will be overrepresented in cross-sectional household surveys like FoodAPS, as well as in cross-sectional samples of administrative caseload data.

hold," it is possible that the guidelines used for each definition could be interpreted differently by survey respondents and program staff. There does seem to be some evidence of this, as the average size of a SNAP household is larger in FoodAPS than in the QC data. In fact, the QC data have a relatively higher share of one-person SNAP households (50 percent) than do the FoodAPS data (32 percent) (appendix table A1). It is possible to have multiple SNAP units residing in a single household, and we find that an estimated 5 percent of FoodAPS SNAP households contain more than one SNAP unit. Consistent with these larger household sizes and the potential for multiple SNAP units in a household, we find a smaller share of SNAP households have household monthly income below the Federal poverty guidelines in FoodAPS (54 percent) than in the QC data (83 percent). Incomes of SNAP households are examined further in a later section of this study.

Though QC and FoodAPS define "household" differently, SNAP participants in the two datasets are quite similar in terms of age, sex, race and ethnicity, and residential location (appendix table A1).[6] However, one notable difference is that Hispanics account for a much larger share of participants in FoodAPS (29 percent) than in QC (14 percent). This disparity may be attributable to the high share of the QC data sample (20 percent) that is missing information on race and ethnicity.

Our primary comparison group for examining food expenditures comprises households determined to be eligible for SNAP but not participating in the program (1,117 sample households). These households are most similar to SNAP households in terms of income and asset levels. To determine SNAP eligibility, we use the indicator simulated in FoodAPS, based on detailed information on household income, assets, and expenses, along with State-level eligibility guidelines (including those applied through broad-based categorical eligibility).[7] The other two comparison groups comprise households that are determined to be ineligible for SNAP: (1) those with monthly income less than or equal to 185 percent of the Federal poverty guidelines (336 sample households), and (2) those with monthly income greater than 185 percent of the Federal poverty guidelines (1,792 sample households). We create the "low-income" group of ineligible households to separate out the relatively more disadvantaged ineligible households from the overall sample of ineligible households.[8]

FoodAPS is designed to provide information on the food expenditures of all members of the household and the funds used to make food purchases, including cash, credit cards, and benefits from SNAP or WIC (The Special Supplemental Nutrition Program for Women, Infants, and Children). The measure of food spending used in this study differs from that used in other published research using FoodAPS. The spending variable commonly used in research using the FoodAPS data is a measure of the total cost of a food purchase which, in addition to the cost of acquired food, may include the cost of nonfood items (e.g., paper towels at a grocery store, a branded tee shirt at a restaurant, or nearly anything at a box store); bottle-deposit fees; tips; and applicable food and nonfood taxes at the local, county, and State levels (for example, Todd and Scharadin, 2016). The measure of food spending in this study includes the sum of all reported (or imputed if missing) costs for reported food items plus estimated bottle-deposit fees, any reported tip, and any estimated taxes

[6]We assume that all members of a SNAP household in FoodAPS are program participants.

[7]We use the eligibility indicator based on model run 4. For further details, see "The National Household Food Acquisition and Purchase Survey (FoodAPS) User's Guide to Survey Design, Data Collection, and Overview of Datasets" on the ERS website.

[8]These households may not qualify for categorical eligibility and have gross income or assets above Federal thresholds, or they may have net income above 100 percent of the poverty guidelines or be in a group, such as able-bodied adults without dependents (ABAWDs) or some legal immigrants, whose SNAP eligibility is restricted. Most States (46) had waived the ABAWD eligibility restrictions in fiscal year 2012, though 6 States had only partial waivers, and Delaware had no waivers.

on food items. This is about 20 percent lower, on average, than the more commonly used FoodAPS measure of total spending at each food acquisition. The measure used in this analysis is similar conceptually to one used in an ERS study comparing FoodAPS results on a variety of measures with results from other national surveys (Clay et al., 2016), but the estimates of food spending in that report are, on average, about 7 percent lower. The two studies have nearly equivalent estimates for spending on food at home, but the estimates for spending on food away from home by Clay et al. (2016) are 16 percent lower than those in this study.[9]

Households also report the acquisition of foods from a home garden, a food pantry, or family and friends. These acquisitions do not require payment and are not included in our analysis of food expenditures. However, we do examine the number of free food acquisition events that occur in SNAP households.

When examining average household food expenditures, it is important to adjust for differences in household size and composition that would be expected to influence food needs. We adjust for household size and composition in two ways. First, we use the adult-male equivalent (AME) concept, based on the average daily energy needs for particular age and gender groups, as found in the *2010 Dietary Guidelines for Americans*. The advantage of the AME measure, compared with a per-person spending measure, is that it accounts for differing caloric needs based on the age and gender of household members. For example, the estimated daily energy needs of an adult male age 31 to 50 are 2,200 calories. The estimated daily energy needs for an adult female age 31 to 50 and a girl age 2 are 1,800 calories and 1,000 calories, respectively. Therefore, a three-person household with an adult male, an adult female, and a girl age 2 would have 2.27 AMEs (calculated as 1.00 + 0.82 + 0.45).

Second, we use the cost of the Thrifty Food Plan (TFP), which represents a set of "market baskets" of food that people in specific age and gender categories could prepare and consume at home to maintain a healthful diet that meets current dietary standards. The cost of the TFP, which was developed by USDA, is based on average food prices across the United States and does not account for geographic price variation. It is designed for a reference household of two adults and two young children. In 2012, the cost of the TFP for this reference household was $126 per week (the sum of $41.70 for an adult male, $37.00 for an adult female, $23.20 for a child age 2-3, and $24.10 for a child age 4-5). The cost of the TFP market basket for a household is further adjusted according to household size to account for economies of scale in household food purchases and preparation. For example, the per-person cost in a family is increased by 5 percent for a family of three, which means that the cost for an adult male in a family of three would be $43.79 ($41.70 x 1.05). For each household in FoodAPS, we divide weekly food spending by the household-specific cost of the TFP. The TFP serves as a national standard for a nutritious, minimal-cost diet and is used as the basis for SNAP maximum benefit levels.[10] The TFP cost measure differs from the AME measure in two important ways: (1) it represents a budget standard designed to allow households to meet their dietary needs,

[9]Part of the difference between this report and Clay et al. (2016) in food-away-from-home spending is due to differences in the treatment of bottle-deposit fees, taxes, and tips. In addition, our measure of food expenditures is based on adding up prices of all listed foods, whereas Clay et al. use the total paid on the food-away-from-home (FAFH) event. If respondents did not provide a receipt and did not report all food items on an FAFH event, then our estimate could be lower than the total paid on the FAFH event.

[10]SNAP maximum benefit levels are based on the Thrifty Food Plan (TFP) cost for a household of four with a specific age-gender composition and are adjusted by household size to account for economies of scale. Therefore, SNAP benefits adjust with household size but not with the age-gender composition of the household. In this study, we use the TFP cost for August 2012, the midpoint of the data collection period.

rather than simply accounting for differing caloric needs across age and gender, and (2) it accounts for economies of scale in the household food budget.

SNAP households receive their entire monthly benefit in a single payment that is loaded onto their EBT each month. To examine how food expenditures vary over the course of the month after SNAP receipt, we construct a variable that identifies the number of days since the household received its monthly SNAP benefit. The number of days since benefit issuance is calculated as the difference between the date of last SNAP receipt and each of the seven food-reporting dates. Thus, each food-report date for a SNAP household is assigned a specific value of days since SNAP issuance, with day 0 indicating the day of benefit arrival.

Findings

Households that choose to participate in SNAP appear to be more disadvantaged, on average, than households that do not participate, even compared with eligible nonparticipant households.[11] SNAP household heads are younger, have lower levels of education, and are less likely to be married than the heads of eligible nonparticipant households (table 1).[12] SNAP household primary respondents are more likely to be Black or Hispanic and are less likely to be employed than primary respondents in eligible nonparticipant households. And SNAP households are larger and contain more children and fewer elderly members, on average, than eligible nonparticipant households. SNAP households contain an average of 2.90 people, including 1.03 children. In comparison, eligible nonparticipant households contain, on average, 2.21 people, including 0.47 children. These differences in the average number of people in the household and their ages illustrate the importance of accounting for household size and composition when comparing household food expenditures across SNAP participation and income categories.

SNAP households have monthly income that is, on average, 128 percent of the Federal poverty thresholds. This is significantly lower than the average monthly income of any of the subgroups of nonparticipant households—even those that are SNAP-eligible, whose average monthly income is 226 percent of the Federal poverty threshold. Thus, it is clear that, even among the sample of households eligible for SNAP, those who participate in the program are relatively economically disadvantaged. Even so, the average monthly income of both SNAP households and eligible nonparticipants in FoodAPS is higher than might be expected, compared with levels shown in the SNAP QC data. One explanation is that the average monthly income estimates from FoodAPS appear to be influenced by a few relatively high values of reported monthly income. For SNAP households, median household income (94 percent of the Federal poverty guidelines) is substantially lower than average household income. In addition, as noted previously, there is a potential discrepancy between the meaning of a FoodAPS household and a SNAP unit (as defined by program standards).[13]

We explore this issue of higher incomes by examining family income, which excludes the income of unrelated individuals in the household and may be closer to the definition of income used for SNAP eligibility. We find that average monthly family income is 118 percent of the Federal poverty guidelines, while median family income is 86 percent. Among eligible nonparticipant households, average family income is 224 percent of the Federal poverty guidelines and median family income is 150 percent.[14] Finally, many States use broad-based categorical eligibility to extend SNAP eligibility to households with income above 130 percent of the Federal poverty guidelines, which will affect the estimates of average income. This is more likely to affect the average income of eligible nonparticipants than of SNAP participants, given the evidence that

[11]This is consistent with the idea that eligible households with greater needs are more likely to access assistance, as has been noted in prior research, such as Bitler (2015).

[12]The means reported in all tables are weighted using the household weights, and the standard errors account for oversampling and the complex survey design of FoodAPS.

[13]This is consistent with Scherpf et al. (2015), which examines linked data from New York City SNAP administrative records and from the American Community Survey (ACS) and finds that household income is significantly lower within a simulated SNAP unit than in the entire ACS SNAP household.

[14]Another discrepancy is that 5 percent of SNAP households are simulated in FoodAPS to contain more than one SNAP unit. For households with more than one SNAP unit, the income of each SNAP unit would be considered separately when determining SNAP eligibility in a program office, whereas it is combined in the calculation of household income in the survey. However, dropping these households does not have an effect on the mean or median household incomes of SNAP households.

Table 1
Respondent and household characteristics, by SNAP participation and eligibility

			Nonparticipants		
				Not eligible for SNAP	
	Full sample	SNAP participants	SNAP-eligible	Income <= 185% FPL	Income > 185% FPL
Primary respondent	*Mean or share*				
Age (years)	49.78 (0.50)	45.91 (1.01)	53.41* (1.12)	48.77 (2.61)	49.52* (0.54)
Male	0.32 (0.01)	0.27 (0.01)	0.31* (0.02)	0.30 (0.05)	0.34* (0.01)
Non-Hispanic White	0.70 (0.02)	0.46 (0.04)	0.63* (0.04)	0.66* (0.06)	0.77* (0.02)
Non-Hispanic Black	0.13 (0.02)	0.28 (0.05)	0.14* (0.02)	0.18* (0.04)	0.09* (0.02)
Hispanic	0.13 (0.02)	0.24 (0.05)	0.18* (0.03)	0.12* (0.03)	0.09* (0.02)
Other race/ethnicity	0.07 (0.01)	0.05 (0.01)	0.06 (0.02)	0.07 (0.02)	0.07 (0.01)
High school or less education	0.34 (0.02)	0.62 (0.01)	0.46* (0.03)	0.41* (0.05)	0.24* (0.02)
Some college	0.33 (0.02)	0.30 (0.01)	0.29 (0.02)	0.42* (0.07)	0.35* (0.02)
Bachelor degree or more education	0.32 (0.02)	0.08 (0.01)	0.25* (0.03)	0.17* (0.04)	0.41* (0.02)
Married	0.44 (0.02)	0.22 (0.02)	0.33* (0.02)	0.37* (0.04)	0.54* (0.02)
Employed	0.55 (0.01)	0.30 (0.02)	0.40* (0.03)	0.43* (0.06)	0.67* (0.01)
Retired	0.20 (0.01)	0.10 (0.01)	0.30* (0.03)	0.25* (0.07)	0.18* (0.01)
Household characteristics					
Household size	2.42 (0.04)	2.90 (0.08)	2.21* (0.08)	2.47* (0.17)	2.38* (0.04)
# under age 5	0.16 (0.01)	0.33 (0.03)	0.13* (0.01)	0.19* (0.03)	0.13* (0.01)
# age 5-17	0.44 (0.02)	0.70 (0.03)	0.34* (0.04)	0.60 (0.09)	0.40* (0.03)
# age 60 and older	0.48 (0.02)	0.33 (0.03)	0.59* (0.04)	0.40 (0.07)	0.49* (0.03)
# age 18-59	1.34 (0.03)	1.55 (0.05)	1.13* (0.06)	1.27* (0.12)	1.37* (0.03)
Income, % of poverty guideline	381.75 (16.61)	128.16 (6.09)	226.95* (12.89)	148.07* (2.99)	508.00* (20.66)
Food insecure	0.16 (0.01)	0.45 (0.02)	0.23* (0.02)	0.25* (0.04)	0.07* (0.01)
Very low food security	0.07 (0.00)	0.20 (0.01)	0.10* (0.01)	0.08* (0.01)	0.02* (0.00)
SNAP participant	0.14 (0.01)	-na-	-na-	-na-	-na-

Continued—

Table 1
Respondent and household characteristics, by SNAP participation and eligibility—continued

			Nonparticipants		
				Not eligible for SNAP	
	Full sample	SNAP participants	SNAP-eligible	Income <= 185% FPL	Income > 185% FPL
Primary respondent	*Mean or share*				
Owns or leases vehicle	0.89 (0.01)	0.67 (0.03)	0.81* (0.03)	0.89* (0.04)	0.96* (0.01)
Location characteristics					
In rural census tract	0.34 (0.03)	0.28 (0.04)	0.29 (0.05)	0.42* (0.08)	0.36* (0.03)
Midwest	0.31 (0.03)	0.31 (0.03)	0.28 (0.04)	0.35 (0.10)	0.32 (0.04)
South	0.36 (0.04)	0.41 (0.04)	0.38 (0.04)	0.39 (0.09)	0.33* (0.04)
West	0.18 (0.03)	0.16 (0.03)	0.17 (0.03)	0.20 (0.05)	0.18 (0.03)
Northeast	0.15 (0.02)	0.12 (0.03)	0.17 (0.03)	0.06* (0.02)	0.16 (0.03)
Observations	4,826	1,581	1,117	336	1,792

Notes: SNAP=Supplemental Nutrition Assistance Program; FPL = Federal poverty guideline (the criterion used in determining SNAP eligibility). Standard errors (which account for complex survey design) in parentheses; weighted means reported.
* = different from comparison group (SNAP participants) with p<0.10.

Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

only a small portion of participants have monthly income above the Federal eligibility limit (Farson Gray and Eslami, 2014).[15]

Poverty and material hardship are closely related, and just as SNAP households have lower income relative to the poverty thresholds than eligible nonparticipant households, they are also more likely to experience food insecurity. Almost half (45 percent) of SNAP households experienced food insecurity in the month prior to the survey, compared with about one-fourth (23 percent) of eligible nonparticipant households. One in five SNAP households (20 percent) experienced very low food security in the month prior to the survey, reporting multiple indications of disrupted eating patterns and reduced food intake due to limited resources. The rate of very low food security among SNAP households is double that of eligible nonparticipant households (10 percent).[16]

The likelihood of living in a rural census tract is similar among SNAP households (28 percent) and eligible nonparticipant households (29 percent).[17] Both groups of ineligible nonparticipant households are more likely than SNAP households to live in rural areas. The regional distribution of SNAP households is fairly similar to that of eligible nonparticipant households and both groups of

[15]Another potential explanation is measurement error on income, either in the household survey or in the administrative data. We are unable to investigate this as a possible cause of the income discrepancy.

[16]We find very little difference in the geographic location of SNAP households and eligible nonparticipant households (results available from authors).

[17]The "rural" definition is based on measures of population size and density at the census tract level and differs from the "nonmetropolitan" definition used in appendix table A1, which is based on labor market areas at the county level.

ineligible households. SNAP households are overrepresented in the South relative to ineligible households with annual incomes above 185 percent of the poverty line, which is consistent with the higher rates of poverty in that region.

Food spending by SNAP participants versus that of nonparticipants

Total food spending

Based on the FoodAPS data, the average U.S. household spent a weekly average of $132 on food in 2012, including $82 per week on food at home and $50 per week on food away from home (table 2). As noted previously, when examining household food spending, we use two approaches to adjust for differences in household size and composition that would be expected to influence food needs. First, we use the adult-male equivalent concept and find that the average U.S. household spent $67 per week on food per AME. Second, we use the cost of the Thrifty Food Plan and find that U.S. households spent 51 percent more than the TFP cost in an average week in 2012. While spending on food purchased for home consumption accounts for the majority of total food spending (62 percent, calculated as $81.74 as a percent of $131.90), food-away-from-home spending accounts for a substantial portion (38 percent).

Table 2
Mean expenditures on acquired food, by SNAP participation and eligibility

			Nonparticipants		
				Not eligible for SNAP	
	Full sample	SNAP participants	SNAP-eligible	Income <= 185% FPL	Income > 185% FPL
Mean total food expenditures per household ($)	131.90 (2.84)	107.63 (4.48)	105.67 (6.53)	92.74* (7.47)	149.08* (3.59)
per AME ($)	67.20 (1.77)	46.77 (2.12)	60.87* (3.67)	50.37 (4.94)	75.16* (2.23)
relative to Thrifty Food Plan	1.51 (0.04)	1.08 (0.05)	1.33* (0.08)	1.10 (0.09)	1.70* (0.05)
Food-at-home expenditures per household ($)	81.74 (2.04)	80.87 (4.26)	67.93* (4.27)	57.80* (4.06)	88.39 (2.75)
per AME ($)	41.97 (1.21)	35.65 (1.91)	39.97 (2.85)	32.67 (3.19)	44.77* (1.65)
relative to Thrifty Food Plan	0.94 (0.03)	0.82 (0.04)	0.86 (0.06)	0.71* (0.06)	1.01* (0.03)
Food-away-from-home expenditures per household ($)	50.16 (1.46)	26.76 (1.72)	37.74* (3.02)	34.94 (4.62)	60.69* (2.02)
per AME ($)	25.23 (0.86)	11.12 (0.84)	20.90* (1.68)	17.70* (3.26)	30.39* (1.28)
Observations	4,826	1,581	1,117	336	1,792

Notes: SNAP=Supplemental Nutrition Assistance Program; AME=adult-male equivalent. Standard errors (which account for oversampling and complex survey design) in parentheses; weighted means reported. FPL = Federal poverty guideline (the criterion used in determining SNAP eligibility).
* = different from comparison group (SNAP participants) with p<0.10.

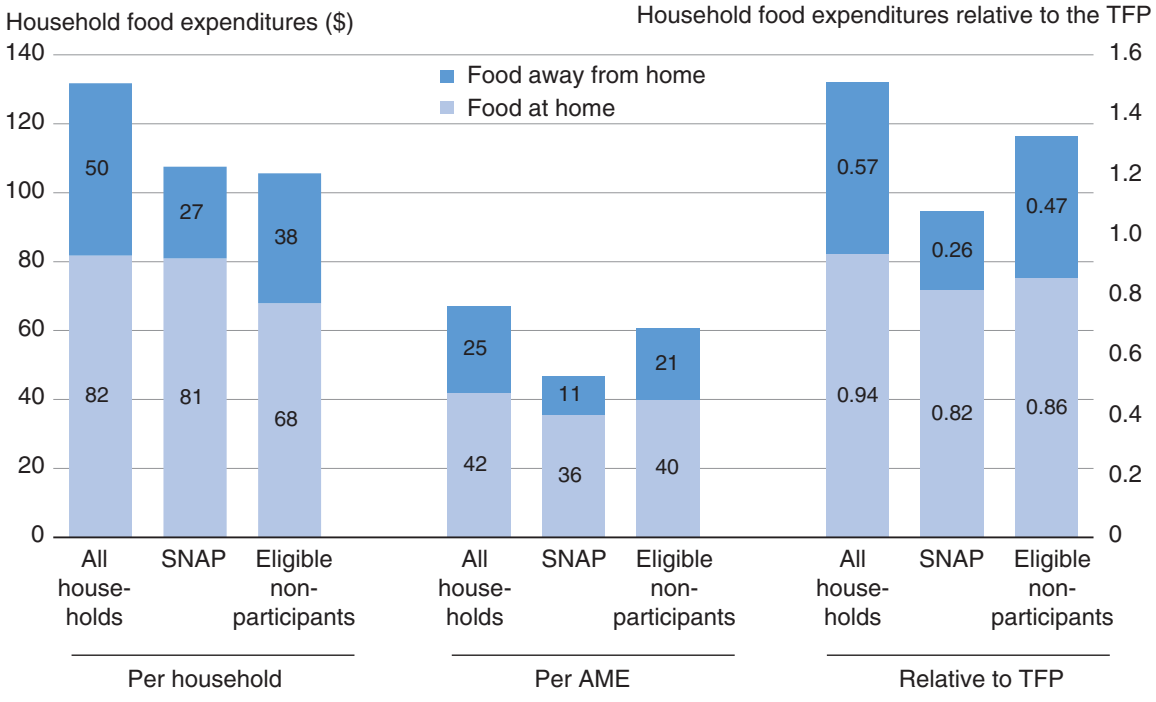
Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

The average weekly food expenditures of SNAP households ($108) and eligible nonparticipant households ($106) were similar in 2012. However, as discussed earlier, SNAP households are larger and contain more children than households in the three categories of nonparticipants (see table 1). Therefore, when comparing the food spending of SNAP households to the three categories of non-SNAP households, we focus primarily on spending per AME and relative to the TFP, which accounts for these systematic household differences. After accounting for household size and composition, we find that the average weekly food expenditures of SNAP households are lower than those of eligible nonparticipant households and substantially lower than those of ineligible households with income above 185 percent of the poverty line. SNAP households spent roughly 19-23 percent less on food per week ($47 per AME), adjusted for household size and composition, than eligible nonparticipants ($61 per AME) (fig. 1). Both groups spent less than the U.S. household average of $67 per AME. SNAP households' weekly average total food spending is 8 percent higher than the TFP cost, while that of eligible nonparticipants is 33 percent higher.

Adjusting for household size and composition, we find SNAP households spend roughly the same on food as low-income households that are not eligible for SNAP. In contrast, the average weekly total food expenditures of higher income ineligible households ($75 per AME) is about 61 percent greater than that of SNAP households ($47 per AME).

We also calculate median weekly food spending to gain more understanding of the distribution of food spending across households. We find that median food spending is lower than average food

Figure 1
Mean weekly food expenditures, all households, SNAP households, and eligible nonparticipants



SNAP=Supplemental Nutrition Assistance Program. TFP=Thrifty Food Plan. AME=Adult-male equivalent.
Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

spending in all U.S. households and within the groups of SNAP households, eligible nonparticipant households, and both groups of ineligible nonparticipant households (appendix table B1). For example, SNAP households have median weekly food spending per AME of $36, compared to average weekly spending per AME of $47. Likewise, median food spending for SNAP households is 88 percent of the TFP cost, compared with average food spending of 108 percent of the TFP cost. This implies that expenditures on food (including both food at home and food away from home) for at least half of SNAP households were less than the cost of the TFP. The finding on median food spending indicates that food spending values are not normally distributed around the average, and, therefore, the estimated average is influenced by some relatively high values. However, we find that the patterns of median spending across the groups of SNAP households, eligible nonparticipant households, and both groups of ineligible nonparticipant households are quite similar to the patterns of mean spending.[18] Therefore, we choose to report average food-spending levels as our primary measure to maintain consistency with most recent studies (Clay et al., 2016; Hoynes et al., 2015; Mabli and Marlsberger, 2013; Todd and Scharadin, 2016).[19]

Spending on food at home and food away from home

The patterns in food-at-home spending across the household categories based on SNAP participation and eligibility differ from the patterns in food-away-from-home spending. The average food-at-home spending of SNAP households does not differ significantly from that of eligible nonparticipant households, when measured either per AME or relative to the TFP. However, eligible nonparticipant households spend almost twice as much on food away from home per AME ($21) than SNAP households ($11).

SNAP households spend substantially less than higher income ineligible households on both food at home and food away from home, but the differences in food-at-home spending are smaller than the differences in food-away-from-home spending. Higher income ineligible households spend roughly 25 percent more on food at home (101 percent of the TFP cost, or $45 per AME) as SNAP households and almost three times as much on food away from home ($30 per AME).

It is perhaps not surprising that there are smaller differences in food-at-home spending than in food-away-from-home spending between SNAP and non-SNAP households. SNAP benefits enable participant households to increase food-at-home spending levels to be closer to those of nonparticipant households, but the benefits cannot be used to purchase food away from home. Consequently, food-at-home expenditures are a larger share of total food expenditures for SNAP households (75 percent, calculated as $80.87 as a percent of $107.63) than for eligible nonparticipant households (64 percent), low-income ineligible households (62 percent), and higher income ineligible households (59 percent).

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[18]In an additional sensitivity analysis, we drop 10 percent of the observations in the sample with the highest total food-spending levels. Again, we find similar patterns of food spending across the sample subgroups (results available from authors).

[19]Clay et al. (2016) find that average weekly food spending of SNAP households in FoodAPS is comparable to estimates from the Consumer Expenditure Survey (CE), a nationally representative survey collected by the Department of Labor's Bureau of Labor Statistics. Mabli and Marlsberger (2013) find that the average weekly food spending of eligible nonparticipant households in the 2010 CE was lower ($88 per household) than that in FoodAPS ($106 per household), which is almost entirely attributable to the lower estimated spending on food away from home in the CE ($21 per household). Estimates of weekly food spending of SNAP households were lower in FoodAPS than in the National Health and Nutrition Examination Survey (NHANES), which is partly attributable to the larger household sizes in the NHANES sample.

SNAP households' food expenditures by household and respondent characteristics

As in the earlier discussion of differences in average food spending across categories of SNAP participation and eligibility, we focus on measures of spending that adjust for household size and composition. We also examine the contribution of SNAP and WIC benefits to household food spending and variations in spending across characteristics and locations of SNAP households.

Differences in food spending by presence of children or elderly, and marital status

SNAP households with children spend a weekly average of $40 per AME (100 percent of the TFP cost), while those without children spend $53 per AME (115 percent of the TFP cost) (table 3a). Thus, the average weekly food spending of SNAP households without children is 30 percent higher per AME and 15 percent higher relative to the TFP compared to that of SNAP households with children. There is a much smaller difference in food spending between SNAP households with and without children relative to the TFP cost adjustment than under the AME cost adjustment, which is at least partially due to the adjustment for economies of scale in household food production in the TFP cost calculation. The average SNAP household without children is smaller (1.6 persons) than the average SNAP household with children (4.2 persons), resulting in lower potential economies of scale and a smaller difference in food spending relative to the TFP. Much of the difference in total food spending between SNAP households with and without children is driven by differences in food-at-home spending, which is almost 40 percent higher per AME ($41 versus $30) and 20 percent higher relative to the TFP cost (89 percent versus 74 percent) for SNAP households without children than for those with children.

It is somewhat surprising that average food expenditures adjusted for household size and composition are lower for SNAP households with children than for SNAP households without children. It is possible that the availability of free school lunches and breakfasts, which are not recorded in household food expenditures, enables SNAP households with children to spend relatively less on food.[20] The average total food spending of SNAP households with children is equal to the TFP cost, but that amount includes spending on food away from home, which averages $11 per AME per week and tends to be more costly and less nutritious than food prepared at home (Guthrie et al., 2002; Mancino et al., 2009; Todd et al., 2010). Given that the TFP cost calculations assume that all food is prepared for at-home consumption, it is unlikely that, at reported food-spending levels, the average SNAP household with children is able to purchase enough food for the nutritionally adequate diet plans that comprise the TFP. However, the consumption of free and reduced-price school lunches and breakfasts could help SNAP households with children achieve a nutritionally adequate diet, at least during the school year.

We conduct additional analysis on SNAP households with teenage children, given recent evidence that households with a teenager are more likely than those without teenagers to experience food insecurity (Anderson et al., 2016; Anderson and Butcher, 2016; Schanzenbach et al., 2016). Findings show that SNAP households with teenage children have lower average total food spending relative to the TFP (88 percent) than SNAP households with children of any age (100 percent) (fig. 2). The TFP

[20]Another possible explanation for the higher spending among SNAP households without children relative to the TFP is that the economies-of-scale multiplier in the TFP may not adequately adjust for the higher per-person costs of food in smaller families (Caswell and Yaktine, 2013; Hoynes et al., 2015).

Table 3a

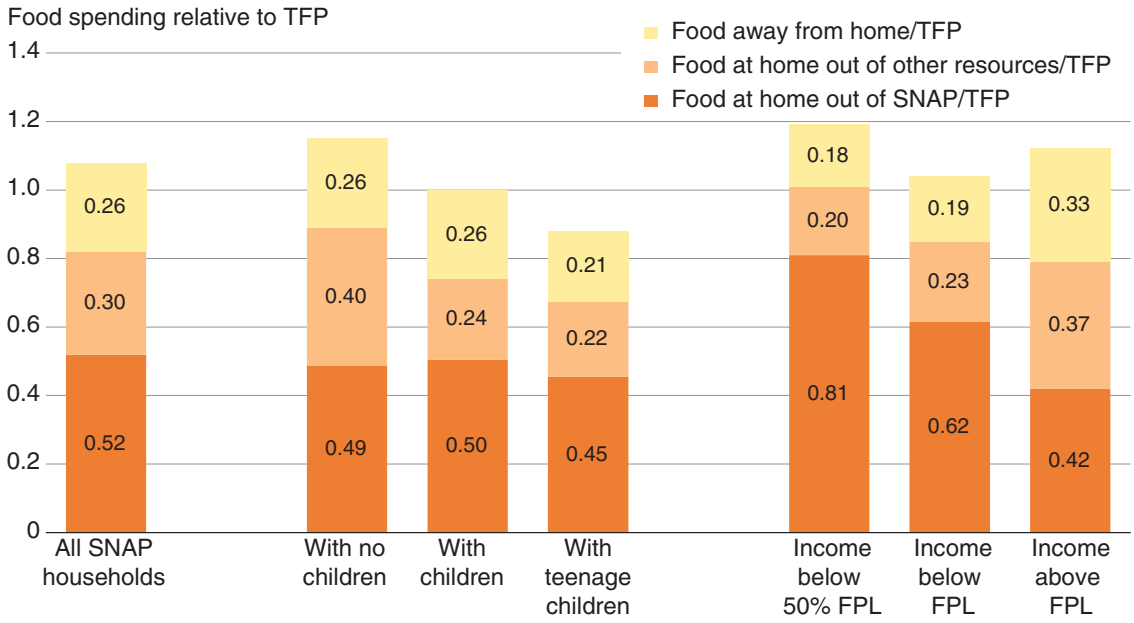
SNAP households' food expenditures, by household characteristics

		With children		With elderly		With married head	
	All SNAP	Yes	No	Yes	No	Yes	No
Mean total food expenditures							
per household ($)	107.63 (4.48)	139.57 (6.92)	77.45* (4.46)	93.80 (7.81)	112.91* (5.16)	141.56 (9.20)	98.07* (4.34)
per AME ($)	46.77 (2.12)	40.44 (2.16)	52.75* (3.26)	50.04 (4.46)	45.52 (2.20)	40.29 (2.14)	48.59* (2.66)
relative to Thrifty Food Plan	1.08 (0.05)	1.00 (0.05)	1.15* (0.07)	1.08 (0.09)	1.08 (0.05)	1.01 (0.06)	1.09 (0.06)
Food-at-home expenditures							
per household ($)	80.87 (4.26)	105.20 (6.84)	57.89* (3.77)	68.66 (4.95)	85.54* (5.04)	107.76 (7.80)	73.30* (4.04)
per AME ($)	35.65 (1.91)	29.84 (1.97)	41.14* (2.74)	38.60 (3.84)	34.52 (1.95)	30.78 (1.87)	37.02* (2.30)
relative to Thrifty Food Plan	0.82 (0.04)	0.74 (0.05)	0.89* (0.06)	0.82 (0.07)	0.82 (0.05)	0.77 (0.05)	0.83 (0.05)
Mean SNAP expenditures ($)	51.18 (3.80)	71.74 (5.67)	31.75* (3.18)	31.85 (3.51)	58.56* (4.70)	63.44 (6.57)	47.72* (3.72)
Mean WIC expenditures ($)	1.32 (0.22)	2.63 (0.46)	0.07* (0.05)	0.54 (0.30)	1.61* (0.31)	2.34 (0.50)	1.03* (0.22)
Food-away-from-home expenditures							
per household ($)	26.76 (1.72)	34.37 (2.29)	19.56* (2.22)	25.14 (4.82)	27.37 (2.03)	33.81 (3.24)	24.77* (2.11)
per AME ($)	11.12 (0.84)	10.60 (1.20)	11.61 (1.23)	11.44 (1.60)	11.00 (0.99)	9.52 (0.82)	11.57 (1.10)
Mean monthly SNAP benefits							
per household ($)	250.66 (8.18)	362.91 (8.85)	143.66* (5.78)	156.71 (14.01)	286.90* (7.26)	305.96 (14.28)	235.97* (7.89)
per person ($)	99.15 (3.13)	95.31 (4.09)	102.81* (4.09)	75.66 (5.60)	108.22* (3.59)	79.62 (4.16)	104.34* (3.42)
Observations	1,581	944	637	366	1215	421	1160

Notes: SNAP=Supplemental Nutrition Assistance Program; AME=adult-male equivalent; WIC=Special Supplemental Nutrition Program for Women, Infants, and Children. Standard errors (which account for oversampling and complex survey design) in parentheses; weighted means reported. FPL = Federal poverty guideline (the criterion used in determining SNAP eligibility).
* = different from comparison group with $p<0.10$.

Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

Figure 2
Contribution of SNAP to household food spending relative to the Thrifty Food Plan, by presence of children and poverty status



Notes: SNAP=Supplemental Nutrition Assistance Program. TFP=Thrifty Food Plan. FPL= Federal poverty line.
Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

accounts for the greater food needs of teenagers relative to younger children, and the lower spending relative to food needs in SNAP households with teenage children may help account for the higher rates of food insecurity in these households.[21]

We find no statistically significant differences in average food spending per AME or relative to the TFP between SNAP households with and without elderly members (table 3a). SNAP households with a married head have lower average food spending per AME ($40) than SNAP households without a married head ($49) (table 3a). Most of this difference is accounted for by the difference in food-at-home spending, which is 20 percent higher per AME for SNAP households without a married head than for SNAP households with a married head.

Differences in food spending by education, employment, and income

We find no statistically significant relationship between the average weekly food expenditures of SNAP households and the education level of the primary respondent in the household, although the estimates of average food spending adjusted for household size and composition increase with education level (table 3b).

The relationship between household employment status and food expenditures varies by type of food spending. Adjusting for household size and composition, we find no statistically significant difference in the average total food spending of SNAP households with no employed adults versus those

[21]It is possible that teens were less likely to report their food spending. Recent research finds that children are more likely than adults over age 55 to refuse to report food events (Hu et al., 2017).

Table 3b
SNAP households' food expenditures, by education, employment, and income

	All SNAP house-holds	Education level of reference person			With employed adults		With income below poverty	
		High school or less	With some college	Bach-elors degree	Yes	No	Yes	No
Mean total food expenditures per household ($)	107.63 (4.48)	101.39 (7.02)	117.78 (7.09)	117.28 (11.44)	119.18 (7.45)	102.78* (5.27)	97.47 (5.42)	119.55* (4.84)
per AME ($)	46.77 (2.12)	44.81 (2.97)	48.64 (2.96)	54.62 (6.76)	43.44 (3.68)	48.17 (2.30)	45.80 (2.36)	47.91 (2.52)
relative to Thrifty Food Plan	1.08 (0.05)	1.03 (0.07)	1.12 (0.06)	1.26 (0.15)	1.03 (0.08)	1.09 (0.05)	1.04 (0.05)	1.12 (0.05)
Food-at-home expenditures per household ($)	80.87 (4.26)	76.43 (5.75)	87.53 (6.88)	89.87 (10.97)	83.89 (5.96)	79.61 (5.00)	78.34 (5.69)	83.85 (3.89)
per AME ($)	35.65 (1.91)	34.67 (2.52)	36.51 (2.57)	39.80 (5.03)	29.01 (2.76)	38.44* (2.21)	37.30 (2.11)	33.71* (2.25)
relative to Thrifty Food Plan	0.82 (0.04)	0.79 (0.06)	0.84 (0.06)	0.92 (0.12)	0.70 (0.06)	0.87* (0.05)	0.85 (0.05)	0.79 (0.05)
Mean SNAP expenditures	51.18 (3.80)	48.99 (5.56)	57.13 (6.97)	45.92 (7.75)	50.05 (5.51)	51.65 (4.51)	56.74 (5.73)	44.65* (3.05)
Mean WIC expenditures	1.32 (0.22)	1.20 (0.21)	1.58 (0.40)	1.20 (0.64)	1.63 (0.45)	1.18 (0.25)	0.83 (0.20)	1.88* (0.35)
Food-away-from-home expenditures per household ($)	26.76 (1.72)	24.96 (2.80)	30.25 (2.95)	27.41 (3.86)	35.29 (3.95)	23.17* (1.60)	19.14 (1.34)	35.70* (3.13)
per AME ($)	11.12 (0.84)	10.14 (1.17)	12.12 (1.27)	14.82 (3.35)	14.43 (2.18)	9.73* (0.58)	8.50 (0.70)	14.20* (1.39)
Mean monthly SNAP benefits per household ($)	250.66 (8.18)	239.13 (13.55)	276.51* (12.64)	242.36 (25.23)	283.56 (11.77)	237.73* (9.68)	267.83 (10.92)	228.79* (11.75)
per person ($)	99.15 (3.13)	97.04 (4.23)	102.48 (4.71)	102.93 (8.76)	92.66 (4.45)	101.71* (4.05)	118.31 (5.12)	74.75* (3.05)
Observations	1,581	965	491	125	485	1096	851	730

Notes: SNAP=Supplemental Nutrition Assistance Program; AME=adult-male equivalent; WIC=Special Supplemental Nutrition Program for Women, Infants, and Children. Standard errors (which account for oversampling and complex survey design) in parentheses; weighted means reported. * = different from comparison group with p<0.10.

Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

with employed adults. However, food-at-home spending per AME and relative to the TFP cost is lower among households with employed adults than among those with no employed adults, while food-away-from-home spending is higher. These differences highlight the greater reliance on food away from home by SNAP participants in households with employed adults, whose work schedules would be expected to allow less time for food preparation.

The poverty status of SNAP households is not associated with a statistically significant difference in average weekly food spending adjusted for household size and composition. The SNAP benefit formula is designed so that benefits decrease as household income increases, and we see evidence of this benefit adjustment in the greater contribution of average SNAP benefits to the average food spending of poor SNAP households (58 percent, calculated as $56.74 as a percent of $97.47), compared with that to nonpoor SNAP households (37 percent).[22] The greater reliance on SNAP benefits enables poor SNAP households to spend a roughly equivalent amount on food as nonpoor SNAP households. Nonpoor SNAP households do spend a greater amount per AME on food away from home ($14 per week) compared to poor SNAP households ($9 per week), reflecting their somewhat greater non-SNAP resources for food.

We further explore the relationship between household income and food expenditures by focusing on the subset of poor SNAP households that are in deep poverty (household income below 50 percent of the Federal poverty guidelines). The average total food spending of SNAP households in deep poverty (119 percent of the TFP) is higher than that of both poor and nonpoor SNAP households (see fig. 2). Most of the overall difference in spending between SNAP households in deep poverty and all poor SNAP households is accounted for by the difference in food-at-home spending out of SNAP, which equals 81 percent of the TFP for SNAP households in deep poverty and 62 percent for all SNAP households in poverty. SNAP benefits play a strong role in the food budgets of SNAP households in deep poverty, accounting for 80 percent of their food-at-home spending ($73.41 as a percent of $91.49; results not shown).

Differences in food spending by urbanicity and region

SNAP households in rural areas spend more on food, adjusted for household size and composition, than those in urban areas (table 3c).[23] The difference is particularly large for food at home, with rural SNAP households spending roughly 30 percent more on average than SNAP households in urban areas. This is particularly notable, given that previous studies found that average food prices are lower in rural than in urban areas (Caswell and Yaktine, 2013; Gregory and Coleman-Jensen, 2013; Leibtag, 2007; Todd et al., 2011). Further analysis (results available from authors) shows that at least part of the urban-rural difference in food spending may be related to urban-rural differences in household income. We do not find statistically significant differences across geographic regions in average weekly food spending adjusted for household size and composition.

Contribution of SNAP and WIC benefits to SNAP households' food spending

The detailed information in FoodAPS on household food expenditures and the sources used to purchase food enables us to document the contribution of SNAP to household food spending. Obviously, SNAP's contribution to food spending will depend strongly on the level of benefits received by a household. Therefore, we first examine how monthly SNAP benefits vary across household characteristics and residential location. We find that SNAP households received an average household benefit of $251 (or $99 per person) in their latest month of SNAP issuance (table 3a). The variation in average monthly household SNAP benefit levels can reflect differences in household size, as well as differences in average incomes. SNAP households with children receive

[22]We define poor households as those with income below 100 percent of the Federal poverty guidelines.

[23]The "rural" definition is based on measures of population size and density at the census tract level and differs from the "nonmetropolitan" definition used in appendix table A1, which is based on labor market areas at the county level.

Table 3c

SNAP households' food expenditures, by geographic characteristics

	All SNAP households	Urbanicity		Region			
		Rural	Urban or suburban	Northeast	Midwest	South	West
Mean total food expenditures per household ($)	107.63 (4.48)	112.39 (10.20)	105.78 (4.27)	107.86 (8.16)	94.23 (5.80)	106.48 (8.23)	136.70* (13.09)
per AME ($)	46.77 (2.12)	51.93 (3.84)	44.77* (2.19)	53.12 (6.16)	45.50 (3.20)	44.87 (3.47)	49.23 (5.48)
relative to Thrifty Food Plan	1.08 (0.05)	1.19 (0.09)	1.03* (0.05)	1.20 (0.11)	1.03 (0.06)	1.04 (0.08)	1.17 (0.12)
Food-at-home expenditures per household ($)	80.87 (4.26)	90.81 (9.71)	77.02 (3.62)	82.20 (6.66)	72.25 (6.45)	76.38 (7.43)	108.51* (12.03)
per AME ($)	35.65 (1.91)	42.62 (4.23)	32.94* (1.61)	41.17 (5.51)	36.13 (3.36)	32.73 (3.10)	38.02 (3.51)
relative to Thrifty Food Plan	0.82 (0.04)	0.98 (0.10)	0.76* (0.03)	0.93 (0.10)	0.81 (0.07)	0.76 (0.07)	0.91 (0.09)
Mean SNAP expenditures ($)	51.18 (3.80)	58.77 (8.11)	48.23 (2.86)	40.90 (5.09)	50.06 (6.08)	48.73 (6.83)	67.88* (10.52)
Mean WIC expenditures ($)	1.32 (0.22)	1.59 (0.43)	1.21 (0.28)	0.80 (0.42)	0.60 (0.31)	1.45 (0.31)	2.77* (1.06)
Food-away-from-home expenditures per household ($)	26.76 (1.72)	21.58 (4.17)	28.77* (1.70)	25.65 (3.10)	21.99 (1.83)	30.10 (3.82)	28.19 (3.18)
per AME ($)	11.12 (0.84)	9.31 (1.02)	11.83 (1.06)	11.95 (1.66)	9.38 (0.82)	12.14 (1.52)	11.21 (2.89)
Mean monthly SNAP benefits per household ($)	250.66 (8.18)	228.04 (17.38)	259.68* (7.78)	238.24 (11.86)	246.73 (12.75)	244.87 (14.92)	284.10* (15.29)
per person ($)	99.15 (3.13)	92.77 (4.48)	101.7 (4.04)	104.44 (2.17)	106.82 (8.01)	93.25 (3.96)	95.32* (3.71)
Observations	1,581	405	1,176	251	305	669	356

Notes: SNAP=Supplemental Nutrition Assistance Program; AME=adult-male equivalent; WIC=Special Supplemental Nutrition Program for Women, Infants, and Children. Standard errors (which account for oversampling and complex survey design) in parentheses; weighted means reported. * = different from comparison group with p<0.10.

Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

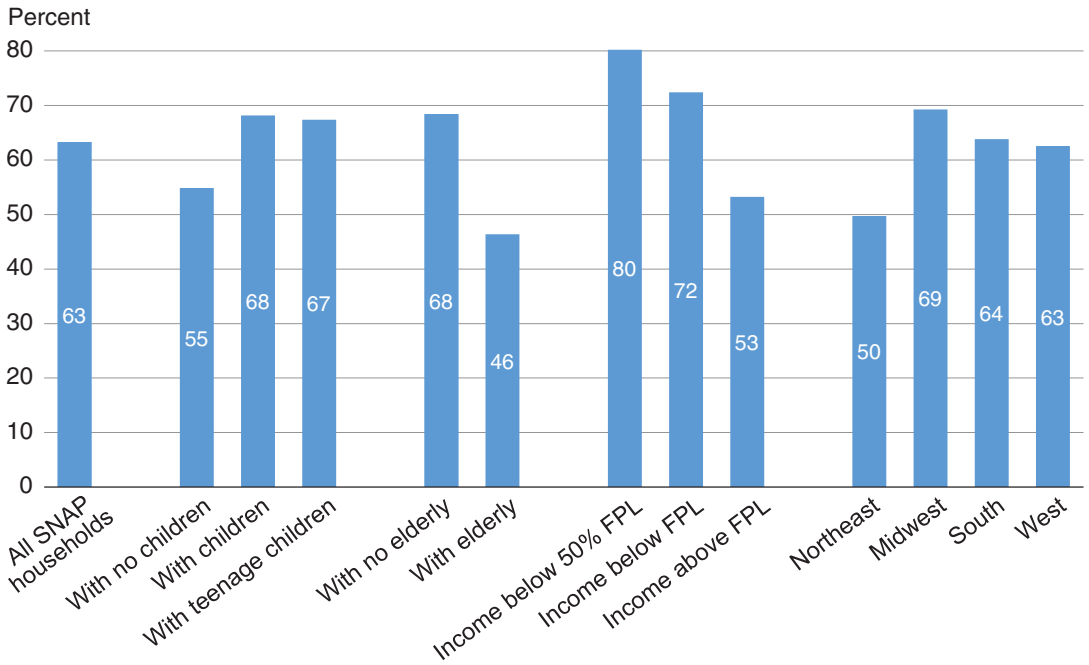
an average monthly benefit of $363, which is much greater than the average benefit among all SNAP households. However, the per-person benefit in SNAP households with children ($95) is slightly below the overall average. Average household SNAP benefits are lower than average in SNAP households with elderly members ($157) and higher than average in SNAP households with a married head ($306). When measured per-person, however, average SNAP benefits are lower than average among SNAP households with a married head ($80), which probably reflects their higher average incomes compared with SNAP households without a married head (table 3a). The relationship between household characteristics and average SNAP benefit levels is consistent with that found in USDA administrative data (Farson Gray and Eslami, 2014). One of the most notable differences in average per-person SNAP benefits is associated with household poverty status. As discussed earlier, SNAP benefits are greater for households with lower income. Poor SNAP households receive an average monthly benefit of $118 per person, while nonpoor SNAP households receive $75 per person (table 3b). Rural SNAP households receive lower average SNAP benefits, both at the household and per-person level, than SNAP households in urban or suburban areas (table 3c).

Spending out of SNAP benefits accounted for 48 percent of total food spending of SNAP households (calculated as $51.18 as a percent of $107.63) (table 3a) and 63 percent of food-at-home spending (fig. 3).[24] This demonstrates that SNAP benefits make a substantial contribution to the food spending of participant households, but that these households also use other resources (such as their own income or other cash assistance benefits) to pay for food. We focus on SNAP's contribution to food-at-home spending because benefits cannot be used to purchase food away from home. The subgroups that show the greatest reliance on SNAP benefits are participant households with children, those with no elderly, and those with income below the poverty line, in which SNAP benefits account for over two-thirds of average weekly food-at-home spending (fig. 3). SNAP households in deep poverty show the greatest reliance on SNAP, with 80 percent of their food-at-home spending covered by program benefits. The subgroups with the greatest reliance on SNAP also receive relatively high monthly SNAP benefits. Spending out of SNAP benefits contributes the greatest percentage to food-at-home spending of participant households in the Midwest (69 percent) and the lowest percentage in the Northeast (50 percent).

Some SNAP participants may also be eligible to receive food assistance from WIC, a Federal food assistance program that provides participants with a package of prescribed types and quantities of specific foods. The WIC food package is intended to provide supplemental amounts of specific nutrients known to be lacking in the diets of target populations. Since WIC is targeted to nutritionally-at-risk low-income pregnant and postpartum women, infants, and children age 1 to 4, many SNAP households are not eligible for WIC benefits. Therefore, it is not surprising that WIC food benefits account for a relatively small portion (1.6 percent, calculated as $1.32 as a percent of $80.87) of the average household food-at-home spending of all SNAP participant households (which includes those who do not participate in WIC). WIC benefits account for the largest portion of food-at-home spending (3 percent) among SNAP households with children, which is not surprising since preschool-age children are one of the program's target populations. Among SNAP households that also report WIC participation (15 percent of all SNAP households), we find that WIC benefits account for almost 9 percent of their food-at-home spending (results not shown). Thus, even though WIC is not intended to be the primary source of food for participants, program benefits provide a sizable supplement to a targeted population of participant households.

[24]We calculate the ratio of average SNAP spending to average food spending for all SNAP households and within each subgroup. An alternative method would be to calculate the ratio of SNAP spending to food spending for each SNAP household and take the mean of the household ratios.

Figure 3
The contribution of SNAP to household food-at-home spending, by household characteristics and region of residence



Notes: SNAP=Supplemental Nutrition Assistance Program. FPL = Federal poverty guideline
Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

Variation in food spending by food-security status among SNAP households and eligible nonparticipants

A household in the United States is considered to be food secure if it has access at all times to enough food for an active healthy life for all household members. The official U.S. food security statistics are based on a measure calculated from responses to a series of survey questions about conditions and behaviors that characterize households when they are having difficulty meeting basic food needs due to a lack of money or other resources (Coleman-Jensen et al., 2016). The food security measure in FoodAPS is based on USDA's 30-day adult food security measure, which differs from the annually reported measure of U.S. food security in two main ways. First, the FoodAPS measure is based on a series of 10 survey questions that reference food security among adults in the household, whereas the standard measure includes an additional 8 questions for households that contain children. Second, the food security questions used in FoodAPS refer to the past 30 days; questions in the standard measure refer to the past year. In this study, discussions of food insecurity refer to difficulties in meeting basic food needs among adult members of a household in the month prior to the survey.

Food insecurity arises from a lack of money or other resources to obtain food, so one would expect to see lower levels of food spending associated with higher levels of food insecurity. We do note, however, that a measure of food spending is not equivalent to food consumption, since a household may not consume all of the food that it purchased in a given timeframe, and it may draw on previously purchased food. Also, households may have other sources of food consumption, such as the

National School Lunch and School Breakfast Programs, charitable organizations, home gardening, or meals from friends. In addition, households in areas with higher food prices may face more difficulties in meeting basic food needs at a given level of food expenditures than those in lower cost areas (Gregory and Coleman-Jensen, 2013).

Among SNAP households, those that are food secure spend 22-23 percent more, on average, on food per AME and relative to the TFP than those who are food insecure (table 4). Most of the difference in total food spending results from the difference in food-at-home spending, with food-secure households spending an average of 90 percent of the TFP cost (or $40 per AME) and food-insecure households spending an average of 71 percent (or $31 per AME). However, we do not find statistically significant differences in average weekly food-away-from-home spending between food-secure and food-insecure SNAP households.

Although the average total food spending of food-insecure SNAP households is close to the TFP cost (96 percent), the fact that food-insecure SNAP households spend only 71 percent of the TFP cost on food at home may help account for their food-insecure status. While it is possible that shifting household resources used for food away from home to more affordable food for home preparation could reduce food insecurity among SNAP households, it is not clear that such a shift would be optimal, given the time constraints that households may be facing.

Interestingly, the average food-at-home spending of SNAP households with very low food security is quite similar to that of all food-insecure SNAP households. Among all food-insecure SNAP households, household food spending averages 96 percent of the TFP cost ($42 per AME), while among the subset of food-insecure households with very low food security, household food spending averages 97 percent of the TFP cost ($42 per AME) (table 4, fig. 4). Additional testing for statistical significance finds that the average food spending (per AME and relative to the TFP) of households with very low food security is not statistically different from the spending of food-insecure households that do not experience very low food security. The similarity in average food-spending levels implies that there may be other factors, beyond average food spending, that contribute to the more severe form of food insecurity among food-insecure households.

The difference in average food-spending levels between food-secure and food-insecure households is larger among eligible nonparticipants than among SNAP households (table 4). Among eligible nonparticipants, food-secure households spend about 30 percent more per AME and relative to the TFP cost, on average, than food-insecure households. As with SNAP households, the difference in total food spending results primarily from the difference in food-at-home spending; the average weekly food-away-from-home spending of food-insecure households does not vary significantly from that of food-secure households. However, the food-away-from-home spending of eligible nonparticipant households with very low food security is significantly different from that of food-secure households. Eligible nonparticipant households with very low food security spend about 60 percent of the amount that food-secure households spend on food away from home ($13 per AME versus $21 per AME).

Although eligible nonparticipants are less likely than SNAP households to be food insecure, they do experience higher rates of food insecurity than the general population. Almost 1 in 4 eligible nonparticipant households experienced food insecurity, and 1 in 10 experienced very low food security (see table 1). Eligible nonparticipant households with food insecurity have significantly lower food spending than those that are food secure, which raises the question of why they are not accessing SNAP benefits.

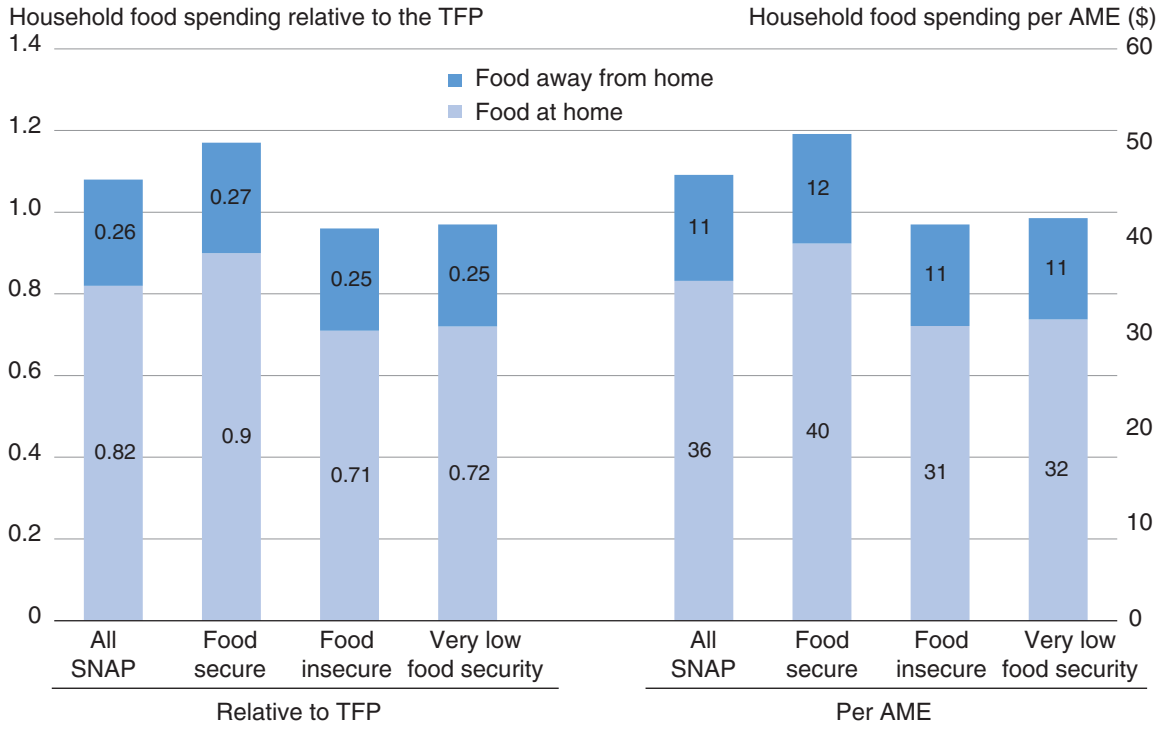
Table 4
SNAP households' food expenditures, by food insecurity status

	SNAP participants				Eligible nonparticipants			
			Food insecure				Food insecure	
	Total	Food secure	All food insecure	Very low food security	Total	Food secure	All food insecure	Very low food security
Mean total food expenditures per household ($)	107.63 (4.48)	113.79 (3.28)	100.16 (8.11)	91.83* (8.08)	105.67 (6.53)	113.69 (7.59)	78.12* (6.71)	63.55* (9.25)
per AME ($)	46.77 (2.12)	51.07 (2.59)	41.56* (3.54)	42.23 (4.17)	60.87 (3.67)	64.26 (3.71)	49.22* (6.59)	46.67* (10.88)
relative to Thrifty Food Plan	1.08 (0.05)	1.17 (0.05)	0.96* (0.08)	0.97* (0.09)	1.33 (0.08)	1.40 (0.08)	1.06* (0.13)	0.97* (0.21)
Food-at-home expenditures per household ($)	80.87 (4.26)	86.79 (3.86)	73.71* (6.97)	65.58* (5.18)	67.93 (4.27)	73.94 (4.71)	47.28* (4.90)	42.52* (7.66)
per AME ($)	35.65 (1.91)	39.56 (2.15)	30.91* (3.03)	31.61* (3.56)	39.97 (2.85)	42.78 (2.71)	30.32* (4.78)	33.61 (8.80)
relative to Thrifty Food Plan	0.82 (0.04)	0.90 (0.05)	0.71* (0.07)	0.72* (0.07)	0.86 (0.06)	0.92 (0.06)	0.65* (0.10)	0.69 (0.17)
Mean SNAP expenditures ($)	51.18 (3.80)	54.16 (3.74)	47.57 (5.61)	46.75 (5.03)	0.91 (0.35)	0.32 (0.16)	2.92 (1.54)	5.26 (3.73)
Food-away-from-home expenditures								
per household ($)	26.76 (1.72)	27.01 (1.73)	26.45 (3.37)	26.25 (5.66)	37.74 (3.02)	39.75 (3.50)	30.84 (4.68)	21.02* (3.14)
per AME ($)	11.12 (0.84)	11.51 (1.05)	10.65 (1.43)	10.62 (1.92)	20.90 (1.68)	21.48 (1.72)	18.90 (4.34)	13.06* (3.43)
Observations	1,581	870	711	299	1,117	773	344	155

Notes: SNAP=Supplemental Nutrition Assistance Program; AME=adult-male equivalent.
Standard errors (which account for oversampling and complex survey design) in parentheses; weighted means reported.
* = different from comparison group (food-secure households) with p<0.10.

Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

Figure 4
Household food spending of SNAP households, by food-security status



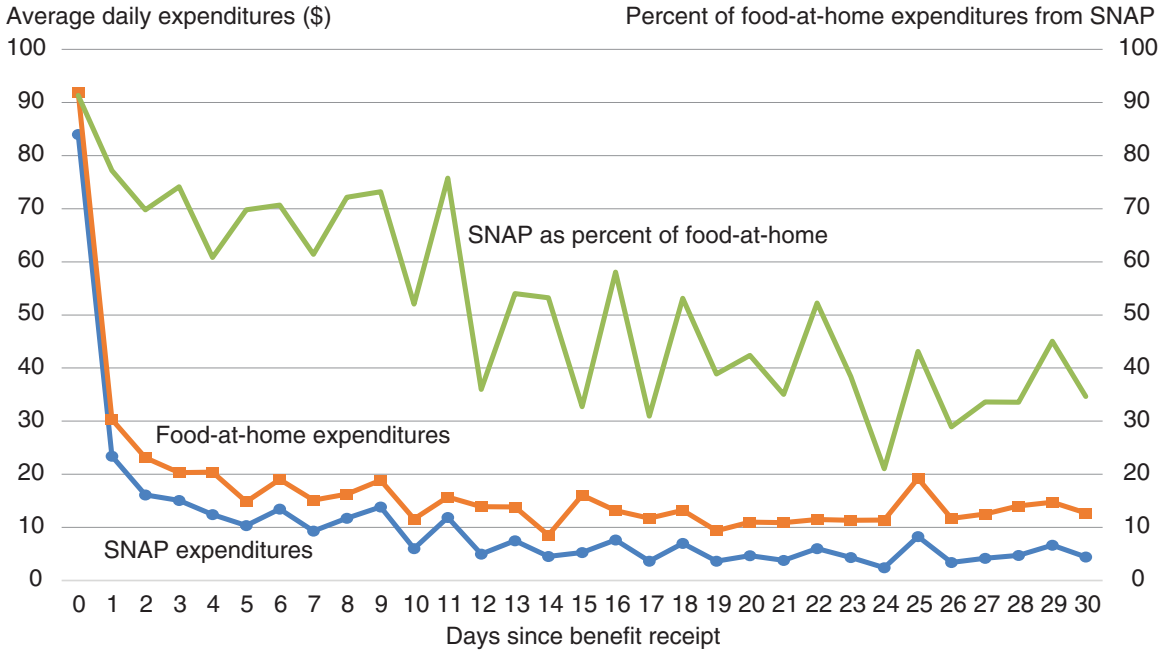
SNAP=Supplemental Nutrition Assistance Program. TFP=Thrifty Food Plan. AME=Adult male equivalent.
Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

Food spending across the SNAP benefit cycle

A growing body of research finds that SNAP households have cyclical purchasing patterns, with a large share of food spending occurring soon after benefit receipt and then declining steadily throughout the rest of the month (Castner and Henke, 2011; Hastings and Washington 2010; Smith et al., 2016; Todd, 2014; Wilde and Ranney, 2000). Consistent with prior research, we find that average daily food expenditures of SNAP households are substantially higher on the day of SNAP benefit receipt than during the rest of the month. Expenditures then decline fairly rapidly over the 2 days after receipt and level off during the remainder of the SNAP benefit month (fig. 5).[25] SNAP households spend a daily average of $70 on the day of and the day following benefit receipt—referred to as "days 0-1"—compared with a daily average of $23 in the next week (days 2-8) (table 5). Daily food spending during the rest of the SNAP benefit month falls slightly, with a daily average of $21 in days 9-15 and of $20 in days 16 and beyond. However, it is important to note that SNAP households may be able to smooth their food consumption over the month by making a large shopping trip right after their benefit receipt and slowly drawing down their food stores over the course of the month. However, other studies find declines in nutritional intake over the SNAP benefit cycle, although not as large as declines in food spending (Shapiro, 2005; Wilde and Ranney, 2000).

[25]Due to a lack of information on the timing of SNAP receipt, we dropped 54 observations from the analysis of food expenditures across the SNAP benefit cycles, leaving a sample of 1,527 SNAP households.

Figure 5
Food-at-home and SNAP expenditures over the SNAP benefit cycle



SNAP=Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

The differences in total food spending across the SNAP benefit month are driven by changes in food-at-home expenditures, which also show a substantial decline between days 0-1 (with a daily average of $66) and the week following (days 2-8, with a daily average of $18). Household spending on food away from home does not vary significantly over the course of the SNAP benefit month, with a daily average ranging from $4 to $6.

SNAP benefits account for most (89 percent) daily average expenditures on food-at-home on the day of and the day following benefit receipt (table 5). In the days following, the share of food-at-home spending attributed to SNAP declines, though with day-to-day variation (fig. 5). By the second half of the month (days 16 and beyond), spending out of SNAP benefits accounts for 40 percent of average daily food-at-home spending (table 5).

We do not find evidence that the number of events where the household acquires free food or beverages (such as through household production; free school meals; or meals provided by family, friends, or charitable organizations such as food pantries) varies significantly over the SNAP benefit month. SNAP households average less than one free food acquisition event per day, and there is no statistically significant variation in free events over the course of the SNAP benefit month. Given the sharp declines in food spending over the course of the SNAP benefit month, it is surprising that the daily average of free food acquisitions does not increase. In particular, prior studies find that a substantial percentage of SNAP households rely on food pantries to help them meet their food needs (Mosley and Tiehen, 2004; Weinfield et al., 2014). Thus, one might expect to see a greater reliance on food pantries over the SNAP benefit month. It is possible that the monetary or caloric value of free food acquisition events increases over the month.

Table 5

SNAP households' average daily food expenditures and free events over SNAP benefit issuance cycle

	Average daily expenditures (all households)	Days since SNAP issuance			
		Day 0-1	Day 2-8	Day 9-15	Day 16+
Total food expenditures per household ($)	25.61 (1.15)	69.94 (7.65)	22.84* (1.31)	21.45* (1.89)	19.77* (0.95)
Food-at-home expenditures ($)	20.53 (1.12)	66.19 (7.75)	18.04* (1.27)	16.27* (1.88)	14.29* (0.82)
percent of total food expenditures	80.2	94.6	79.0	75.9	72.3
Food-away-from-home expenditures ($)	5.26 (0.37)	3.99 (0.57)	4.98 (0.41)	5.35 (0.96)	5.68 (0.49)
percent of total food expenditures	20.5	5.7	21.8	24.9	28.7
SNAP expenditures ($)	13.42 (1.05)	58.65 (7.77)	12.79* (1.11)	9.45* (1.79)	5.65 (0.65)
percent of total food-at-home expenditures	65.4	88.6	70.9	58.1	39.5
Number of free events	0.72 (0.03)	0.67 (0.12)	0.79 (0.05)	0.70 (0.04)	0.77 (0.04)
Household observations	1,527	347	649	634	894

Notes: SNAP=Supplemental Nutrition Assistance Program. Standard errors (which account for oversampling and complex survey design) in parentheses; weighted means reported. The sum of household observations across the categories is greater than the overall sample because some households are represented in more than one category.

* = different from comparison group (SNAP participants surveyed in Day 0-1) with $p<0.10$.

Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

Conclusions

This study provides a comprehensive overview of the food expenditure patterns of SNAP households between April 2012 and January 2013. It uses a unique dataset that provides more accurate information on SNAP receipt and more detailed information on food spending than previously available. After adjusting for household size and composition, we find that SNAP households spend less on food per month than other households, even households whose income and assets are low enough to make them eligible for SNAP. This finding is consistent with recent research that finds SNAP households are more likely than all SNAP-eligible households to spend less on food per year than the cost of the TFP (Hoynes et al., 2015).[26] Food-at-home spending accounts for almost three-fourths of the total food expenditures of SNAP households, a greater share than that of eligible nonparticipant households or of all U.S. households. We find considerable variation across SNAP households in food spending per AME and relative to the TFP.

The contribution of SNAP benefits to household food-at-home spending is substantial, accounting for almost half of total food expenditure and over 60 percent of the food-at-home expenditures of the average SNAP household. SNAP benefits play a particularly strong role in the food budgets of households with children and those in poverty, especially those in deep poverty. Among SNAP participants who also participate in WIC, the benefits from that program contribute an average of about 9 percent to their food-at-home expenditures. This study does not account for the contribution of free- and reduced-price school meals because their monetary values are not recorded in household food expenditures. Future research is warranted on the contribution of USDA's school meals programs to the food budgets and diets of participating households. FoodAPS data, which provide information on all household food acquisitions and their nutrient information, would be uniquely suited for this analysis.

Among both SNAP households and eligible nonparticipant households, those that are food secure spend more on food than those that are food insecure. Given the lower food spending among food-insecure eligible nonparticipants, further research on the reasons for this group's lack of participation in SNAP would help inform policy design and program administration. Surprisingly, we find no difference between the average food spending of food-insecure households (among both SNAP participants and eligible nonparticipants) with very low food security and those that do not report this condition. This suggests that factors outside of the food budget may help protect food-insecure households from falling into very low food security.

Lastly, the study finds clear evidence of a cyclical pattern in the food spending of SNAP households, with food spending declining sharply after the first few days of the month after benefit receipt. The same cyclical pattern is seen in food-at-home spending and in the contribution of SNAP benefits to food spending, though food-away-from-home spending does not vary over the SNAP benefit month. Despite the decline in food spending, the incidence of events in which SNAP households acquire free food and beverages does not increase over the month after benefit receipt; however, it is possible that the monetary or caloric value of the free food could increase over the month. Future research is warranted on this issue. For example, FoodAPS can aid in examining the use of food pantries (Gundersen et al., 2016) and changes in such use over the SNAP benefit month.

[26]Estimates of the food spending of SNAP households and eligible nonparticipant households from other recent studies (Mabli and Marlsberger, 2013; Todd and Scharadin, 2016) are not directly comparable to this study's findings because they do not adjust for household size and composition.

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Appendix table A1

Comparison of SNAP household and recipient characteristics in FoodAPS and SNAP Quality Control data

	SNAP Quality Control	FoodAPS
Recipient household characteristics		
Household size		
Average	2.1	2.9
Number of household members		
1	50.3	31.6
2	19.3	15.9
3	14.1	17.6
4	9.1	18.4
5 or more	7.4	16.5
Monthly income as a percent of poverty line		
0-50	41.8	17.8
51-100	40.7	36.2
101-130	12.3	15.5
131+	5.2	30.5
Recipient characteristics		
Age		
Child (less than age 18)	44.5	36.2
Nonelderly adult	46.4	52.5
Elderly (age 60 or older)	9.0	11.3
Percent female	56.4	53.8
Race/ethnicity		
Non-Hispanic White	35.8	38.3
Non-Hispanic Black	23.8	26.9
Hispanic	14.1	29.0
Other race/ethnicity	6.4	5.9
Unknown or no household head	19.9	
Location		
Metropolitan or micropolitan	91.1	88.4
Nonmetropolitan	7.3	11.6

Notes: SNAP=Supplemental Nutrition Assistance Program. The SNAP Quality Control (QC) estimates are derived from a sample of households selected for review as part of USDA's system to monitor the accuracy of determinations of eligibility and benefits by State agencies. The QC sample records are weighted to match SNAP caseload totals. FoodAPS estimates are weighted.

Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.

Appendix table B1

Median expenditures on acquired food, by SNAP participation and eligibility

	Full sample	SNAP participants	Nonparticipants		
			SNAP-eligible	Not eligible for SNAP	
				Income <= 185% FPL	Income > 185% FPL
Median total food expenditures per household ($)	107.51	82.93	78.05	70.12*	126.48*
		(4.67)	(6.80)	(7.12)	(6.26)
per AME ($)	53.37	35.97	47.17*	37.31	62.19*
		(1.83)	(3.03)	(2.69)	(2.76)
relative to Thrifty Food Plan	1.26	0.88	1.12*	0.87	1.45*
		(0.04)	(0.07)	(0.06)	(0.06)
Food-at-home expenditures per household ($)	62.52	56.49	48.15	46.00*	72.19*
		(4.36)	(5.43)	(6.08)	(5.39)
per AME ($)	32.12	23.85	28.35*	20.04	35.92*
		(1.42)	(2.23)	(3.52)	(1.98)
relative to Thrifty Food Plan	0.76	0.57	0.65	0.50	0.83*
		(0.04)	(0.05)	(0.06)	(0.05)
Food-away-from-home expenditures					
per household ($)	29.96	12.58	18.87*	18.02	42.26*
		(1.07)	(1.78)	(3.53)	(2.22)
per AME ($)	15.67	4.9	10.54*	9.68*	20.84*
		(0.51)	(1.17)	(1.35)	(1.02)
Observations	4,826	1,581	1,117	336	1,792

Notes: SNAP=Supplemental Nutrition Assistance Program. AME=adult-male equivalent. FPL = Federal poverty guideline (the criterion used in determining SNAP eligibility). Weighted medians reported. * = different from comparison group (SNAP participants) with p<0.10. Statistical significance of differences in medians estimated by robust weighted quantile regression, with SNAP participants as omitted category.

Source: USDA, Economic Research Service estimates using data from the National Household Food Acquisition and Purchase Survey (FoodAPS) collected April 2012-January 2013.