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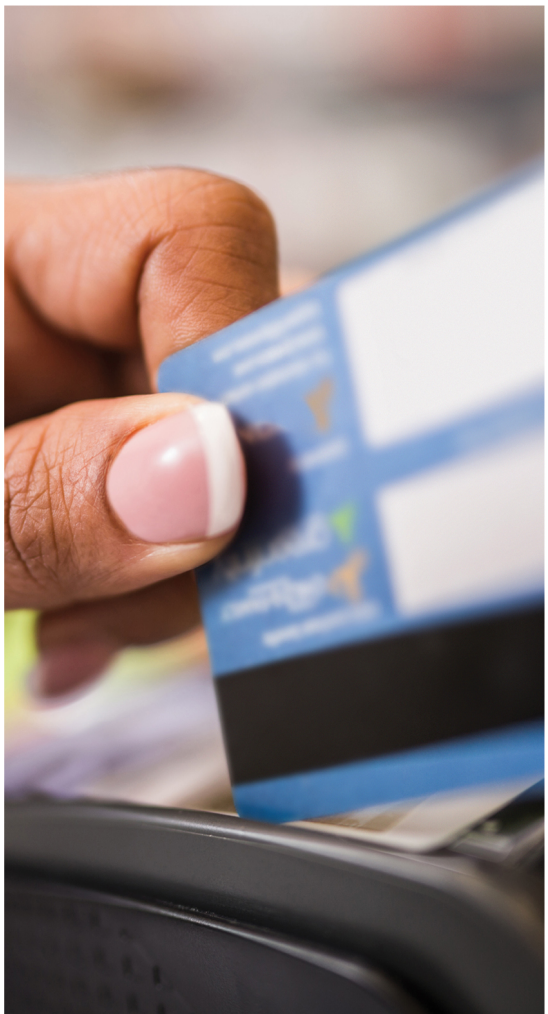
Benefit Redemption Patterns in the Supplemental Nutrition Assistance Program in Fiscal Year 2017

Final Report



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Benefit Redemption Patterns in the Supplemental Nutrition Assistance Program in Fiscal Year 2017

Final Report

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Contents

Executive Summary i
Chapter 1. Introduction 1
A. Background 2
B. Changes to the SNAP Environment 2
C. Datafiles and Overview of Methodology 3
D. Organization of the Report 11
Chapter 2. Patterns of Transactions and Store Use 12
A. Average Transactions and Dollars 12
B. Transactions by Store Type 20
Chapter 3. Benefit Exhaustion 36
A. Benefit Redemption by Day of the Month 37
B. Unspent Issuance and Carryover 50
Chapter 4. Inactivity 56
A. Prevalence of Transaction Inactivity During FY 2017 56
B. Differences Across Subgroups 57
C. Differences Across States 61
Chapter 5. Change Across Years 62
A. Household Redemption 63
B. Benefit Exhaustion and Carryover 70
Chapter 6. Atypical Redemption Patterns 77
A. Ending Balances Greater Than $200 78
B. Out-of-State Transactions 81
C. Inactivity 83
D. Conclusions 85
References 86

Tables

Table 1.1. FNS-Authorized Retailers by Store Type, 2009 and 2017 3
Table 1.2. Store Classifications 4
Table 1.3. Benefit Issuance Schedules 5
Table 1.4. Definitions of Dependent Variables 10
Table 2.1. Average Monthly Redemption Amount and Distribution of Households by Redemption Amount 14

Table 2.2. Number of Transactions and Dollar Amounts By Household Size 14
Table 2.3. Average Number of Transactions and Dollar Amounts by Household Composition 15
Table 2.4. Average Number of Transactions and Dollar Amounts by Race and Ethnicity of Household Head 16
Table 2.5. Average Number of Transactions and Dollar Amounts by Employment Status, TANF Receipt, Certification Period, and Benefit Size 17
Table 2.6. Average Number of Transactions and Dollar Amount by Geographic Location 18
Table 2.7. Benefit Redemption Exclusively at Store Types 22
Table 2.8. Households With No Benefit Redemption at Supermarkets/Super Stores 23
Table 2.9. Number of Stores Utilized by Household Size 24
Table 2.10. Number of Stores Utilized by Household Composition 24
Table 2.11. Percentage of Transactions at Store Type by Household Composition 25
Table 2.12. Number of Stores Utilized by Race/Ethnicity of Household Head 26
Table 2.13. Store Type by Race/Ethnicity of the Household Head 27
Table 2.14. Number of Stores by Size of Benefit 28
Table 2.15. Number of Stores Utilized by Presence of Earnings, Receipt of TANF, and Certification Period 29
Table 2.16. Regional Differences Among Types of Stores Where Participants Spent Their Benefits 30
Table 2.17. Number of Stores Utilized by Metropolitan Status and Persistence of Poverty 31
Table 2.18. Differences by Geographic Location Among Types of Stores Where Participants Spent Their Benefits 31
Table 3.1. Cumulative Proportion of Benefits Redeemed by Day of the Month 37
Table 3.2. Percentage of Benefits Redeemed by Total Monthly Issuance 39
Table 3.3. Benefits Redeemed by Days 7 and 14 40
Table 3.4. Households With and Without Children Reaching Balance Less Than $1 by Days in the Month 40
Table 3.5. Benefits Redeemed by Day of the Month by Household Type 41
Table 3.6. Households Redeeming Benefits by Days 7 and 14 by Household Type 42
Table 3.7. Benefits Redeemed by Day of the Month by County Poverty Status 43
Table 3.8. Households Redeeming Benefits by Days 7 and 14 by County Poverty Status 43
Table 3.9. Benefits Redeemed by Day of the Month by Presence of Earnings 44
Table 3.10. Households Redeeming Benefits by Days 7 and 14 by Presence of Earnings 44
Table 3.11. Benefits Redeemed by Day of the Month by Presence of TANF and SNAP Benefit Level 45
Table 3.12. Households Redeeming Benefits by Days 7 and 14 by Presence of TANF 46
Table 3.13. Households Redeeming Benefits by Days 7 and 14 by Size of Benefit 47
Table 3.14. Households Redeeming Benefits by Days 7 and 14 by Region and Metropolitan Status 48

Table 3.15. Percentage of Benefits Redeemed by States With Highest and Lowest Density of Authorized Retailers 50
Table 3.16. Value of Unspent Issuance and Account Balance at End of Month 51
Table 3.17. Unspent Issuance and End-of-Month Balance by Household Type 53
Table 3.18. Average Unspent Issuance and End-of-Month Balance by Density of Stores per Square Mile 55
Table 4.1. Prevalence of Inactivity During FY 2017 57
Table 4.2. Prevalence of Inactivity by Presence of Income Types, Benefit Size, and Certification Period 58
Table 4.3. Prevalence of Inactivity by Household Size and Composition 59
Table 4.4. Prevalence of Inactivity by Race/Ethnicity and Household Location 60
Table 5.1. Comparison of TFP and Maximum SNAP Benefit Across FY 2003, FY 2009, and FY 2017, Family Size of Four 62
Table 5.2. Average Number of Transactions and Amounts: 2003, 2009, and 2017 64
Table 5.3. Average Number of Transactions by Subgroup: 2003, 2009, and 2017 65
Table 5.4. Average Transaction Amount by Subgroup: 2003, 2009, and 2017 66
Table 5.5. Average Monthly Redemption by Subgroup: 2003, 2009, and 2017 67
Table 5.6. Redemption at Single Store Type: 2003, 2009, and 2017 68
Table 5.7. Average Monthly Number of Stores by Subgroup: 2003, 2009, and 2017 68
Table 5.8. Redemption at Single Store Type by Subgroup: 2003, 2009, and 2017 69
Table 5.9. Distribution of Transactions and Benefits Redeemed by Store Type: 2009 and 2017 70
Table 5.10. Benefit Exhaustion by Day of the Month: 2003, 2009, and 2017 71
Table 5.11. Benefit Exhaustion by Day of the Month and Presence of Children: 2003, 2009, and 2017 71
Table 5.12. Benefit Exhaustion by Day of the Month and Household Type: 2003, 2009, and 2017 72
Table 5.13. Benefit Exhaustion by Day of the Month and Presence of Earnings: 2003, 2009, and 2017 72
Table 5.14. Benefit Exhaustion by Day of the Month and Poverty Persistence: 2003, 2009, and 2017 73
Table 5.15. Average Unspent Issuance and End-of-Month Balance by Average Monthly Benefit: 2003, 2009, and 2017 74
Table 5.16. Average Unspent Issuance by Subgroup: 2003, 2009, and 2017 75
Table 5.17. Average End-of-Month Balance by Subgroup: 2003, 2009, and 2017 76
Table 6.1. Percentage of Households With End-of-Month Balance Over $200 in February and March 2017 78
Table 6.2. Average Marginal Effect of Atypical Activity 80

Table 6.3. Nonborder Out-of-State Transactions 82
Table 6.4. Percentage of Inactive Households 83

Figures

Figure 1.2. Four Analysis Files and Their Relationship With Tabulations 7
Figure 2.1. Distribution of Households by Number of Transactions per Month 13
Figure 2.2. Distribution of Households by Average Dollar Amount of Transactions 13
Figure 2.3. Average Monthly Number of Transactions per $100 in Benefits Redeemed 19
Figure 2.4. Average Monthly Transaction Amount 19
Figure 2.5. Distribution of Households by Average Monthly Number of Stores Frequented 20
Figure 2.6. Percentage of Transactions and Benefits Redeemed by Store Type 21
Figure 2.7. Average Transaction Amounts by Store Type 21
Figure 2.8. Benefits Redeemed at Supermarkets/Super Stores by Total Monthly Redemption 22
Figure 2.9. Percentage of Transactions at Supermarkets/Super Stores 32
Figure 2.10. Percentage of Transactions at Convenience Stores 33
Figure 2.11. Average Number of Stores per Household per Month 34
Figure 2.12. Percentage of Households Making Out-of-State Transactions 35
Figure 3.1. Percentage of Benefits Redeemed by Days 7 and 14 38
Figure 3.2. Percentage of Benefits Redeemed by Day 7 49
Figure 3.3. Percentage of Households by Amount of Unspent Issuance and Carryover Balance 52
Figure 3.4. Average Monthly Ending Balance 54
Figure 4.1. Percentage of Households Ever Inactive by Benefit Issuance Amount 57
Figure 4.2. Percentage of Households Ever Inactive in FY 2017 61
Figure 5.1. Percentage of Households by Average Monthly Number of Transactions: 2003, 2009, and 2017 64
Figure 5.2. Distribution of Transactions by Dollar Amount: 2003, 2009, and 2017 64
Figure 5.3. Number of Stores Accessed by Households per Month: 2003, 2009, 2017 67
Figure 6.1. Percentage of Households With End-of-Month Balance Over $200 That Had a Monthly Benefit Issuance Under $200 79
Figure 6.2. Households Making Nonborder Out-of-State Transactions in March and 1 Other Month in FY 2017 82
Figure 6.3. Percentage of Inactive Households in March and 1 Other Month in FY 2017 That Had a Benefit Issuance Greater Than $200 84

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Executive Summary

The Supplemental Nutrition Assistance Program (SNAP) is the Nation's largest nutrition assistance program, disbursing nearly $54 billion in benefits in fiscal year (FY) 2019 to an average monthly caseload of more than 17 million households (USDA FNS [U.S. Department of Agriculture, Food and Nutrition Service], 2019). Nearly all households receive benefits through an electronic benefit transfer (EBT), facilitating examination of the patterns of SNAP benefit redemption, particularly related to the timing and amount of transactions and the rate at which households exhaust their benefits. This study focuses on redemption patterns in fiscal year (FY) 2017 and also makes comparisons with findings from two similar studies conducted for FY 2003 (Cole & Lee, 2005) and FY 2009 (Castner & Henke, 2011).

This study examines for the first time spending behaviors identified as atypical; namely, an ending balance greater than $200, months in which a benefit is received but the household does not make a transaction, and out-of-State transactions that occur beyond the State's border counties. A descriptive analysis includes a regression-based analysis to identify relationships between atypical patterns and household characteristics.

A. Objectives

This study had two overarching objectives:

- Statistical description of benefit redemption patterns across all SNAP households and statistical definition and identification of atypical SNAP account activity
- Statistical description of benefit redemption patterns by household demographic and geographic characteristics and description of the demographic and geographic characteristics of typical and atypical SNAP account holders

B. Data and Methodology

The analysis relied primarily on three sets of data for fiscal year 2017, the latest year of data available at the start of the study:

1. The Anti-Fraud Locator using Electronic Benefits Transfer (EBT) Retailer Transactions (ALERT)

ALERT data have a record of each EBT transaction for each participating household. Each record contains the SNAP household State of residence, EBT account number, and EBT card number; store identifier and State; date and time of transaction; transaction type and amount; and household EBT account balance.

2. Store Tracking and Redemption System (STARS)

The STARS extract provided to the study team contains information about each retailer authorized to redeem SNAP benefits during the period July 2016 through December 2017. Each record in the extract contains a store identification number, location, and store type. Store types are further categorized for the purposes of this study (table 1.2 in the main report).

3. SNAP Quality Control (QC) Data

The SNAP QC database contains detailed demographic, economic, and SNAP eligibility information for a nationally representative sample of 45,530 SNAP households. The raw datafile is generated from monthly reviews of SNAP cases conducted by State SNAP agencies as part of their QC reviews.

The study team used store identification numbers available in ALERT to link purchase transactions with store data. The team used household identifiers in ALERT and the SNAP QC nonpublic raw datafile to link ALERT transactions with household characteristics for households in the SNAP QC sample. The study team also gathered information from the States and relied on other sources to assist in the analysis.

C. Identifying Atypical Account Activity

In this first examination of atypical redemption patterns, this study addressed three research questions specifically regarding atypical account activity:

1. What statistically defines atypical redemption activity?
2. What is the prevalence of atypical redemption activity?
3. What are the demographic and geographic characteristics of the average atypical account holder, and are there statistically significant differences in characteristics of typical and atypical account holders?

To identify atypical activity, the study team conducted a preliminary assessment of a variety of measures of redemption based on outliers of key measures. The report focuses on three measures of atypical activity:

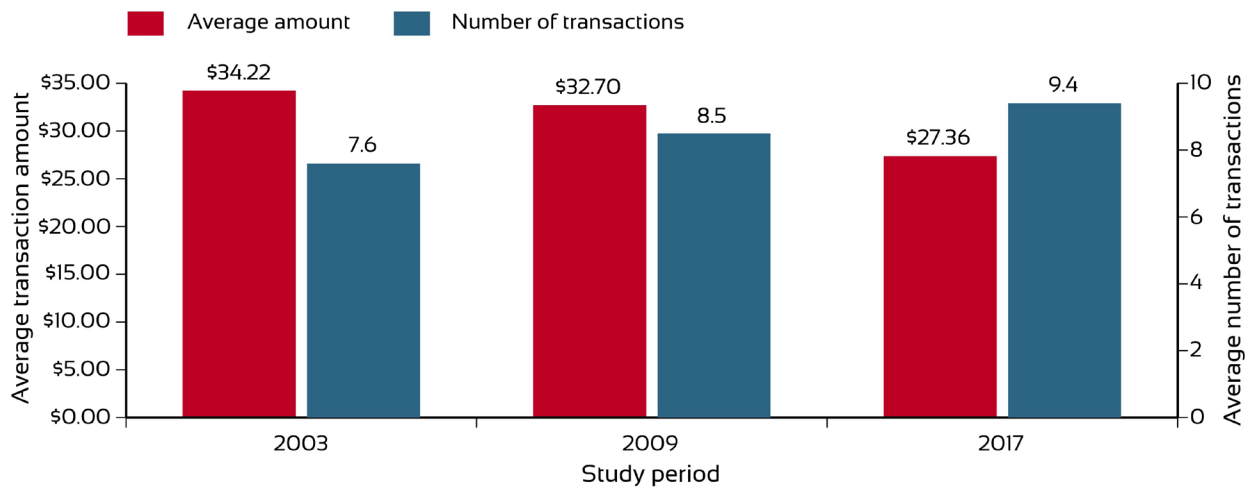
- ***End-of-month carryover of $200 or more:*** *households that have accumulated over $200 in unused benefits that are carried over from 1 month to the next (or an equivalent percentage of the average issuance in Alaska, Hawaii, Guam, and the Virgin Islands)*
- ***Inactivity during a month of benefit issuance:*** *months in which a household is identified as having received a benefit issuance but did not make any transactions using the month's benefit*
- ***Nonborder out-of-State transactions:*** *transactions made outside the household's State of residence but not in a county that shares a border with the household's home State*

D. Key Findings

1. Patterns of Transactions and Store Use

The ALERT data show that, on average, 20.6 million households per month in FY 2017 redeemed their SNAP benefit to purchase food. Households made several transactions with their benefits, averaging 9.4 purchase transactions per month (figure ES.1, right axis) and $27.36 per transaction (figure ES.1, left axis). This was an increase in the number of transactions over the prior study periods, from 7.6 transactions per month in 2003 and 8.5 transactions per month in 2009, and a decrease in the dollar amounts (converted to 2017 dollars) from $34.22 in 2003 and $32.70 in 2009.

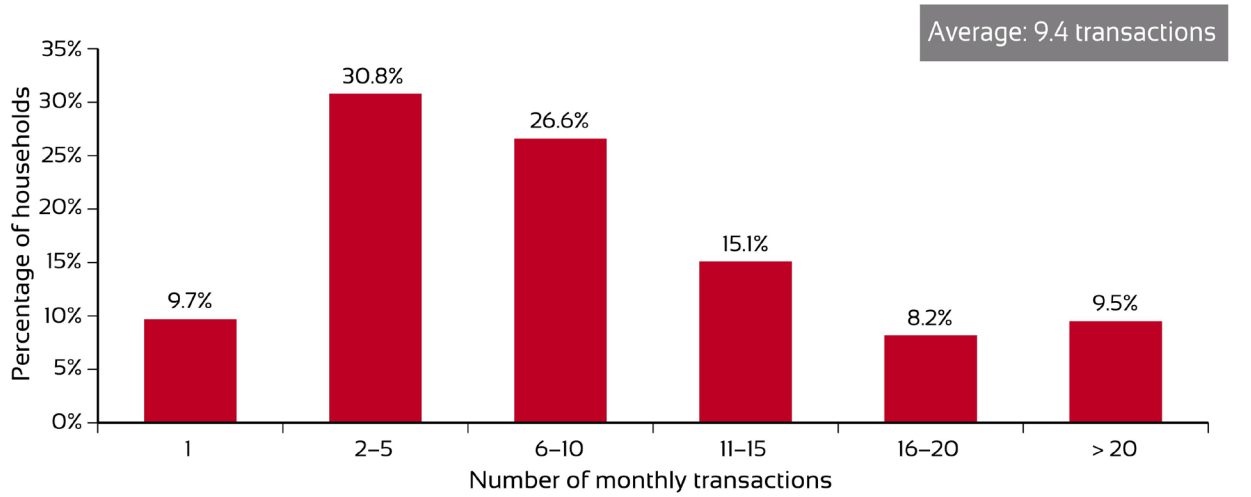
Figure ES.1. Average Monthly Transaction Amount and Number of Transactions Across Three Study Periods



[a] Note: Dollar values converted to FY 2017 dollars using Consumer Price Index values
Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of ALERT and STARS data, FY 2017

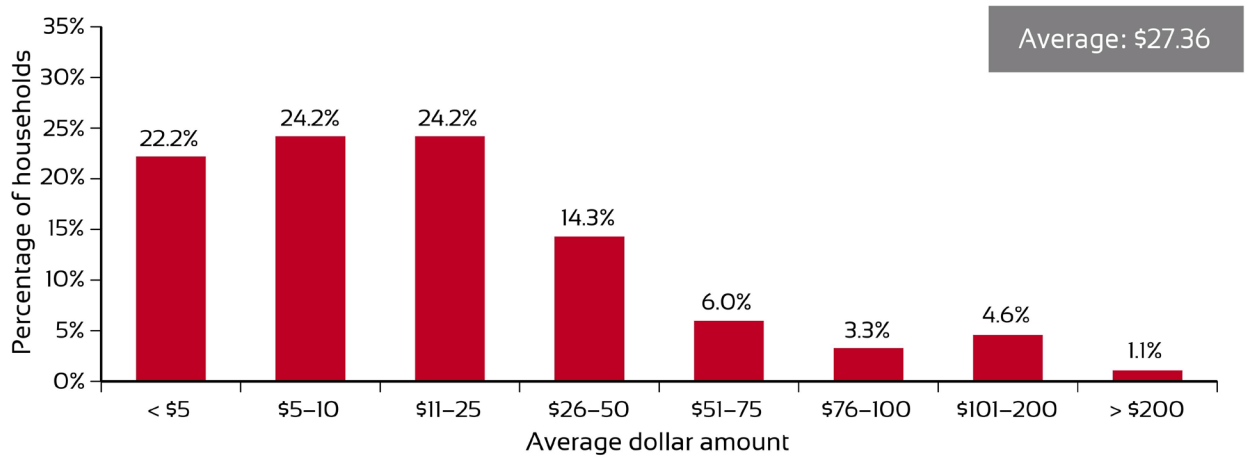
Households differed substantially in the number of transactions made each month: nearly one-third of households averaged 2 to 5 transactions in a month, and 9.5 percent made more than 20 transactions (figure ES.2). On average, households made 3.7 transactions per every $100 in benefits spent (not shown). Average transaction amounts also varied: more than one-fifth of transactions were less than $5, just over 1 percent were more than $200 (figure ES.3).

Figure ES.2. Distribution of Households by Number of Transactions per Month



Source: Insight tabulations of ALERT and STARS Data, FY 2017

Figure ES.3. Distribution of Households by Average Dollar Amount of Transactions



Source: Insight tabulations of ALERT and STARS Data, FY 2017

2. Benefit Redemption by Days of the Month

On average, SNAP households had less than one-quarter of their benefit left by the middle of the month (table ES.1). On the day the issuance was distributed, the average household redeemed 16.5 percent of its benefit. By days 7 and 14, the average household had redeemed 56.7 percent and 77.6 percent of its monthly benefit, respectively, and 89.1 percent by day 21. Households ultimately redeemed 95.9 percent of their monthly benefit by the end of the day before receiving their next issuance.

Table ES.1. Cumulative Proportion of Benefits Redeemed by Day of the Month

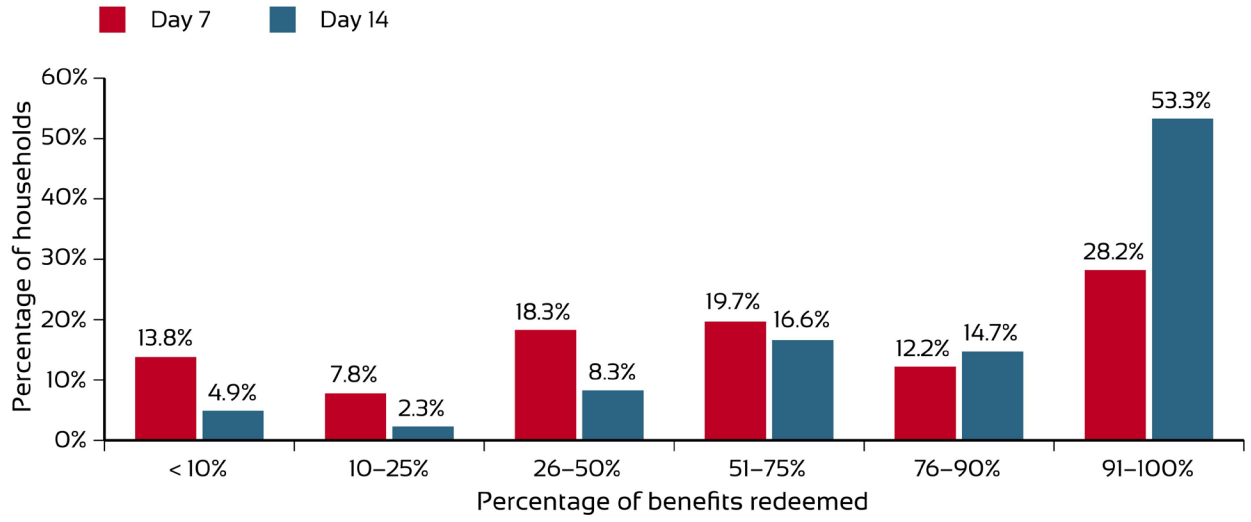
Cumulative Proportion	Day 1	Day 7	Day 14	Day 21	End of Month
Cumulative proportion of benefits redeemed	16.5	56.7	77.6	89.1	95.9
Cumulative proportion of households with balance less than $1	2.2	11.7	22.7	33.2	43.6

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Note: The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

More than two-fifths (43.6 percent) of participating households essentially exhausted their benefits by the end of the month, reaching a balance of less than $1; more than 10 percent had done so by day 7, and more than 20 percent by day 14. A small group of households (2.2 percent) reached this balance on the day they received their issuance.

While table ES.1 illustrates how the average household spent down its benefit across weeks in the month, figure ES.4 examines the distribution of households by how much of the benefit they spent in the first 7 and 14 days. In the first 7 days after issuance, 60.1 percent of households had redeemed between 51 and 100 percent of their benefit, with more than a quarter of households (28.2 percent) redeeming 91 percent or more. By day 14, 84.6 percent of households had redeemed more than half of their benefit, and half (53.3 percent) had redeemed 91 percent or more.

Figure ES.4. Percentage of Benefits Redeemed by Days 7 and 14



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

3. Unspent Issuance and Carryover

In FY 2017, the amount carried over into the next month increased in relation to the size of the issuance; the same was true for a household's monthly ending balance. On average, households' unspent issuance (ignoring benefits not spent from prior months) was $10.72 (table ES.2). When including unspent benefits that accumulated across months, households had an account balance of $25.01 at the end of the month. The amount carried over correlates with the size of a household's issuance: those with an issuance of $25 or less carried over just $0.88, while those receiving an issuance of more than $500 had $29.05 left unspent at the end of the month. Similarly, the average balance at the end of the month correlates with the household's issuance amount, ranging from $5.07 for those with issuances of $25 or less to $53.43 for those with issuances above $500.

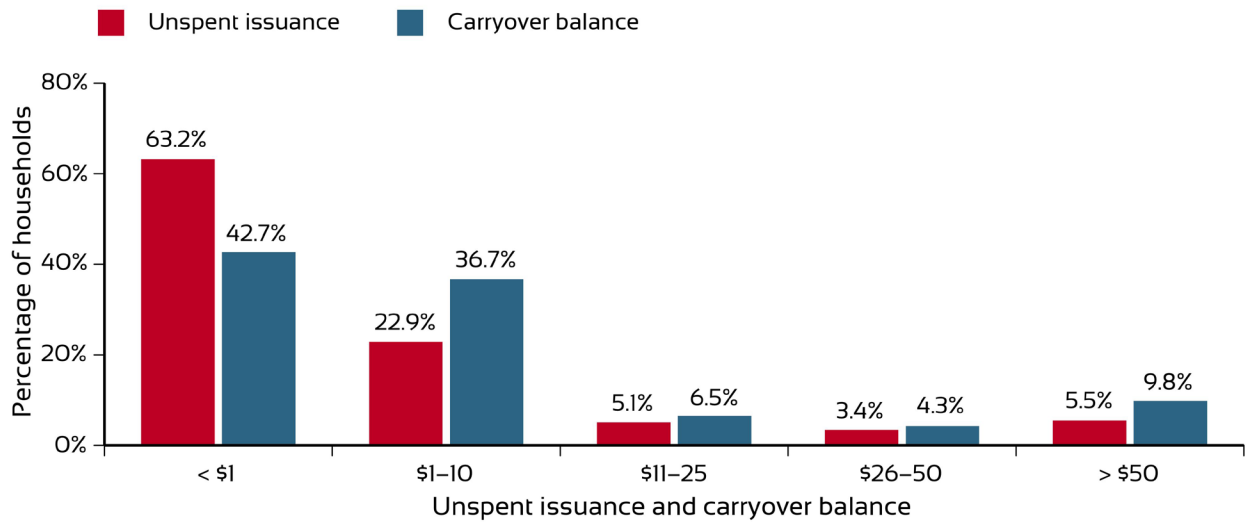
Table ES.2. Value of Unspent Issuance and Account Balance at End of Month

Household Issuance Amount	Average Unspent Issuance ($)[a]	Average End-of-Month Balance ($)[b]
All households	10.72	25.01
Households by monthly issuance amount		
< = $25	0.88	5.07
$26–50	2.51	7.73
$51–100	3.52	11.04
$101–150	5.27	16.07
$151–200	7.30	21.53
$201–250	9.61	19.38
$251–300	11.72	23.18
$301–350	10.82	25.84
$351–400	13.53	32.27
$401–450	14.66	30.30
$451–500	17.08	35.57
> $500	29.05	53.43

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
[a] Unspent issuance is the amount of issuance unredeemed each issuance month, taken as the maximum of zero and (issuance minus redemption). This measure ignores unspent issuance from prior months. Issuance months are defined for each household to begin on the household's issuance day.
[b] The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the accumulation of unspent issuance from all prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

The vast majority of households did not carry over more than $10 into the next month or have an account balance greater than $10 at the end of the month. Figure ES.5 shows that over 85 percent of all households carried over $10 or less from their monthly issuance and nearly 80 percent had an account balance at the end of the month of no more than $10. Fewer than 10 percent of households had an ending balance of more than $50.

Figure ES.5. Percentage of Households by Amount of Unspent Issuance and Carryover Balance



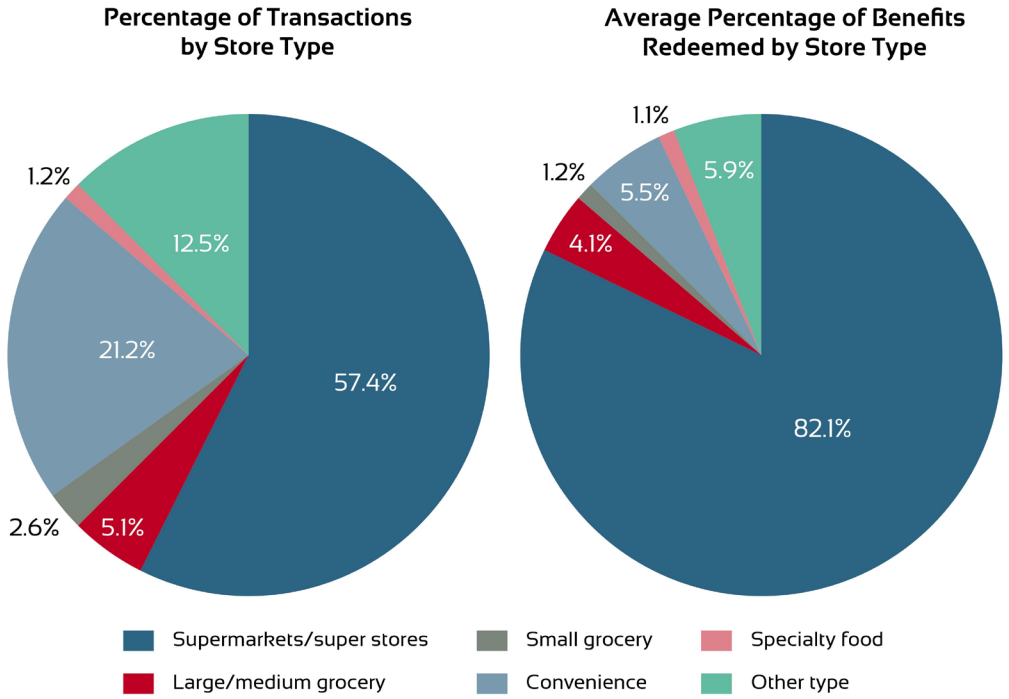
Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Unspent issuance is the amount unredeemed each issuance month, taken as the maximum of zero and (issuance minus redemption). This measure ignores unspent issuance from prior months. For each household, issuance months are defined to begin on the household's issuance day.
The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the accumulation of unspent issuance from all prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

4. Redemption by Store Type

Over 57 percent of purchase transactions occurred at supermarkets/super stores, in comparison to 5.1 percent at large/medium grocery stores and 2.6 percent at small grocery stores (figure ES.6). Over one-fifth of transactions (21.2 percent) took place at convenience stores. The largest average for transactions across store types was at supermarkets/super stores ($39.23, figure ES.7). The smallest average was at convenience stores ($7.17).

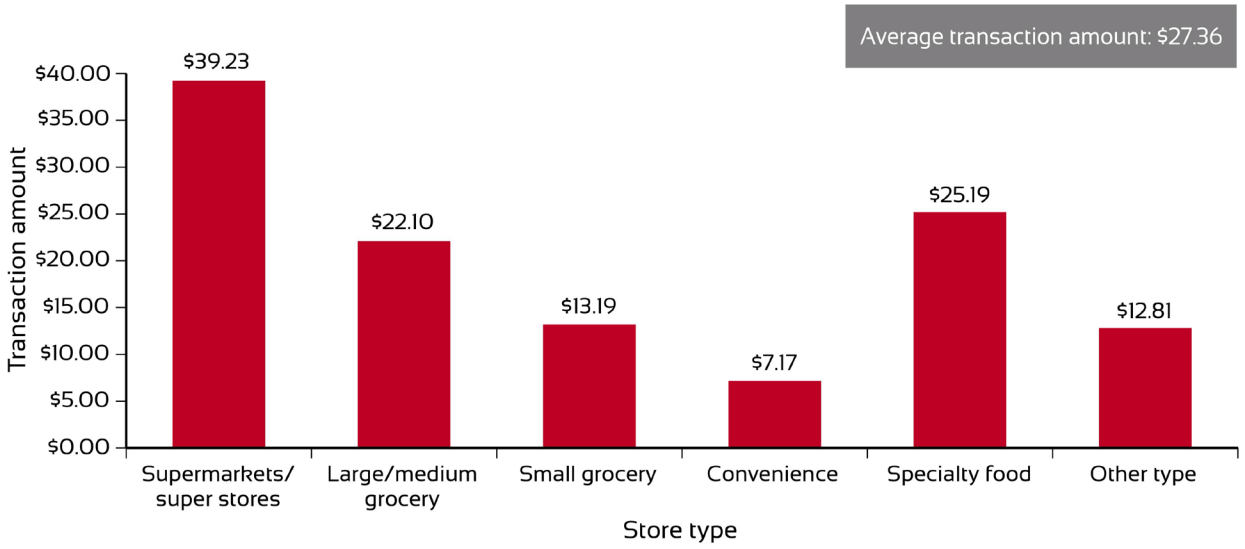
Because participants most often redeemed their benefits at supermarkets/super stores and averaged the largest purchases at these stores, transactions at supermarkets/superstores accounted for 82.1 percent of all benefit dollars redeemed (ES.6). On the other hand, the lower average transaction amount at convenience stores resulted in convenience stores receiving about 5 percent of benefit dollars redeemed even though they received a fifth of the transactions. Purchase transactions at stores categorized as other, which include grocery stores in combination with other stores such as dollar stores and pharmacy stores, account for 12.5 percent of transactions and 5.9 percent of dollars redeemed.

Figure ES.6. Percentage of Transactions and Benefits Redeemed by Store Type



Notes: FNS classifies stores according to 15 types, which are collapsed into the 6 categories here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Figure ES.7. Average Transaction Amounts by Store Type

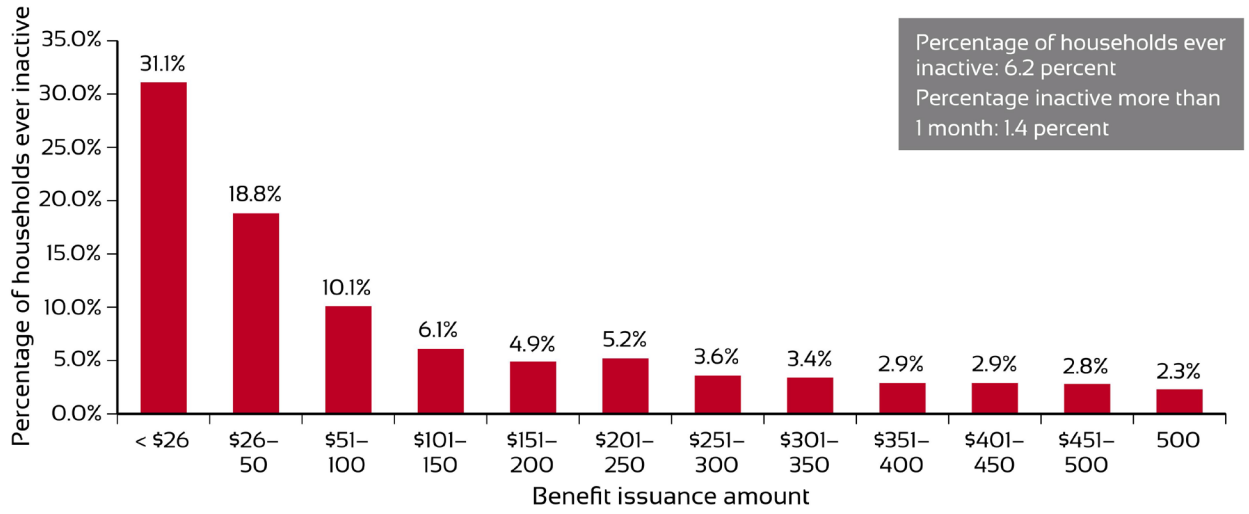


Notes: FNS classifies stores according to 15 types, which are collapsed into the 6 categories shown here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
Source: Insight tabulations of ALERT and STARS data, FY 2017

5. Inactivity

Almost all SNAP households used their benefits in the months they received them. Overall, the percentage of households identified as having received an issuance in a month but not making a transaction in that month (inactive households) was 6.2 percent (figure ES.8). Of those households, most were inactive for only 1 month of 12; 1.4 percent of all households had 2 or more months of inactivity (less than a quarter of those with any period of inactivity). Households with smaller issuances were more likely to be inactive during the year. More than 30 percent of households with a monthly issuance less than $26 were inactive at some point during the year, and 18.8 percent of households with an issuance between $26 and $50 were ever inactive. Figure ES.8 shows the rate of inactivity steadily declined as the issuance amount increased; only 2.3 percent of those with an issuance greater than $500 were inactive during the year.

Figure ES.8. Percentage of Households Ever Inactive by Benefit Issuance Amount



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Households are identified as ever inactive if, during any month, an issuance was received but no purchase transactions were made.
Source: Insight tabulations of ALERT and STARS data, FY 2017

6. Differences Across Subgroups

a. Households With Children

Because of their larger average household size, households with children receive larger than average benefits (an average monthly benefit of $392, compared to the average monthly benefit $245 across all household types) (Chronquist & Lauffer, 2019). Households with children made almost twice as many transactions per month, on average, as those without children (12.6 and 6.9 transactions, respectively, table ES.3). The average transaction amount for households with children ($33.99) was also larger than for those without children ($24.52). This resulted in a total redemption for households with children of almost $400 per month and just over $150 per month for those without children.

Table ES.3. Key Redemption Patterns for Households With Children and Households Without Children

Redemption Patterns	Households With Children	Households Without Children
Transactions		
Total Monthly Redemption	$397.26	$152.02*
Average Number	12.6	6.9*
Average Amount	$33.99	$24.52*
Benefit carryover (dollars)		
Unspent Issuance[a]	$13.81	$7.53
End-of-Month Balance[b]	$37.66	$21.69*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
[a] Unspent issuance is the amount of issuance unredeemed each month, taken as the maximum of zero and (issuance redemption). This measure ignores unspent issuance from prior months. Issuance months are defined for each household to begin on their issuance day.
[b] The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the long-run accumulation of unspent issuance from all prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table rows, relative to the first column in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Also likely because of the larger benefit size, households with children, on average, left more of their benefit unspent at the end of the month. On average, they left $13.81 of their monthly benefit unspent at the end of the month while households without children left just over half that amount ($7.53). Including benefit dollars carried over from the previous months, households with children averaged a balance of $37.66 at the end of the month and households without children averaged $21.69.

b. Households With Earnings

Households with earnings redeemed, on average, about $83 more per month than households without earnings (table ES.4). They made about two transactions more per month (10.7 transactions for households with earnings versus 8.6 transactions for households without earnings), with each transaction averaging about $2 more per month. Households with earnings also, on average, left more of their benefit unspent at the end of the month than households without earnings.

Table ES.4. Key Redemption Patterns for Households With Earnings and Households Without Earnings

Redemption Patterns	Households With Earnings	Households Without Earnings
Transactions		
Total Monthly Redemption	$312.16	$229.07*
Average Number	10.7	8.6*
Average Amount	$31.17	$29.20
Benefit carryover (dollars)		
Unspent Issuance[a]	$11.37	$9.64*
End-of-Month Balance[b]	$32.80	$26.46*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
[a] Unspent issuance is the amount of issuance unredeemed each month, taken as the maximum of zero and (issuance redemption). This measure ignores unspent issuance from prior months. Issuance months are defined for each household to begin on their issuance day.
[b] The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the long-run accumulation of unspent issuance from all prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table rows, relative to the first column in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

7. Atypical Redemption Patterns

This study also includes an examination of very small subgroups of households—those that have redemption patterns that differ from the averages. To examine characteristics of households with atypical patterns, the study team used a regression-based approach that better facilitates identification of relationships between household characteristics and atypical redemption. Descriptive results alone can show the rate of the atypical activity among a certain subset of the sample but not the likelihood the particular subset may be involved in atypical behavior. The regression results facilitate analysis of the percentage point likelihood difference of one group being involved in atypical behavior compared with another group, holding all other demographic characteristics constant.

In identifying households with atypical redemption, the study team recognized many households will experience 1 month in a fiscal year that does not fit within their typical redemption patterns, possibly for such events as a death of a family member, illness, or travel. As a result, discussion of atypical activity is limited to households that have 2 or more months of atypical redemption. For the State comparisons, with a large starting sample, the focus is exclusively on households that exhibited atypical behavior in March (and a second month) to limit the effect of activity in months when household transaction activity may naturally stray from normal patterns, such as for holidays and summer vacations. In the regression analysis of characteristics, relying on the SNAP QC sample, the full sample is included to maintain a sufficient number of households for comparisons, though for each household, the analysis remains limited to the three months centered around the month of QC review.

a. Ending Balances Greater Than $200

On average, 1.4 percent of households had ending balances greater than $200[1] in 2 consecutive months (table ES.5). On average, 44.6 percent of households with large ending balances accumulated this balance with a benefit issuance of $200 or less. Almost 5 percent of households with large ending balances had a benefit of less than $100. Most households that accumulated ending balances over $200 redeemed benefits most frequently at supermarkets and super stores.

Table ES.5. Percentage of Households With End-of-Month Balance Over $200 in February and March 2017

Population	Percentage With Ending Balance > $200 in February and March	Distribution of Households With Ending Balance > $200 in February and March						
		Benefit Amount					Usual Store is Super-market or Super Store	Average Miles to Nearest Supermarket or Super Store
		< $26	$26–50	$51–100	$101–200	> $200		
Total United States	1.4	1.3	0.6	3.0	39.6	55.4	79.9	0.4

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
The $200 threshold represents 78 percent of the average benefit issuance in the 48 contiguous States. The study team adjusted the threshold for Alaska, Guam, Hawaii, and the Virgin Islands to be 78 percent of their respective average issuances (Alaska $336, Guam $459, Hawaii $364, and Virgin Islands $284).
Source: Insight tabulations of ALERT and STARS data, FY 2017

Regression analysis found that households who have a large end-of-month balance are more likely, among other characteristics, to have all elderly or disabled members, or to reside in the Mid-Atlantic, Southeast, or Southwest regions.

The study team also found that households headed by non-Hispanic African-American or Native-American individuals, with a certification period of 7 months or more, or residing in a nonurban area are less likely to have large end-of-month balances.

b. Nonborder Out-of-State Transactions

SNAP benefits may be redeemed in any State, and households living near the border of another State may consistently redeem benefits across State lines. For the measure of atypical out-of-State transactions, the study team focused on transactions made in either (1) States contiguous to the household's State of residence (i.e., a State that shared a State border) but in a county that was not along that State border or (2) in a State not contiguous to the household's State of residence. For brevity purposes, these transactions are referred to here as nonborder out-of-State transactions.

As shown in table ES.6, about 2.6 percent of households made a nonborder out-of-State transaction in both March and another month in FY 2017. As with in-State transactions, most of the nonborder out-of-State dollars were redeemed at supermarkets/super stores (70.7 percent). However, a larger percentage of out-of-State dollar redemption occurs at convenience stores than among all redemption (in-State or

[1] The $200 threshold is used in the 48 contiguous States and represents 78 percent of the average issuance. Thresholds for Alaska, Guam, Hawaii, and the Virgin Islands are set to 78 percent of their respective average issuances (Alaska $336, Guam $459, Hawaii $364, and Virgin Islands $284).

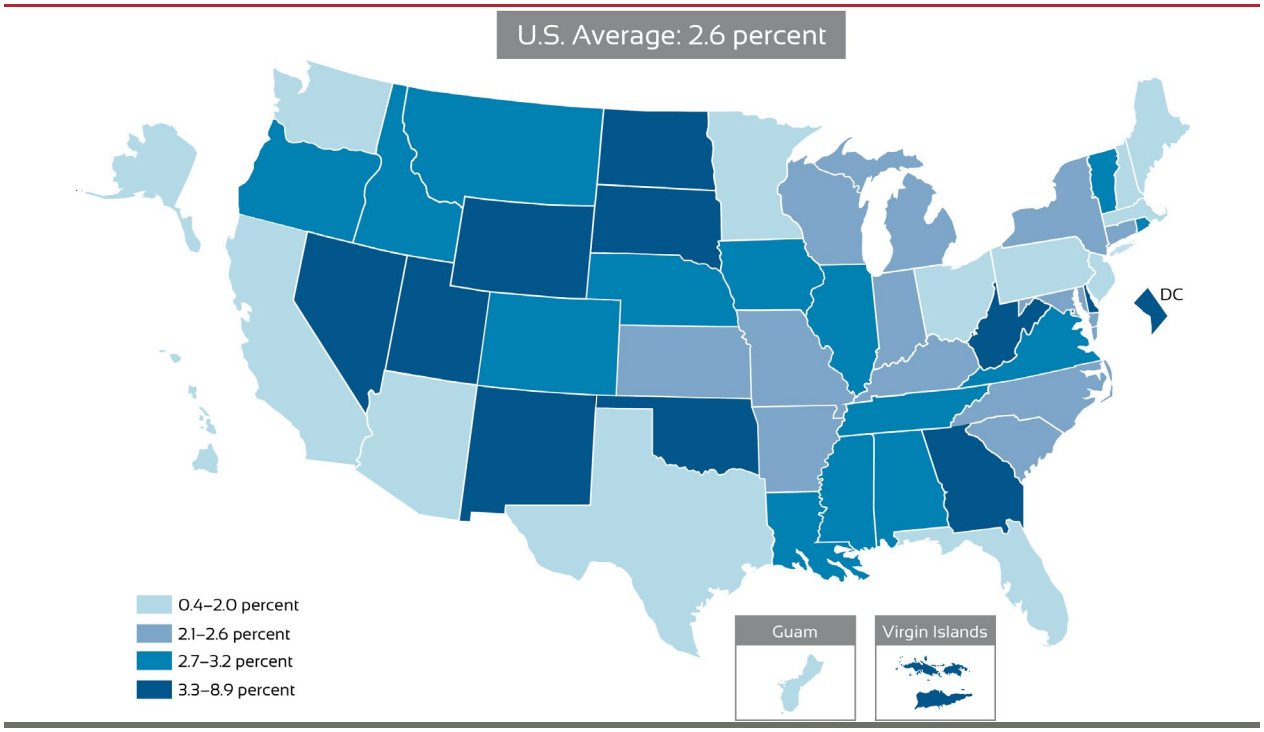
out-of-State), which was 14.0 percent at convenience stores for nonborder out-of-State dollars redeemed (table ES.6) versus 5.5 percent among all dollars redeemed (appendix B, table B.4). Figure ES.9 illustrates the range of households making nonborder out-of-State transactions, from 0.4 percent of households residing in Guam to 8.9 percent of households residing in the District of Columbia.

Table ES.6. Nonborder Out-of-State Transactions

Population	Percentage With Atypical Behavior in March and Another Month	For Households With Out-of-State Redemption in Nonborder County or Noncontiguous State in Multiple Months										
		Percentage of Dollars Redeemed in Out-of-State Purchase Transactions, by Store Type						Percentage of Out-of-State Purchase Transactions by Dollar Amount				
		Supermarket or Super Store	Large/Medium Grocery	Small Grocery	Convenience Store	Specialty Store	Other Stores	< $10	$11–25	$26–50	$51–100	$100
Total United States	2.6	70.7	3.0	1.4	14.0	1.1	9.8	37.1	24.7	16.4	12.4	9.4

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Figure ES.9. Households Making Nonborder Out-of-State Transactions in March and 1 Other Month in FY 2017



Note: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Regression results show that households headed by non-Hispanic African-Americans and households residing in counties with persistent poverty are more likely to make a nonborder out of State transaction. Additionally, our analysis found that, in particular, households with all elderly or disabled members were much less likely to exhibit this atypical behavior. Elderly or disabled individuals may be more likely to experience barriers to transportation that would make it difficult for them to travel out of State.

c. *Inactivity*

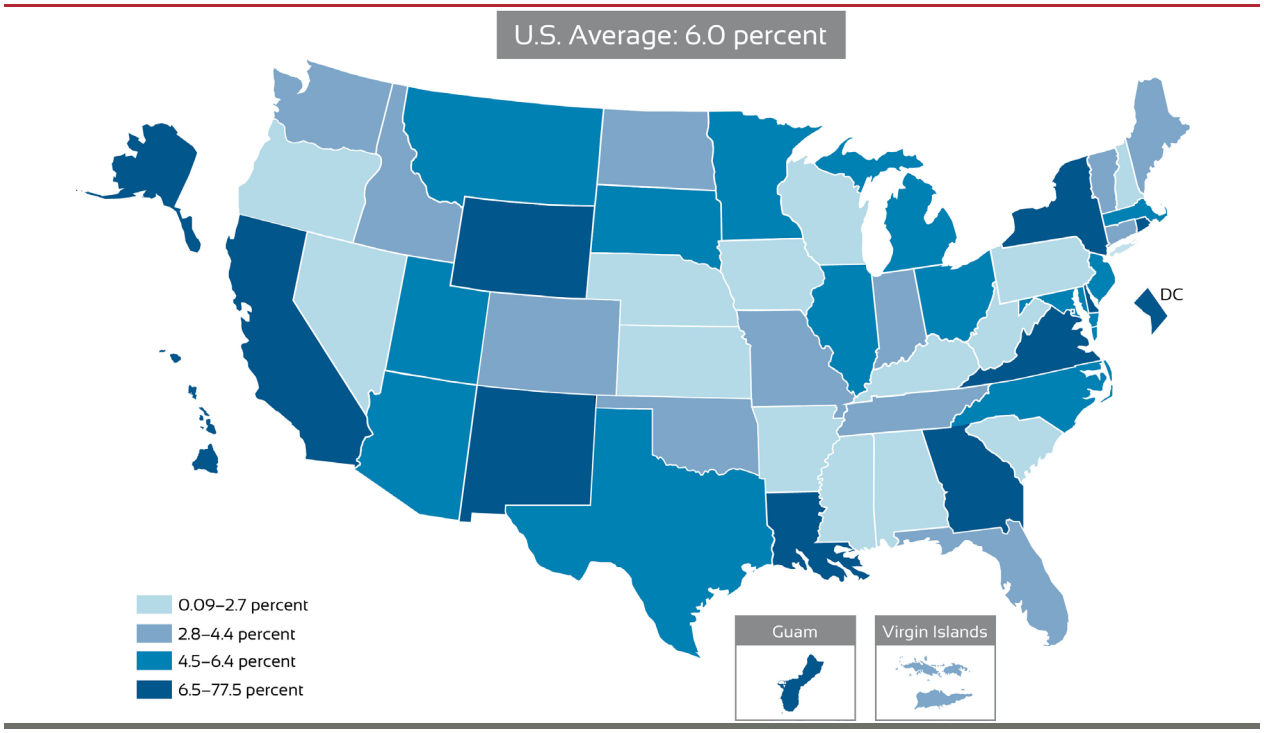
Fewer than 1 percent of households were inactive in March and another month in FY 2017 (table ES.7). On average, over half (57.4 percent) of the inactive households had a benefit issuance of under $26, but 6.0 percent had a benefit issuance of more than $200. Figure ES.10 illustrates the range across States of inactive households with a benefit issuance of more than $200.

Table ES.7. Percentage of Inactive Households

Population	Percentage Inactive in March and Another Month	Distribution of Households Inactive in Multiple Months						
		Benefit Amount					Usual Store Is Super-market or Super Store	Average Miles to Nearest Supermarket or Super Store
		< $26	$26–50	$51–100	$101–200	> $200		
Total United States	0.3	57.4	6.5	8.5	21.6	6.0	78.4	0.6

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017. Households were identified as ever inactive if, during any month, an issuance was received but no purchase transactions were made.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Figure ES.10. Percentage of Households Inactive in March and 1 Other Month in FY 2017 That Had a Benefit Issuance Greater Than $200



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017. Households were identified as ever inactive if, during any month, an issuance was received but no purchase transactions were made.
Source: Insight tabulations of ALERT and STARS data, FY 2017

The regression analysis showed that, in particular, households with all elderly or disabled members, as well as households with 4 or more members were more likely to be inactive. Additionally, several characteristics were associated with a lower likelihood of inactivity. Among these, residing in the Northeast, Southeast, and Mountain Plains, relative to the Midwest, were the largest in magnitude.

d. Variance Attributable to Amount of Issuance and Household Location

In addition to conducting the regression analysis, the study team examined the amount of variance attributable to issuance amount and location (the location of the "usual store" serves as proxy for the household location). This facilitated examination of whether either issuance amount or location provided significant explanatory power in the models. For several of the atypical measures, including large end-of-month balances, issuance explained a larger proportion of the variance than any of the other covariates. However, in each of the three models, over 95 percent of the variation in the measure is not explained by the model. This suggests the majority of variance in the measures is related to unobservable characteristics the study team has been unable to account for in the regressions. It may be concluded that while some characteristics are associated with atypical behavior, other unobservable characteristics that could not be included in the models drive the large majority of variation in these measures. As a result, the study team cautions against using any particular covariate, though it may be statistically significantly associated with an atypical measure, as a predictor of atypical behavior.

Chapter 1. Introduction

The Supplemental Nutrition Assistance Program (SNAP) is the Nation's largest nutrition assistance program, disbursing nearly $54 billion in benefits in fiscal year (FY) 2019 to an average monthly caseload of more than 17 million households (USDA FNS [U.S. Department of Agriculture, Food and Nutrition Service], 2019). Nearly all SNAP participants receive benefits via electronic benefit transfer (EBT) cards to use at authorized retailers to purchase food or food products for home consumption. Participants may use their benefits in any authorized store in any State.

FNS collects all EBT transaction data to monitor retailer activity and detect fraud. The resulting dataset, the Anti-Fraud Locator using Electronic Benefit Transfer (EBT) Retailer Transactions (ALERT), provides precise information about benefit redemption, including the date and time of the transaction, dollar amount, transaction type (purchase, refund, void, or balance inquiry), available balance, and store identifier. EBT data provide a unique opportunity to examine the shopping behavior of SNAP participants. There are limitations: EBT data do not reflect total household food spending (which includes food purchased with non-SNAP tender) and do not identify items purchased. However, the closer the SNAP benefit level is to the maximum allotment, the greater is the likelihood SNAP benefit patterns accurately reflect overall food spending patterns.

In this study, Insight Policy Research (Insight) examines patterns of SNAP benefit redemption in FY 2017, particularly related to the timing and amount of transactions and the rate at which households exhaust their benefits. The study team also makes comparisons with findings from two similar studies conducted for FY 2003 (Cole & Lee, 2005) and FY 2009 (Castner & Henke, 2011). The descriptive tables in appendices A and B follow procedures consistent with those used in the previous studies to facilitate comparisons across time.

This study examines for the first time spending behaviors identified as atypical; namely, an ending balance greater than $200, months in which a benefit is received but the household does not make a transaction, and out-of-State transactions that occur beyond the State's border counties. A descriptive analysis includes a regression-based analysis to identify relationships between atypical patterns and household characteristics.

Analysis of the FY 2017 findings and comparisons with the earlier study results require an understanding of ways the SNAP environment has changed since FY 2009. Factors that could be expected to influence benefit spending patterns are discussed in the next section.

This study had two overarching objectives:

- Statistical description of benefit redemption patterns across all SNAP households and statistical definition and identification of atypical SNAP account activity
- Statistical description of benefit redemption patterns by household demographic and geographic characteristics and description of the demographic and geographic characteristics of typical and atypical SNAP account holders

The study team used the universe of data from ALERT system for FY 2017 to address the first objective. ALERT data for households sampled for SNAP Quality Control (QC) review were used to address the second objective.

A. Background

Historically, SNAP benefits were issued through paper coupons participants used as cash to obtain food at a store checkout counter. In 1984, FNS introduced EBT as a means to deliver SNAP benefits in a demonstration in Reading, Pennsylvania. This was followed by additional EBT pilot projects and State initiatives, until, in 1996, the Personal Responsibility and Work Opportunities Reconciliation Act legislated that all benefits be issued through EBT. The conversion to EBT was completed in 2004 in all 50 States, the District of Columbia, Guam, and the Virgin Islands.

As States neared completion of the conversion to EBT, FNS conducted a study to compile statistical tabulations of benefit redemption patterns using FY 2003 ALERT data and ALERT linked to the SNAP QC data to describe redemption patterns based on household characteristics. This study was repeated and expanded with FY 2009 ALERT data. The FY 2009 data were used to compile tables comparable with FY 2003 to compare FY 2009 with FY 2003 patterns of redemption and to examine differences in benefit redemption for households participating in SNAP before and after benefits were increased by the American Recovery and Reinvestment Act. That act increased benefits and expanded eligibility for nonworking adults without children. Both studies used descriptive statistics to examine the average redemption behavior of SNAP households and the distribution of households across different measures of redemption.

For FY 2003, Cole and Lee (2005) found SNAP participants tended to make several transactions each month and shop at more than one store. On average, per month, participants spent $25.50 per transaction, used their benefits 7.6 times, and shopped at 3.4 stores. They made most of their transactions at supermarkets/super stores, which accounted for 64 percent of transactions and 83 percent of benefit expenditures. Because most households (76 percent in FY 2003) receive less than the maximum SNAP benefit and are expected to make some food purchases with their own funds, households often choose to spend all their allotment soon after issuance. In FY 2003, 63 percent of households used at least half of their benefit within the first 7 days following issuance, and 56 percent used 90 percent within 14 days. In total, households redeemed 80 percent of benefits within 14 days of issuance and 97 percent by the end of the month.

In FY 2009, SNAP benefits increased midyear as a result of the economic downturn. The monthly caseload also grew considerably over the year. The number of transactions households made using their benefits increased from FY 2003 and also during FY 2009 (Castner & Henke, 2011). Before the benefit increase (October 2008–March 2009), households used their benefits 8.5 times per month, and after the increase (April 2009–September 2009), they used their benefits 10.1 times per month. The average transaction amount fell after the benefit increase, from $30.03 per transaction in the first half of the year to $29.10 in the second half. Supermarkets/super stores continued to be the retailers where participants redeemed their benefits most often, handling 64 percent of transactions and 84 percent of benefits. Over 60 percent of households in FY 2009 redeemed at least half of their benefit within 7 days following issuance, and over half (53 percent) redeemed at least 90 percent in 14 days.

B. Changes to the SNAP Environment

Changes in SNAP retailer availability and Federal/State policy can affect household spending patterns. Two such changes that may influence the results are discussed here.

1. Authorized SNAP Retailers

In 2017, more than 273,000 retailers were authorized to accept SNAP benefits, an increase of 29.7 percent over 2009. Table 1.1 shows the distribution by store type for the 2 years (see appendix G, table G.1 for a table of authorized store types by State). The number of authorized convenience stores grew 72.9 percent since 2009; they now represent nearly half of all authorized retailers. The number of retailers classified as "other" increased by 40.8 percent; these include dollar stores and pharmacy stores. While the number of supermarkets/super stores grew in numbers, they became a smaller share of the authorized retailers. The number of authorized small, medium, and large grocery stores all fell.

Table 1.1. FNS-Authorized Retailers by Store Type, 2009 and 2017

Store Type	2009		2017		Change Since 2009	
	Number	Percent	Number	Percent	Percent Difference in Number of Stores	Percentage Points
Supermarket/ super store	37,3190	17.7	38,316	14.0	+2.7	-3.7
Large/medium grocery	15,897	7.6	14,119	5.2	-11.2	-2.4
Small grocery	19,796	9.4	14,910	5.5	-24.7	-3.9
Convenience	74,640	35.5	129,069	47.3	+72.9	+11.8
Specialty	14,200	6.7	8,069	3.0	-43.2	-3.8
Other	48,704	23.1	68,589	25.1	+40.8	+2.0
Total	210,556	100.0	273,072	100.0	+29.7	

Notes: FNS classifies stores according to 15 types, which are collapsed into the 6 categories shown here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores (including dollar stores and pharmacy stores), delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.

2. Supplemental Benefits for Meeting Work Requirements

In FY 2017, three States had implemented programs that provide supplemental benefits to households meeting specified work requirements (California, New Hampshire, and Maine). These programs are typically funded by Maintenance of Effort funds from the Temporary Assistance for Needy Families (TANF) program.

For the purposes of this analysis, the study team opted to add the supplement to the household's regular monthly issuance. Although the supplements are not distributed at the time of the household's typical monthly issuance (often the supplement is issued near the end of the issuance month), it is likely households anticipate and plan for the supplement as part of their monthly spending because it is a predictable amount provided at a predictable time.

C. Datafiles and Overview of Methodology

The study team used data sources and methods consistent with the previous two studies to ensure comparability across the study periods. The data and methods are briefly described here; additional details appear in appendix F.

1. Datafiles

The analysis files relied primarily on three sets of data: ALERT, an extract from the Store Tracking and Redemption System (STARS), and the SNAP QC data.

a. ALERT

The ALERT data have a record of each EBT transaction for each participating household. Each record contains the SNAP household State of residence, EBT account number, and EBT card number; store identifier and State; date and time of transaction; transaction type and amount; and household EBT account balance. The study team obtained data for July 2016 through December 2017, with the focus of the analysis on FY2017.

b. STARS

The STARS extract provided to the study team contains information about each retailer authorized to redeem SNAP benefits during the period July 2016 through December 2017. Each record in the extract contains a store identification number, location, and store type. Store types are further categorized for the purposes of this study (table 1.2).

Table 1.2. Store Classifications

Study Classification	FNS Store Type in STARS
Supermarket/super store	Supermarket, super store
Large/medium grocery store	Large grocery store, medium grocery store
Small grocery store	Small grocery store
Convenience	Convenience store
Specialty food	Bakery, fruit and vegetable market, meat and poultry market, seafood market
Other	Groceries in combination with other stores (including dollar stores and pharmacy stores), delivery routes, farmers markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers

c. SNAP QC Data

The FY 2017 SNAP QC database contains detailed demographic, economic and SNAP eligibility information for a nationally representative sample of 45,530 SNAP households. The raw datafile is generated from monthly reviews of SNAP cases conducted by State SNAP agencies as part of their QC reviews. The study team primarily used the edited version of the file FNS provided, which includes a monthly and fiscal year weight and a variety of constructed economic and demographic variables.

The study team used store identification numbers available in ALERT to link purchase transactions with store data. The team used household identifiers in ALERT and the SNAP QC nonpublic raw datafile to link ALERT transactions with household characteristics for households in the SNAP QC sample.

The study team also gathered additional information from the States and relied on other sources to assist in the analysis.

- ***Crosswalks.*** In 25 States, the SNAP case number is the same as the ALERT household account number, and SNAP QC households were matched directly with ALERT. Remaining States were asked to provide a crosswalk file with a link of the SNAP QC household with ALERT records. The study team received crosswalks for 25 of the 28 States (see appendix F for more details).
- ***County data.*** The USDA Economic Research Service county datafiles were used to classify SNAP QC households and SNAP-authorized retailers by the type of county where they are located. The study team used the classification of counties into metropolitan, micropolitan, and nonmetro counties and indicators of counties characterized by persistent poverty.
- ***County adjacency file.*** The U.S. Census Bureau county adjacency file lists each county, or county equivalent, and which county, or counties, are neighboring.
- ***State issuance data.*** All States issue benefits to any individual household one time during the month (as opposed to bimonthly issuances, for example). However, as shown in the first three columns of table 1.3, most States do not issue benefits to all participants on the first day of the month, but in a more staggered way, depending on the name or the case identifier of the household. If households do not spend all their benefits by the time of the next issuance, the new issuance is added to the remaining benefit.

Table 1.3. Benefit Issuance Schedules

State/ Territory	Determinant	Issuance Dates	Assigned or Imputed	
			ALERT QC File	ALERT Issuance Files
Alabama	Last two digits of case number	4–23	assigned	assigned
Alaska	Not staggered	1	assigned	assigned
Arizona	First letter of last name	1–13	imputed	imputed
Arkansas	Last digit of Social Security number	4, 5, 8, 9, 10, 11,12, 13	imputed	imputed
California	Last digit of case number	1–10	assigned	imputed
Colorado	Last digit of Social Security number	1–10	imputed	imputed
Connecticut	First letter of last name	1–3	imputed	imputed
Delaware	First letter of last name	2–28 even days	N/A[a]	imputed
District of Columbia	First letter of last name	1–10	imputed	imputed
Florida	Eighth and 9th digit of 10-digit case number, read backwards	1–28	assigned	assigned
Georgia	Last two digits of case number	5–23 odd days	assigned	imputed
Guam	Not staggered	1	imputed[b]	imputed[b]
Hawaii	First letter of last name	3, 5	imputed	imputed
Idaho	Last digit of birth year	1–10	imputed	imputed
Illinois	Case type and number	1, 3–10, 13, 17, 20	imputed	imputed
Indiana	First letter of last name	5–23 odd days	imputed	imputed
Iowa	First letter of last name	1–10	imputed	imputed

State/ Territory	Determinant	Issuance Dates	Assigned or Imputed	
			ALERT QC File	ALERT Issuance Files
Kansas	First letter of last name	1–10	imputed	imputed
Kentucky	Last digit of case number	1–19 odd days	assigned	imputed
Louisiana	Last digit of Social Security number	1–14[c]	imputed	imputed
Maine	Last digit of recipient's birth date	10–14	imputed	imputed
Maryland	First three letters of last name	4–23	imputed	imputed
Massachusetts	Last digit of Social Security number	1, 2, 4, 5, 7, 8, 10, 11, 13, 14	assigned	imputed
Michigan	Last digit of case number	3–21 odd days	N/A[a]	imputed
Minnesota	Last digit of case number	4–13	assigned	assigned
Mississippi	Last two digits of case number	4–21	assigned	assigned
Missouri	Client's birth month and last name	1–22	imputed	imputed
Montana	Last digit of case number	2–6	assigned	assigned
Nebraska	Last digit of Social Security number	1–5	imputed	imputed
Nevada	Not staggered	1	assigned	assigned
New Hampshire	Not staggered	5	assigned	assigned
New Jersey	Seventh digit of case number	1–5[d]	assigned	assigned
New Mexico	Last two digits of Social Security number	1–20	imputed	imputed
New York	Last digit of case number	1–9 (outside New York City [NYC]); staggered over 13 days, excluding Sundays and holidays (NYC)	imputed[e]	imputed[e]
North Carolina	Last digit of Social Security number	3-21 odd days	imputed	imputed
North Dakota	Not staggered	1	assigned	assigned
Ohio	Last digit of case number	2–20 even days	N/A[a]	imputed
Oklahoma	Last digit of case number	1, 5, 10	assigned	imputed
Oregon	Last digit of Social Security number	1–9	imputed	imputed
Pennsylvania	Last digit of case number	Dates vary by month and county	assigned[d]	imputed
Rhode Island	Not staggered	1	assigned	assigned
South Carolina	Last digit of case number	2–10 even days and 11–19 odd days	assigned	imputed
South Dakota	Not staggered	10	assigned	assigned
Tennessee	Last two digits of Social Security number	1–20	imputed	imputed
Texas	Last digit of case number	1, 3, 5, 6, 7, 9, 11, 12, 13, 15	assigned	assigned
Utah	First letter of last name	5, 11, 15	imputed	imputed
Vermont	Not staggered	1	assigned	assigned
Virgin Islands	Not staggered	1	assigned	assigned
Virginia	Last digit of case number	1, 4, 7, 9	assigned	imputed
Washington	Last digit of case number	1–10	assigned	imputed

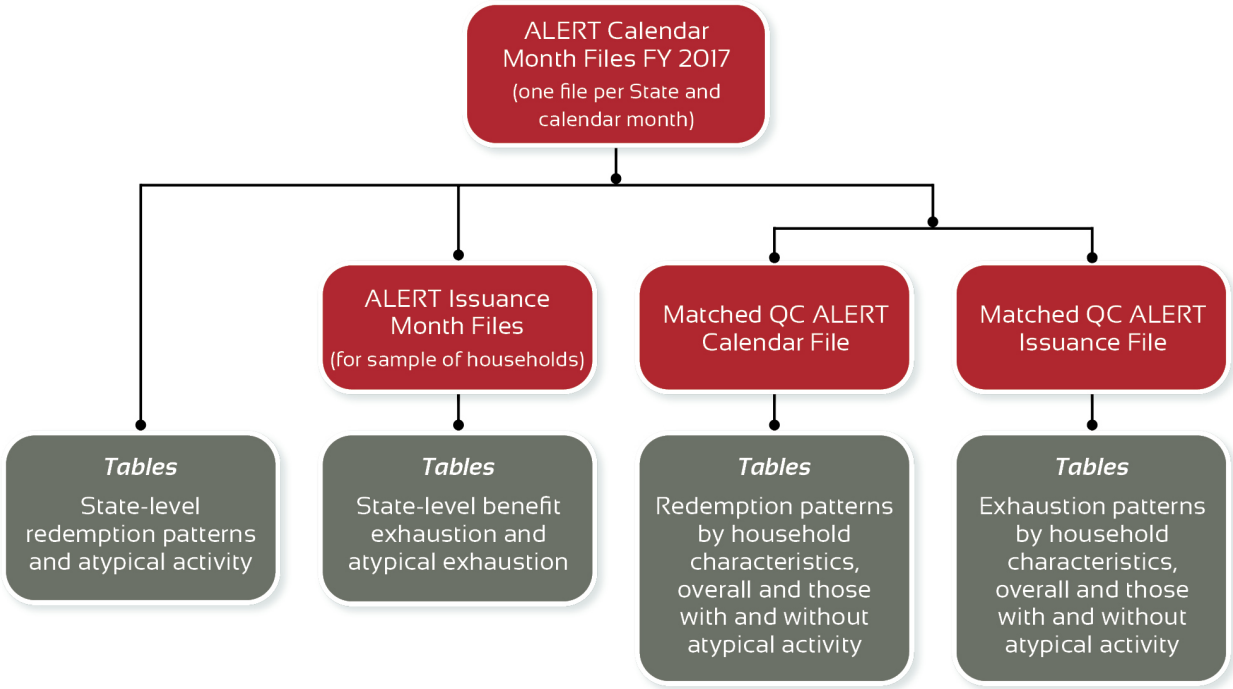
State/ Territory	Determinant	Issuance Dates	Assigned or Imputed	
			ALERT QC File	ALERT Issuance Files
West Virginia	First letter of last name	1–9	imputed	imputed
Wisconsin	Eighth digit of Social Security number	2, 3, 5, 6, 8, 9, 11, 12, 14, 15	imputed	imputed
Wyoming	First letter of last name	1–4	imputed	imputed

[a] As discussed in appendix F, the study team was unable to acquire the information necessary to match the ALERT data with the QC data in Delaware, Michigan, and Ohio.
[b] Available information from FNS indicates Guam issues all benefits on the first of the month. Imputed issuance dates are clearly consistent with staggered issuance over the first 10 days of the month. The study team could not confirm Guam's schedule and used imputed dates for analyses.
[c] In Louisiana, benefits are available between the 1st and 14th of the month. Benefits are available to individuals who are elderly and disabled between the 1st and 4th of the month and to all other cases between the 5th and 14th.
[d] Warren County assigns all benefits on the first day of the month.
[e] To determine which schedule applied to each household, the study team identified the county of residence as the county where most transactions occurred in a month. For counties outside NYC the team imputed issuance dates between the first and ninth; for New York counties, the team established issuance months according to the city's monthly rotating schedule. For Pennsylvania, the study team assigned each household to its county's monthly rotating schedule for the ALERT QC matched file and used imputed issuance days for the ALERT Issuance files.

2. Analysis Files

After performing several types of data cleaning and editing, the study team constructed the four sets of analysis files shown in figure 1.2 (red boxes), which correspond with four sets of tabulations (gray boxes).

Figure 1.2. Four Analysis Files and Their Relationship With Tabulations



Note: State refers to the State SNAP agency issuing benefits.

a. ALERT Calendar Month Files

The ALERT calendar month file is used for descriptive statistics of monthly numbers of transactions by State and store type, average and total transaction amounts by State and store type, and out-of-State redemptions. This file uses only STARS information in addition to the ALERT data. In most States, the calendar month does not align with the issuance month, but the calendar month remains a reasonable time unit for calculating average monthly statistics at the State and national level.

b. ALERT Issuance Month Files

The issuance month files are used to answer questions about how quickly participants spend their benefits after issuance, how much balance they carry over into the next month, and the prevalence of account inactivity. Each issuance month file contains 1 month of activity per household beginning on the date the household received benefits and ending on the date prior to the next monthly issuance. In States with staggered issuance, the first day of the issuance month corresponds with different transaction dates for different households.

The ALERT data do not include a separate record to indicate the date of issuance. The issuance date is assigned based on the State issuance schedule or imputed from the transaction data. Imputation relies on "observed issuances." An observed issuance is an increase in a household's account balance between two consecutive transactions that is not the result of a void or refund (see appendix F for more details). The programming required to impute issuance dates is computationally intense because the team needs to sort and clean the ALERT data for all months to determine the minimum observed issuance date across months. Because of the computational burden, the team used a random sample of 10,000 households per month for each State to create the ALERT issuance month files.

The last two columns of table 1.3 show the States where sufficient data facilitated identifying the benefit issuance day for households and States for which the issuance day had to be imputed. In developing the FY 2017 file, it was apparent more States distribute benefits over more days of the month than in previous years; the imputation was setting issuance dates set too early in the month for many households. Additional examination of State issuances identified States' deviations from normal schedules for circumstances such as impending hurricanes. After careful study and review of the methodology, the study team slightly modified the algorithm from its specification for the 2009 report, as described in appendix F.

c. Matched QC ALERT Calendar and Issuance Files

The ALERT data do not provide household characteristics, so the study team used the SNAP QC sample to examine EBT redemption patterns by household characteristics. The matched QC ALERT files include household characteristics from the SNAP QC data and redemption records from ALERT merged by household identifier. Because household characteristics can vary over the course of a year and SNAP QC data represent the characteristics for a household in just the sample month, the study team tabulated only the ALERT transaction data for the sample month and the month before and after the household was sampled. This approach ensured the ALERT data are, at most, 1 month removed from the SNAP QC review. The QC ALERT files are used to calculate the same statistics as for the ALERT calendar and issuance month files, except statistics are tabulated by household characteristics rather than by State. As indicated in table 1.3, the study team can directly assign the issuance day in more States in the matched QC files because of the crosswalks obtained from the States with the needed case identifiers.

3. Identifying Atypical Account Activity

In this first examination of atypical redemption patterns, this study addressed three research questions specifically regarding atypical account activity:

- What statistically defines atypical redemption activity?
- What is the prevalence of atypical redemption activity?
- What are the demographic and geographic characteristics of the average atypical account holder, and are there statistically significant differences in characteristics of typical and atypical account holders?

a. Measures

To identify atypical activity, the study team conducted a preliminary assessment of a variety of measures of redemption based on outliers of key measures. Some of these measures, upon further review and in consultation with FNS, were determined to not be unusual because they occurred multiple times in the fiscal year for many households (5 percent or more) or because the activity was tied to predictable household characteristics. The report focuses on three measures of atypical activity:

- End-of-month carryover of $200 or more: households that have accumulated over $200 in unused benefits that are carried over from 1 month to the next (or an equivalent percentage of the average issuance in Alaska, Hawaii, Guam, and the Virgin Islands)
- Inactivity during a month of benefit issuance: months in which a household is identified as having received a benefit issuance but did not make any transactions using the month's benefit
- Transactions made out of State in counties not on the border of the household's home State: based on the county adjacency file, transactions made outside the household's State of residence but not in a county that shares a border with the household's home State

Tables for the remaining measures examined appear in appendix E.

b. Timing

Any household may have a period of activity during the year that does not conform to its typical behavior (e.g., family member's serious illness, work schedule, school vacation). Certain times in the calendar year, such as near major holidays, can also disrupt normal shopping and meal routines. To account for this factor, the study team reviewed the levels of each measure across the months of the fiscal year and identified an activity as atypical if it occurred in March 2017 (outside the primary holiday and travel seasons) and at least 1 other month of the fiscal year. For the measure identifying large end-of-month carryover balances, the team required that the carryover be in 2 consecutive months (end of February and end of March), indicating it was a pattern of behavior to maintain a large balance.

However, for the matched QC files, with limited sample sizes and for which the team already limits analysis of transactions to the 3 months centered on the month the household was under review, the team built the measure using all households, regardless of the month of the interview. Therefore, when examining characteristics of households with atypical activity, the team continued to examine households with at least 2 (of the 3) months showing the atypical measure but did not limit the examination to March.

4. Regression Analysis

The regression analyses used the ALERT-QC matched file, which contains household characteristics for FY 2017 (see appendix F for a detailed methodology describing the creation of the analysis file); binary variables indicated the presence of atypical behavior at the household level during the study period (see table 1.4 for a definition of each dependent variable used in the regression analyses presented in chapter 6). The study team estimated a logistic regression model, as shown in the equation below, where atypical behavior was the dependent variable and household characteristics were the covariates:

$$P(atypical\ behavior)_h = \frac{e^{(\beta_0 + \sum \beta_k Characteristics_h)}}{1 + e^{\beta_0 + \sum \beta_k Characteristics_h)}}$$

In the equation,

P (atypical behavior) = the probability of a household exhibiting atypical behavior

h = household

Characteristics = array of *k* number of household characteristics of household *h*

Table 1.4. Definitions of Dependent Variables

Dependent Variable	Definition
Large end-of-month balance	A binary indicator variable that equals 1 if household has a balance at the end of the issuance month of more than $200 (or an equivalent percentage of the average issuance in Alaska, Hawaii, Guam, and the Virgin Islands)
Inactivity	A binary indicator variable that equals 1 if the household has a monthly redemption of $0 in a month with a benefit issuance
Out-of-State redemption in noncontiguous State or in a nonbordering county	A binary indicator variable that equals 1 if the household has an out-of-State transaction that does not occur in a county along the border of the household's home State

The study team chose to estimate a logistic regression model because the results allow for the calculation of the average marginal effect of each covariate.[2] That is, the team determined the difference in the probability of a household with each covariate in exhibiting atypical behavior relative to a reference category (i.e., for the Region variable, the study team estimated the average marginal effect of residing in each region relative to residing in the Midwest).

[2] Typically, results from logistic regression models are displayed as odds-ratios. For this analysis, the study team used the odds-ratio to calculate the average marginal effect of each covariate in the regressions. The study team chose to present average marginal effects because they are easier to interpret than odd-ratios. The average marginal effect enables the reader to quickly establish a sense of the magnitude of the effect in a way that is obscured in an odds-ratio. For example, if the probability of an event happening in a control group is 0.4 and the probability of the same event happening in the treatment group is 0.2, then the odds-ration indicates the treatment reduces the odds of the event taking place by a factor of 0.375. This means the probability of the event taking place is reduced by half in the treatment group. However, the actual probability of the event taking place at all is 0.0004 in the control group and 0.0002 in the treatment. So, while the odds-ratio would provide information on the relative difference in the event taking place between the treatment and control, information would be lost on the overall likelihood of the event taking place at all. The average marginal effect enables the reader to assess the results as a difference in probabilities. For example, the regression results will enable the reader to determine the difference in the probability of a single adult household with children exhibiting atypical behavior compared with a household with no children.

For each categorical variable, the reference category appears in the table of regression results, but no values are provided (see table 6.2). As part of this first-time exploratory analysis looking at spending behaviors defined as atypical, the goal of the regression analysis was to determine which covariates were statistically significantly associated with each atypical measure and the magnitude of that association. As a result, the study team included all household covariates in the model likely to be associated with atypical behavior and did not conduct a stepwise approach that would have included only the covariates that provided the most explanatory power in the model.

D. Organization of the Report

This report identifies patterns of SNAP redemption by categories of redemption measures. Chapter 2 presents patterns related to the number of transactions and the average dollar amounts and the store types at which the transactions take place. Chapter 3 identifies benefit spending by day of the month, after factoring in the issuance schedules for each State. Chapter 4 examines patterns of households not using their benefits for at least 1 month in FY 2017. In each of these three chapters, the patterns are examined by national and State averages and household characteristics, and through State-by-State comparisons. Chapter 5 presents the atypical measures. The tables comparable to Cole & Lee (2005) and Castner & Henke (2011) appear in appendix A (patterns by household characteristic) and appendix B (patterns by State). Tables displaying the measures of atypical SNAP redemption appear in appendices C (by household characteristic) and D (by State). Appendix E shows the remaining atypical measures explored for this report but not included in the discussion. Appendix F provides a detailed description of the methods, and appendix G includes additional supporting tables referenced in the text. Appendices H and I provide supporting tables for the regression analysis of atypical redemption patterns.

Chapter 2. Patterns of Transactions and Store Use

By examining the general household redemption patterns of SNAP benefits, the study team builds a better understanding of how often SNAP participants redeem their benefits, the size of their transactions, and the types of stores where they typically redeem their benefits. The team examines the patterns based on characteristics of the participants and regions of the country. The tabulations in this analysis use the ALERT and QC calendar month files. Full sets of tables appear in appendices A (characteristics) and B (State tables).

The key findings follow:

- Households made many transactions with their benefits, averaging 9.4 transactions per month (3.7 transactions for every $100 spent) and spending an average of more than $27 with each transaction.
- Households with higher benefits redeemed their benefits more often and had higher than average per-transaction amounts.
- On average, households redeemed their benefits at five different stores.
- Transactions at supermarkets/super stores accounted for over half of transactions and 82 percent of benefits redeemed.
- One-fifth of transactions were made at convenience stores, but the low average transaction amount resulted in only about 5 percent of benefits being redeemed at these stores.

Section A presents the findings for the average number of transactions and dollar amounts of transactions. Section B explores transactions by store type. Each section includes an examination of the national and State averages, differences across household characteristics, and a State-by-State comparison.

A. Average Transactions and Dollars

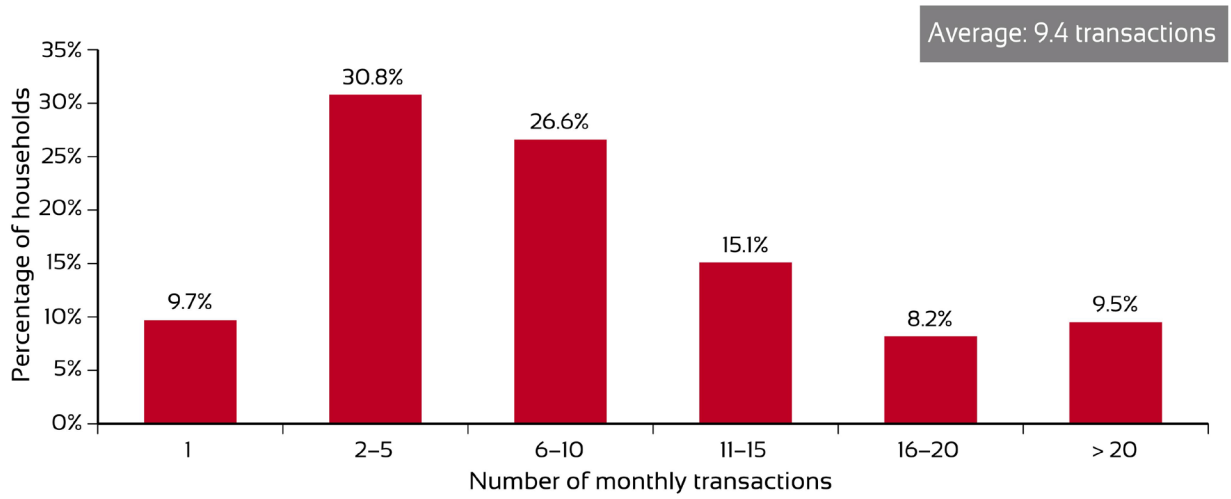
A broad understanding of spending patterns can be gained by examining averages by household of the number of transactions made in a month and the average dollar amounts of the transactions.

1. Household Redemption During FY 2017

On average, 20.6 million households per month in FY 2017 redeemed their SNAP benefit to purchase food. Households made several transactions with their benefits, averaging 9.4 purchase transactions per month.[3] However, the distribution of the number of transactions shows a wide range across households: nearly one-third of households averaged 2 to 5 transactions in a month and 9.5 percent made more than 20 transactions (figure 2.1). On average, households made 3.7 transactions per every $100 in benefits spent (appendix A, table A.1). Most transactions were relatively small, the average amounting to $27.36 (figure 2.2). However, while more than one-fifth of transactions were less than $5, just over 1 percent were more than $200.

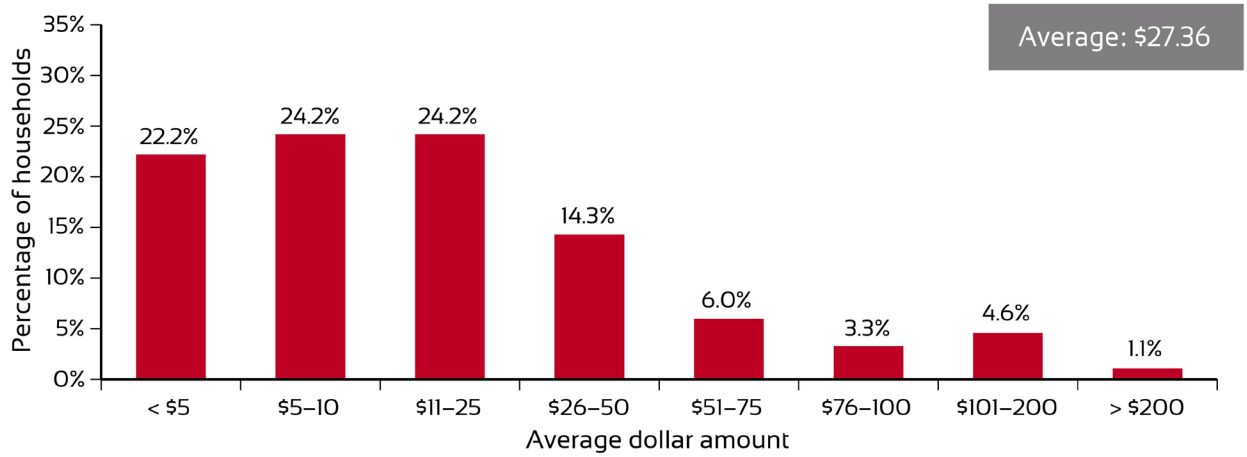
[3] The ALERT data record several types of transactions in addition to purchases (e.g., voids, refunds, balance inquiries). The study team removed balance inquiries and accounted for voids and refunds in the data cleaning procedures (see appendix F). The statistics related to transactions reflect the remaining purchase transactions.

Figure 2.1. Distribution of Households by Number of Transactions per Month



Source: Insight tabulations of ALERT and STARS Data, FY 2017

Figure 2.2. Distribution of Households by Average Dollar Amount of Transactions



Source: Insight tabulations of ALERT and STARS Data, FY 2017

Not surprisingly, much of the variation across households in the number of transactions and average benefit amount relates to the range in the total benefit available for households to spend each month. The average number of transactions and the average transaction amount increased with the total amount of the benefit redeemed (table 2.1). Households that spent $25 or less (7.8 percent of all households) averaged 1.8 transactions per month and $8.25 per transaction. Households that spent $500 or more (13.2 percent of all households) averaged 18.6 transactions at $35.52 per transaction. Nearly a quarter of households spent $151–$200 per month through 8.4 transactions that averaged $22.24 each.

Table 2.1. Average Monthly Redemption Amount and Distribution of Households by Redemption Amount

Redemption Measure	Monthly Household Average	Total Monthly EBT Redemption											
		< $26	$26–50	$51–100	$101–150	$151–200	$201–250	$251–300	$301–350	$351–400	$401–450	$451–500	> $500
Total redemption (percent)	$256.15	7.8	4.1	9.2	10.4	24.1	7.7	5.2	5.2	7.0	3.1	3.1	13.2
Average number of transactions	9.4	1.8	2.7	4.2	6.0	8.4	9.4	10.2	11.4	12.5	13.9	15.0	18.6
Average transaction amount	$27.36	$8.25	$13.78	$18.35	$21.01	$22.24	$23.90	$26.99	$26.68	$29.44	$30.79	$31.75	$35.52

Source: Insight tabulations of ALERT and STARS Data, FY 2017

2. Differences Across Subgroups

Many of the findings by subgroup can be tied to the total benefit available for the household to redeem, which in turn, is tied to household size. As seen in table 2.2, the average number of transactions more than doubled from the smallest to largest households (from 6.7 transactions per month for a one-person household to 15.3 per month for a household with four or more members), and the average transaction amount increased from $24.25 to $36.57. Accordingly, total monthly household redemption was $145.05 for a one-person household and $525.05 for a household with four or more members. Here and in all report sections about differences across subgroups, only results that are statistically significant at the $p < .05$ level are discussed.

Table 2.2. Number of Transactions and Dollar Amounts By Household Size

Household Size	Average Number of Transactions per Household	Average EBT Transaction Amount ($)	Monthly Household Redemption ($)
1	6.7	24.25	145.05
2	9.5*	29.30*	257.32*
3	12.3*	33.31*	380.39*
4+	15.3*	36.57*	525.05*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
* Denotes statistically significant difference in means and proportions ($p < .05$ level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Table 2.3 shows households with children made almost twice as many transactions, on average, as those without children. The average transaction amount for households with children ($33.99) was also larger than for those without children ($24.52). This resulted in a total redemption for households with children of almost $400 per month and just over $150 per month for those without children.

Table 2.3. Average Number of Transactions and Dollar Amounts by Household Composition

Household Composition	Average Number of Transactions per Household	Average EBT Transaction Amount ($)	Monthly Household Redemption ($)
With and without children			
Households with children	12.6	33.99	397.26
Households without children	6.9*	24.52*	152.02*
Types of households with children			
Single-adult households	12.6	32.95	383.43
Multiple-adult households	13.7*	35.61*	456.59*
Children only	10.0*	35.03*	329.45*
All households, by type			
With elderly	5.8	25.49	135.58
With disabled, nonelderly	7.5*	29.31*	198.35*
With children, no elderly or disabled	12.8*	33.86*	404.08*
Other households	9.0*	24.00	191.56*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
* Denotes statistically significant difference in means and proportions ($p < .05$ level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Table 2.3 also indicates that among households with children, households with multiple adults redeemed their benefits more often and spent more per transaction and during the month than single-adult households; households with child participants only (e.g., participating children living with ineligible noncitizens) made fewer transactions and spent less overall during the month, while spending more per transaction, on average. Households with multiple adults made an average of 13.7 transactions in a month, with an average value of $35.61, while single-adult households made an average of 12.6 transactions at $32.95 per transaction. In total, households with multiple adults spent an average of $73 more per month than single-adult households. Children only households made an average of 10.0 transactions per month at $35.03 per transaction and spent a total of $329.45 per month.

Households with elderly members made fewer transactions and spent less in the month than other household types. They made 5.8 transactions on average, while households with nonelderly members with disabilities made 7.5 transactions. Households with children but no elderly or disabled members made the most transactions on average (12.8), while other households made on average 9.0 transactions in a month. Similarly, households with elderly individuals spent $25.49 per transaction, while households with nonelderly or disabled members spent $29.31, and households with children but no elderly or disabled members spent $33.86.

Although substantial variation occurred in total redemption patterns by household size, less variation occurred by the race/ethnicity of the household head. Table 2.4 shows households headed by non-Hispanic White participants made the fewest transactions in a month (8.5 transactions), on average. Households headed by Asian participants made the most transactions per month (11.0 transactions).

Households headed by non-Hispanic African-American participants, Hispanic participants, and non-Hispanic Native American participants also made more transactions per month than households headed by non-Hispanic White participants (9.9, 10.0, and 10.4 transactions, respectively). Despite these differences in number of transactions, the average transaction amount was similar among households headed by non-Hispanic White, Hispanic, and non-Hispanic Asian participants. Households headed by non-Hispanic Native-American participants made larger transactions than households headed by non-Hispanic White participants, and households headed by non-Hispanic African-American participants made smaller transactions than households headed by non-Hispanic White participants. Regarding monthly spending, households headed by non-Hispanic White individuals spent less in total per month than households headed by any individuals of all other racial/ethnic groups.

Table 2.4. Average Number of Transactions and Dollar Amounts by Race and Ethnicity of Household Head

Race/Ethnicity of Household Head	Average Number of Transactions per Household	Average EBT Transaction Amount ($)	Monthly Household Redemption ($)
White Non-Hispanic	8.5	29.95	234.73
African American Non-Hispanic	9.9*	28.66*	255.20*
Hispanic	10.0*	31.31	289.98*
Asian Non-Hispanic	11.0*	27.35	284.01*
Native American Non-Hispanic	10.4*	32.57*	305.73*
Other Non-Hispanic [a]	9.1*	30.80	259.05*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.

* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.

[a] Includes non-Hispanic individuals with multiple reported races (less than 1 percent of all household heads) and individuals of unknown race (16 percent of all household heads).

Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households with earnings and those receiving TANF redeemed more total benefits per month than households without earnings and those without TANF, respectively, both by redeeming benefits more often and spending more per transaction (table 2.5).

Table 2.5. Average Number of Transactions and Dollar Amounts by Employment Status, TANF Receipt, Certification Period, and Benefit Size

Household Characteristic	Average Number of Transactions per Household	Average EBT Transaction Amount ($)	Monthly Household Redemption ($)
Employment status			
Households with earnings	10.7	31.17	312.16
Households without earnings	8.6*	29.20*	229.07*
Receipt of TANF			
Yes	13.4	33.41	410.01
No	9.0*	29.64*	246.98*
Months in certification period			
≤ 6 months	11.0	31.64	324.37
7–12 months	9.5*	30.14*	262.28*
> 12 months	6.5*	25.31*	148.85*
Benefit amount			
Minimum benefit	2.1	11.05	22.00
Maximum benefit	10.4*	28.89*	272.54*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

The certification period for households represents the length of time before a household must reapply for benefits. Typically, the certification period assigned at the household's first approval is tied to the expected instability of its income. Households with earnings typically have certification periods of 6 to 12 months and households including elderly individuals, often on fixed incomes, frequently have longer certification periods of 24 months or more. Table 2.5 shows households with shorter certification periods made more transactions and spent more per transaction than those with longer certification periods. Total monthly redemption for households with certification periods shorter than 6 months was more than double the monthly redemption for households with certification periods longer than 12 months.

Households receiving the minimum benefit ($16 for one- and two-person households in FY 2017 in the contiguous States) typically averaged about two transactions per month. Their total redemption per month was $22.00, indicating they saved at least some of their benefit from the previous month and made multiple larger transactions than otherwise would be possible.

Relative to households in the Northeast Region, households in the Mid-Atlantic, Midwest, and Southeast Regions made fewer transactions per month but of larger value, resulting in total monthly redemption values that were not statistically different from one another. In contrast, households in the Southwest, Mountain Plains, and West Regions made larger transactions than households in the Northeast Region and consequently spent more per month, despite making a similar number of transactions. Table 2.6 shows that households in the Northeast Region made an average of 9.7 transactions per month with a per-transaction value of $26.96. Households in the Mid-Atlantic, Midwest, and Southeast Regions had

fewer transactions but made larger purchases: 8.2 transactions for an average amount of $31.35 in the Mid-Atlantic Region, 9.0 transactions averaging $29.89 in the Midwest Region, and 8.8 transactions with an average of $31.05 per transaction in the Southeast Region.

Table 2.6. Average Number of Transactions and Dollar Amount by Geographic Location

Geographic Location	Average Number of Transactions per Household	Average EBT Transaction Amount ($)	Monthly Household Redemption ($)
All households	9.3	29.92	255.18
Region			
Northeast	9.7	26.96	239.28
Mid-Atlantic	8.2*	31.35*	233.48
Midwest	9.0*	29.89*	246.39
Southeast	8.8*	31.05*	252.38
Southwest	9.6	30.94*	274.28*
Mountain Plains	9.3	30.03*	256.18*
West	10.2	29.14*	271.97*
Metro/nonmetro areas[a]			
Metropolitan	9.4	29.80	257.67
Nonmetro, micropolitan	8.8*	30.39	248.07*
Nonmetro, noncore	8.6*	30.67	243.02*
County with persistent poverty[a]			
Yes	10.6	26.41	253.85
No	9.1*	30.46*	255.84

Notes: Regions are defined using FNS definitions as of FY 2017.
Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
[a] Excludes households in Guam and the Virgin Islands
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

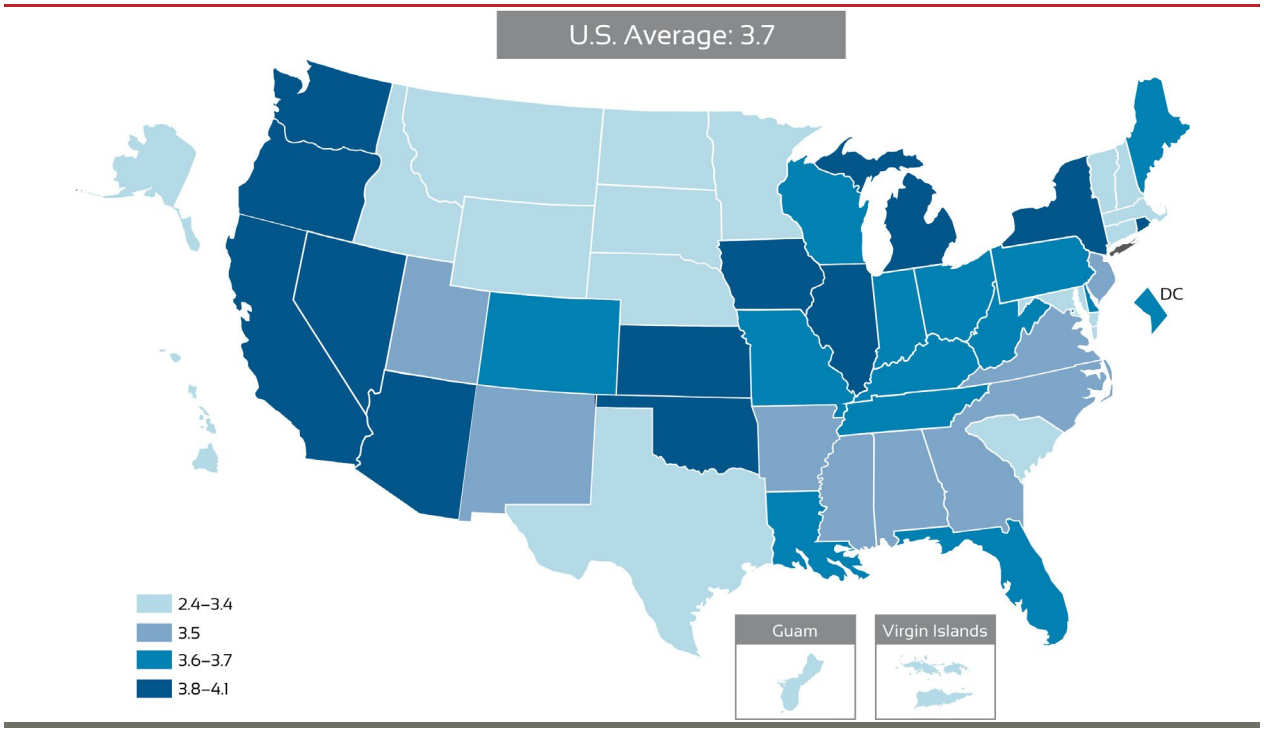
Households in metropolitan areas made more transactions with their SNAP benefits than households in micropolitan and noncore areas but spent similar amounts per transaction. Households in counties with persistent poverty made more transactions than households without persistent poverty but spent less per transaction.

3. Differences Across States

Mapping the averages for States by quartile of each measure provides a picture of the variation across States in parts of the country that cross the regional boundaries. Across all households in the United States, households averaged 9.4 transactions per month. Across States, the averages ranged from 7.2 to 18.2 transactions per month, with the lowest averages in New Hampshire (7.2) and Maine (7.7) and the highest in Alaska (15.2) and Guam (18.2) (appendix B, table B.1). After standardizing based on the amount of benefits redeemed, States ranged from 2.4 to 4.1 transactions for every $100 in benefits redeemed per household (figure 2.3). The average transaction amount varied from $24.17 to $42.27 (figure 2.4). Similar to the regional averages for average transactions shown in table 2.6, States with the

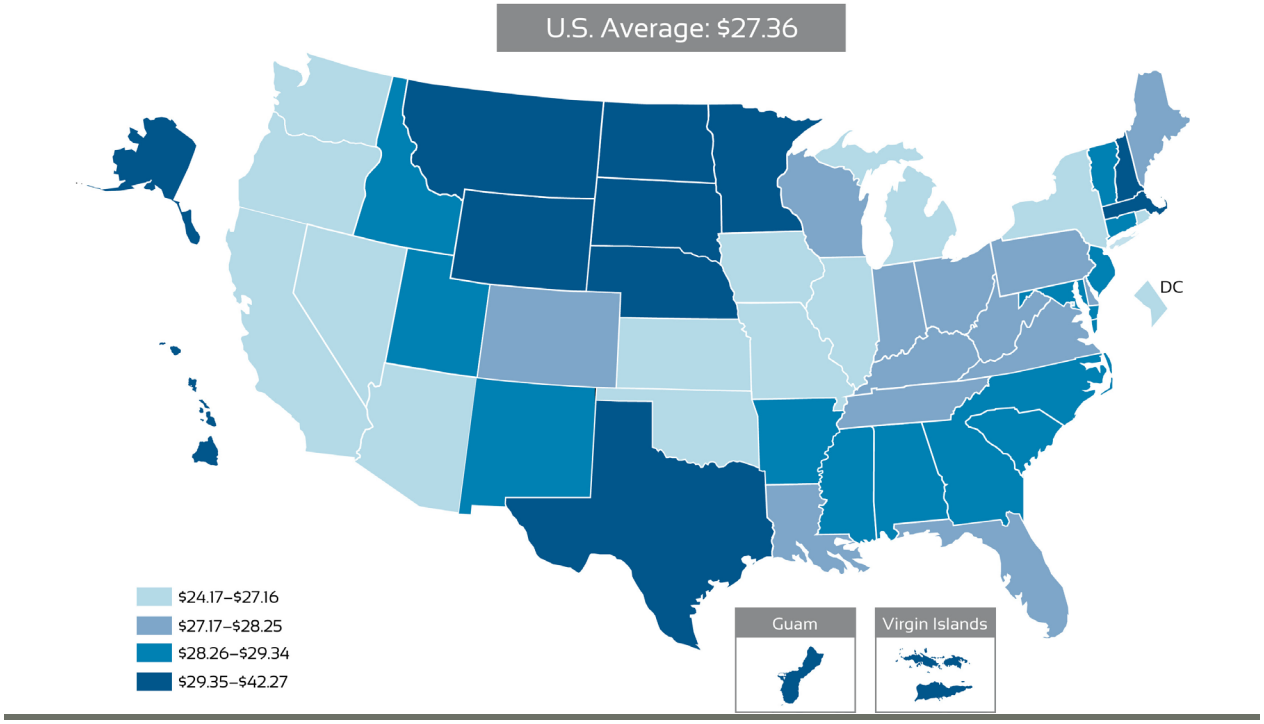
highest average number of transactions per $100 redeemed were often the States with the lowest average transaction amount (compare the dark shaded States in figure 2.3 with the light shaded States in figure 2.4).

Figure 2.3. Average Monthly Number of Transactions per $100 in Benefits Redeemed



Source: Insight tabulations of ALERT and STARS Data, FY 2017

Figure 2.4. Average Monthly Transaction Amount



Source: Insight tabulations of ALERT and STARS Data, FY 2017

B. Transactions by Store Type

Recognizing that, on average, households used their benefit over nine times per month, the following discussion examines the number and type of stores where households redeemed their benefits.

1. Number and Type of Stores Frequented During FY 2017

During the month, households redeemed their benefits at 4.5 different stores, on average. Almost 30 percent of households redeemed their benefit at six or more stores, while 16.3 percent redeemed their benefit at just one store (figure 2.5). SNAP benefits may be used in a State outside the issuing State, and 6.3 percent of households used their benefit for at least one transaction in a State other than their State of residence (appendix B, table B.15). Out-of-State transactions accounted for 2.7 percent of all transactions and 3.1 percent of benefits redeemed. When households redeemed their benefit out of State, they redeemed 48.2 percent of that month's benefit, on average.

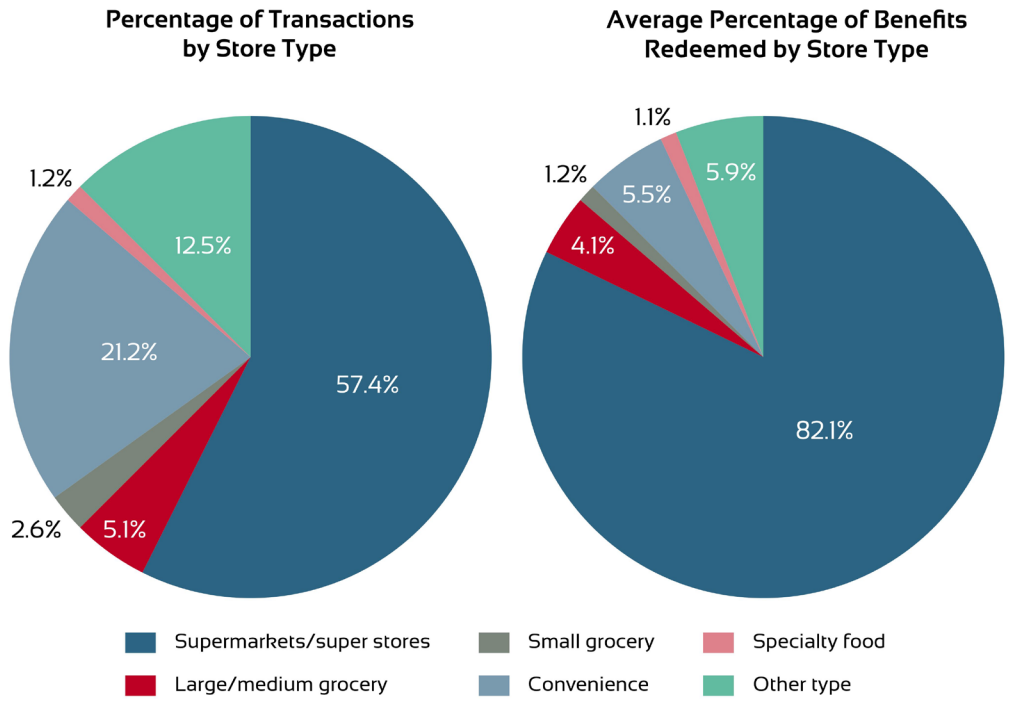
Figure 2.5. Distribution of Households by Average Monthly Number of Stores Frequented

Source: Insight tabulations of ALERT and STARS data, FY 2017

Over 57 percent of purchase transactions occurred at supermarkets/super stores, in comparison to 5.1 percent at large/medium grocery stores and 2.6 percent at small grocery stores (figure 2.6). Over one-fifth of transactions (21.2 percent) took place at convenience stores. The largest average for transactions across store types was at supermarkets/super stores ($39.23, figure 2.7). The smallest average was at convenience stores ($7.17).

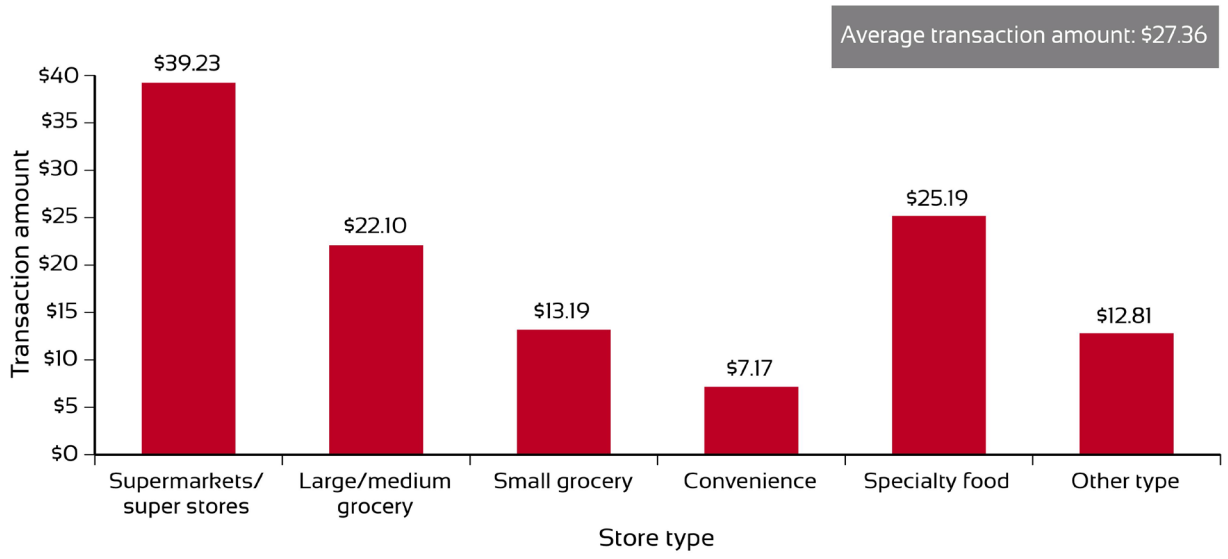
Because participants most often redeemed their benefits at supermarkets/super stores and averaged the largest purchases at these stores, transactions at supermarkets/superstores accounted for 82.1 percent of all benefit dollars redeemed (figure 2.6). On the other hand, the lower average transaction amount at convenience stores resulted in convenience stores receiving about 5 percent of benefit dollars redeemed even though they received a fifth of the transactions. Purchase transactions at stores categorized as other, which include grocery stores in combination with other stores such as dollar stores and pharmacy stores, account for 12.5 percent of transactions and 5.9 percent of dollars redeemed.

Figure 2.6. Percentage of Transactions and Benefits Redeemed by Store Type



Notes: FNS classifies stores according to 15 types, which are collapsed into the 6 categories here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
Source: Insight tabulations of ALERT and STARS data, FY 2017

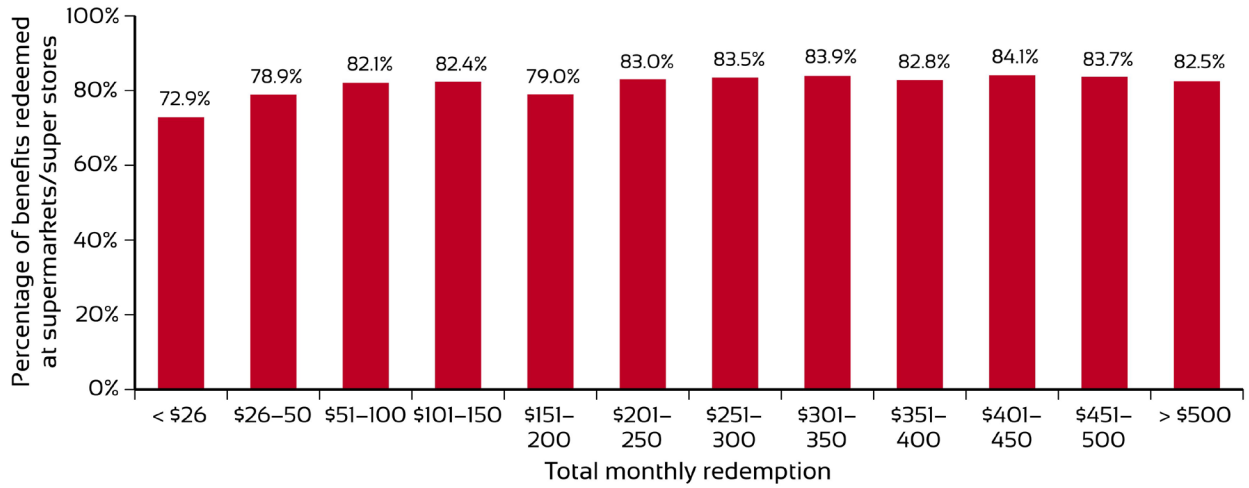
Figure 2.7. Average Transaction Amounts by Store Type



Notes: FNS classifies stores according to 15 types, which are collapsed into the 6 categories shown here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Households with the lowest total redemption (less than $26) spent a smaller than average percentage of their benefits at supermarkets/super stores (72.9 percent). Households redeeming more than $50 spent at least 79 percent of their benefit at supermarkets/super stores, with little variation among benefit amounts above $50 (figure 2.8).

Figure 2.8. Benefits Redeemed at Supermarkets/Super Stores by Total Monthly Redemption



Source: Insight tabulations of ALERT and STARS data, FY 2017

While some households redeemed all their benefit in the month at supermarkets/super stores, others did not redeem any of their benefit at these types of stores. Over one-third of households redeemed all of their benefits at supermarkets/super stores. However, 4.6 percent of households did not rely on supermarkets/super stores when redeeming their benefit, particularly those with total monthly redemption under $50 (table 2.8). Fewer than 1 percent of households redeemed benefits exclusively at grocery stores and another 1 percent exclusively at convenience stores (table 2.7). The higher the benefit, the more likely a household was to redeem at least some of its benefit at a supermarket or super store.

Table 2.7. Benefit Redemption Exclusively at Store Types

Store Type	Percentage of Households Redeeming Benefit Exclusively at Store Type
Supermarkets/super stores	34.7
Grocery stores	0.7
Convenience stores	0.9

Source: Insight tabulations of ALERT and STARS data, FY 2017

Table 2.8. Households With No Benefit Redemption at Supermarkets/Super Stores

Store Type	Percentage of Households With No Supermarket/Super Store Redemption (Percent)
All households	4.6
Households by total monthly redemption	
< $26	23.9
$26–50	11.3
$51–100	5.9
$101–150	3.8
$151–200	3.8
$201–250	1.7
$251–300	1.2
$301–350	0.9
$351–400	1.0
$401–450	0.6
$451–500	0.5
> $500	0.5

Source: Insight tabulations of ALERT and STARS data, FY 2017

About 1.5 percent of transactions occurred at retailers with previous compliance actions[4] and account for less than 1 percent of benefit dollars redeemed (see appendix B, table B.6a)

2. Differences Across Subgroups

As with the number of transactions and average benefit amount, the number of stores where a household shopped was tied to the household size. For example, table 2.9 shows almost a quarter of households of size 1 redeeming benefits at only one store in the month, while 13 percent of households of size 2, fewer than 7 percent of households of size 3, and fewer than 5 percent of households of size 4 or more redeemed benefits at just one store in the month. Households of size 1 also redeemed benefits at just two or three stores more often than other household sizes. The turning point was at four stores; households of larger sizes more often redeemed benefits at five or more stores than households of size 1. About half of households of size 4 or more redeemed benefits at six or more stores during the month.

[4] Compliance actions include disqualification, fine, civil monetary penalty, and warning letter.

Table 2.9. Number of Stores Utilized by Household Size

Household Size	Average Number of Stores	Percentage of Households Redeeming Benefits at Number of Stores						
		1	2	3	4	5	6–9	10 or more
1	3.4	24.2	21.0	17.0	12.6	8.7	13.3	3.2
2	4.7*	13.1*	14.4*	15.6*	13.3	11.6*	24.0*	8.0*
3	5.7*	6.2*	10.2*	12.5*	14.0*	13.5*	31.0*	12.7*
4+	6.5*	4.5*	7.5*	11.1*	11.9	12.6*	34.2*	18.3*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households with children redeemed their benefits at more stores than households without children (table 2.10). Households with children redeemed their benefits at 5.7 stores, on average, while households without children redeemed them at 3.5 stores. Households with elderly individuals redeemed their benefits at fewer stores than other household types. They averaged 2.9 stores per month and redeemed benefits at one or two stores more than half of the time.

Table 2.10. Number of Stores Utilized by Household Composition

Household Composition	Average Number of Stores	Percentage of Households Redeeming Benefits at Number of Stores						
		1	2	3	4	5	6–9	10 or More
With and without children								
Households with children	5.7	6.7	10.4	13.2	13.2	12.7	30.4	13.4
Households without children	3.5*	24.0*	20.5*	16.8*	12.5*	8.8*	13.9*	3.4*
Types of households with children								
Single-adult households	5.9	6.8	9.9	12.5	12.4	12.5	30.7	15.2
Multiple-adult households	5.8	6.0	10.0	13.2	13.6	12.7	31.2	13.2*
Children only	4.8*	7.8	13.3*	16.2*	16.2*	13.6	26.8*	6.1*
All households, by type								
With elderly individuals	2.9	32.3	22.7	16.0	10.6	7.0	9.5	1.8
With disabled, nonelderly individuals	3.7*	21.8*	19.9*	16.4	12.8*	9.0*	15.5*	4.6*
With children, no elderly or disabled individuals	5.8*	6.3*	10.0*	12.9*	13.1*	12.8*	30.9*	14.0*
Other households	4.4*	12.0*	16.0*	17.4*	14.8*	11.8*	21.8*	6.3*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Along with redeeming benefits at fewer stores than other types of households, those with elderly members redeemed a larger percentage of their transactions at supermarkets/super stores, and large/medium grocery stores than other household types (table 2.11). They conducted more than 75 percent of their transactions at these two store types (70.5 percent at supermarkets/super stores, 6.9 percent at large/medium grocery stores). Households with elderly members made 8.0 percent of transactions at convenience stores. In contrast, other types of households conducted around 20 percent of their transactions at convenience stores. Households of all types conducted most of their transactions at supermarkets/super stores.

Table 2.11. Percentage of Transactions at Store Type by Household Composition

Household Composition	Percentage of Transactions Made at Store Type					
	Supermarkets/ Super Stores	Large/ Medium Grocery	Small Grocery	Convenience	Specialty Food	Other Type
With and without children						
Households with children	59.7	5.1	2.5	19.1	1.3	12.3
Households without children	60.0	5.0	2.6	18.3	1.2	12.8
Types of households with children						
Single-adult households	58.0	3.8	2.4	21.6	1.1	13.0
Multiple-adult households	61.4*	5.3*	2.2	17.5*	1.5*	12.0
Children only	64.5*	12.2*	3.3	9.5*	1.9*	8.7*
All households, by type						
With elderly individuals	70.5	6.9	2.2	8.0	1.8	10.6
With disabled, nonelderly individuals	57.0*	4.5*	3.2*	20.3*	1.1*	14.0*
With children, no elderly or disabled individuals	60.0*	5.2*	2.4	19.0*	1.3*	12.0*
Other households	54.1*	3.9*	2.6	24.8*	0.9*	13.7*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
FNS classifies stores according to 15 types, which are collapsed into the 6 categories shown here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

The number of stores where benefits were redeemed varied by the race/ethnicity of the household head. Households headed by non-Hispanic White individuals redeemed a larger percentage of their benefits at one or two stores (40.7 percent) than households headed by individuals of other races/ethnicity (table 2.12). Over 12 percent of households headed by non-Hispanic Asian individuals redeemed their benefits at 10 or more stores, which was the highest percentage of households headed by individuals of any race to redeem at that many stores.

Table 2.12. Number of Stores Utilized by Race/Ethnicity of Household Head

Race/Ethnicity of Household Head	Average Number of Stores	Percentage of Households Redeeming Benefits at Number of Stores						
		1	2	3	4	5	6–9	10 or More
White Non-Hispanic	3.8	22.0	18.7	16.1	12.6	9.5	16.2	5.0
African American Non-Hispanic	5.0*	12.3*	13.8*	14.6*	13.0	10.7*	25.1*	10.6*
Hispanic	4.8*	12.2*	13.4*	15.1	14.1*	11.9*	24.9*	8.3*
Asian Non-Hispanic	5.2*	12.0*	13.4*	12.8*	11.6	13.2*	24.8*	12.2*
Native American Non-Hispanic	4.6*	15.2*	14.8*	15.2	13.1	11.1	23.3*	7.4*
Other Non-Hispanic[a]	4.4*	16.8*	17.6	15.2	12.0	10.2	20.4*	7.8*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
[a] Includes non-Hispanic individuals with multiple reported races (less than 1 percent of all household heads) and individuals of unknown race (16 percent of all household heads).
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households headed by non-Hispanic African-American or Native-American individuals conducted fewer of their transactions at supermarkets/super stores than those headed by non-Hispanic White individuals (table 2.13). Convenience store redemption habits varied widely by race/ethnicity of household head; households headed by non-Hispanic Native-American individuals made more than 26 percent of their transactions at convenience stores, while households headed by non-Hispanic Asian individuals made fewer than 6 percent of their transactions at convenience stores.

Table 2.13. Store Type by Race/Ethnicity of the Household Head

Race/Ethnicity of Household Head	Percentage of Transactions Made at Store Type					
	Supermarkets/ Super Stores	Large/ Medium Grocery	Small Grocery	Convenience	Specialty Food	Other Type
White Non-Hispanic	60.6	3.3	0.9	20.8	0.8	13.6
African American Non-Hispanic	54.8*	4.6*	4.3*	21.9	1.5*	12.9
Hispanic	62.3	8.2*	3.9*	14.0*	1.6*	9.9*
Asian Non-Hispanic	63.8	10.7*	3.3*	5.6*	4.2*	12.5
Native American Non-Hispanic	54.9*	6.3*	›0.8	26.1*	›0.7	11.2*
Other Non-Hispanic [a]	63.5*	4.9*	1.7*	16.7*	1.0*	12.2*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
FNS classifies stores according to 15 types, which are collapsed into the 6 categories shown here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
› Denotes individual estimates not meeting the standards of reliability or precision due to inadequate cell size or large coefficient of variation.
[a] Includes non-Hispanic individuals with multiple reported races (less than 1 percent of all household heads) and individuals of unknown race (16 percent of all household heads).
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households with a higher benefit were more likely to spend it over several transactions than households with a lower benefit and so were more likely to redeem their benefit at more stores. As shown in table 2.14, households with the maximum benefit redeemed it at three times as many stores as households with the minimum benefit (on average, 4.8 stores for households with the maximum benefit versus 1.5 stores for households with the minimum benefit). Almost two-thirds of households receiving $16 or less redeemed their benefit at one store. A similar proportion (63.4 percent) of households receiving more than $500 redeemed their benefit at six or more stores.

Table 2.14. Number of Stores by Size of Benefit

SNAP Benefit	Average Number of Stores	Percentage of Households Redeeming Benefits at Number of Stores						
		1 Store	2 Stores	3 Stores	4 Stores	5 Stores	6–9 Stores	10 or More Stores
$16 or less	1.6	65.8	23.4	6.9	1.7	1.1	›0.6	›0.5
$17–100	2.2*	43.5*	26.9*	14.9*	6.9*	3.8*	3.8*	0.3
$101–200	3.9*	14.9*	19.3*	19.1*	15.2*	10.7*	16.8*	4.0*
$201–300	4.7*	8.5*	14.5*	17.4*	16.6*	12.7*	23.9*	6.4*
$301–400	5.7*	3.7*	9.4*	14.0*	14.7*	14.7*	31.6*	12.0*
$401–500	6.4*	2.8*	6.8*	11.1*	12.7*	14.1*	36.4*	16.0*
$501 or more	7.3*	2.0*	4.5*	7.3	10.6*	12.3*	39.9*	23.5*
Minimum benefit	1.5	66.6	23.6	6.8	1.7	›0.7	›0.2	›0.5
Maximum benefit	4.8*	9.2*	14.2*	16.7*	15.0*	12.2*	24.8*	7.7*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.

* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.

› Denotes individual estimates not meeting the standards of reliability or precision due to inadequate cell size or large coefficient of variation.

Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households with earnings and those with TANF redeemed their benefits at more stores, on average, than households without earnings and those without TANF, respectively (table 2.15). Households with earnings tend to be larger than households without earnings and thus receive a higher benefit and can redeem it at more stores. Similarly, households with TANF tend to be larger than households without TANF and can redeem the generally higher benefit at more stores. Households with long certification periods, which are more likely to have elderly individuals and lower benefits than those with shorter certification periods, redeemed their benefit at fewer stores than those with shorter certification periods.

Table 2.15. Number of Stores Utilized by Presence of Earnings, Receipt of TANF, and Certification Period

Household Characteristic	Average Number of stores	Percentage of Households Redeeming Benefits at Number of Stores						
		1 Store	2 Stores	3 Stores	4 Stores	5 Stores	6–9 Stores	10 or more Stores
Employment status								
Households with earnings	5.0	11.4	13.5	14.5	13.4	11.9	26.0	9.3
Households without earnings	4.2*	19.2*	17.5*	15.6*	12.5*	9.8*	18.5*	6.9*
Receipt of TANF								
Yes	6.3	3.9	8.6	12.6	12.2	13.2	32.5	16.9
No	4.3*	17.4*	16.7*	15.4*	12.8	10.3*	20.2*	7.2*
Months in certification period								
≤ 6 months	5.2	10.0	13.0	14.8	13.5	11.3	26.7	10.7
7–12 months	4.5*	15.8*	15.7*	15.0	12.9	11.0	21.6*	8.0*
> 12 months	3.2*	27.8*	21.8*	16.5*	11.6*	7.9*	11.6*	2.8*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Although households in all regions conducted more of their transactions at supermarkets/super stores than any other type of store, the percentage varied by region (table 2.16). Households in the Northeast conducted the fewest transactions in supermarkets/super stores (53.2 percent). In all other regions except the Mid-Atlantic Region, households conducted more than 57 percent of their transactions in supermarkets/super stores. The next highest category for all regions was convenience stores. Households in the Northeast Region conducted 9 percent of their transactions in large/medium grocery stores—more than in any other region.

Table 2.16. Regional Differences Among Types of Stores Where Participants Spent Their Benefits

Region	Percentage of Transactions Made at Store Type					
	Supermarkets/ Super Stores	Large/ Medium Grocery	Small Grocery	Convenience	Specialty Food	Other Type
Northeast	53.2	9.0	7.3	18.0	2.2	10.4
Mid-Atlantic	55.4	5.4*	7.6	18.8	1.8	11.1
Midwest	57.8*	5.1*	2.3*	21.8*	›0.8	12.2*
Southeast	62.8*	3.7*	0.7*	17.2	1.0*	14.6*
Southwest	61.9*	3.8*	› 0.7	17.8	0.9*	15.0*
Mountain Plains	62.7*	4.4*	0.9*	21.5*	0.8*	9.7
West	61.6*	5.2*	1.1*	19.6	1.4*	11.2

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
FNS classifies stores according to 15 types, which are collapsed into the 6 categories shown here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
› Denotes individual estimates not meeting the standards of reliability or precision as a result of inadequate cell size or large coefficient of variation.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households living in metropolitan areas redeemed their benefits at more stores, on average, than households in micropolitan and noncore areas but still conducted over 60 percent of their transactions at supermarkets/super stores (tables 2.17 and 2.18). Households living in micropolitan areas conducted a smaller percentage of transactions at grocery stores of all sizes than those in metropolitan areas.

Households living in counties with persistent poverty conducted their transactions at more stores, on average, than those not living in such counties. Households living in counties with persistent poverty conducted more of their transactions at large/medium and small grocery stores and specialty food stores than those not living in such counties, who were more likely to redeem benefits at convenience stores and supermarkets/super stores.

Table 2.17. Number of Stores Utilized by Metropolitan Status and Persistence of Poverty

Geographic Location	Average Number of Stores	Percentage of Households Redeeming Benefits at Number of Stores						
		1 Store	2 Stores	3 Stores	4 Stores	5 Stores	6–9 Stores	10 or More
Metro/nonmetro areas[a]								
Metropolitan	4.6	16.0	15.6	14.9	12.9	10.6	21.7	8.4
Nonmetro, micropolitan	3.9*	18.4*	19.4*	16.7*	12.4	10.3	18.3*	4.4*
Nonmetro, noncore	3.6*	22.4*	18.5*	17.5*	12.9	9.5	15.6*	3.6*
County with persistent poverty[a]								
Yes	4.8	14.1	14.9	14.5	13.1	10.3	24.0	9.2
No	4.4*	17.0*	16.3*	15.4	12.8	10.5	20.5*	7.5*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
[a] Excludes households in Guam and the Virgin Islands
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Table 2.18. Differences by Geographic Location Among Types of Stores Where Participants Spent Their Benefits

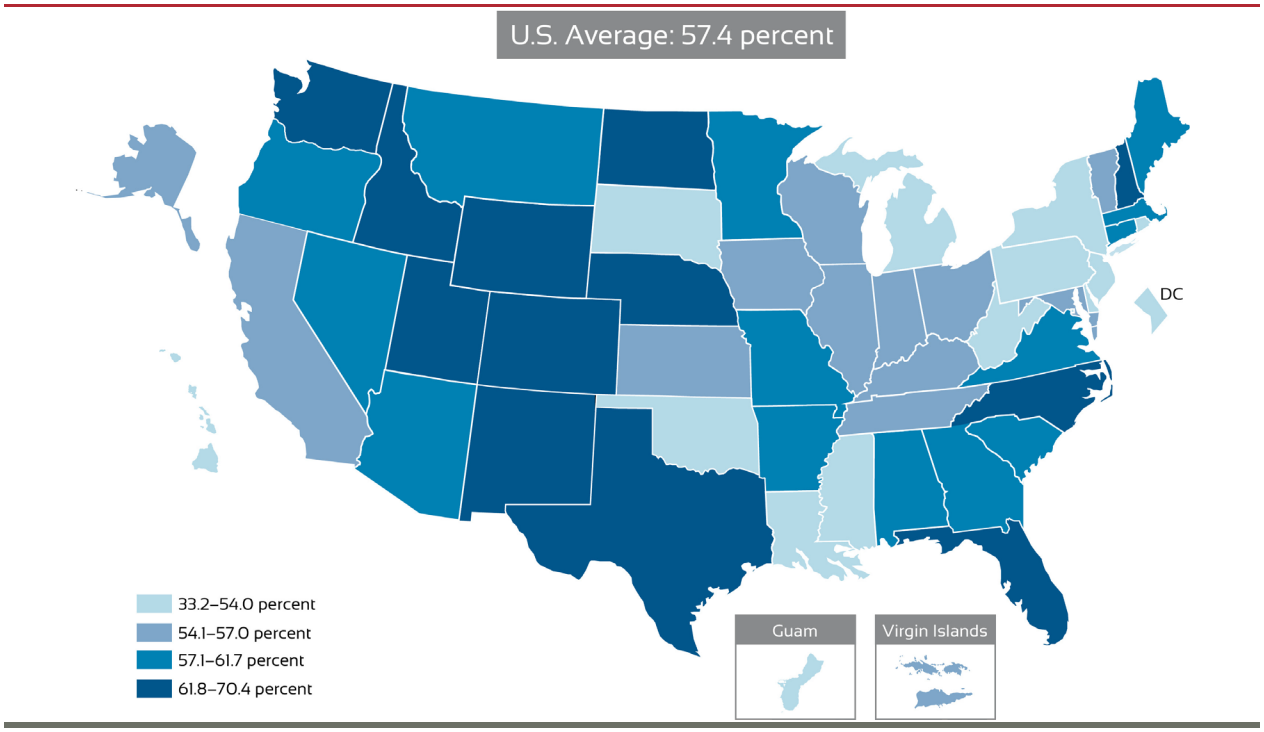
Geographic Location	Percentage of Transactions Made at Store Type					
	Supermarkets/ Super Stores	Large/ Medium Grocery	Small Grocery	Convenience	Specialty Food	Other Type
Metro/nonmetro areas[a]						
Metropolitan	60.1	5.2	2.9	18.6	1.4	11.8
Nonmetro, micropolitan	59.1	4.1*	›0.7	19.9	0.6*	15.6*
Nonmetro, noncore	57.6*	5.6	›0.5	18.8	›0.6	16.9*
County with persistent poverty[a]						
Yes	51.9	8.6	7.5	17.3	2.3	12.4
No	61.2*	4.5*	1.7*	19.0*	1.1*	12.5

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
FNS classifies stores according to 15 types, which are collapsed into the 6 categories shown here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
[a] Excludes households in Guam and the Virgin Islands
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
› Denotes individual estimates not meeting the standards of reliability or precision due to inadequate cell size or large coefficient of variation.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

3. Differences Across States

Table 2.16 above revealed regional variation in the percentage of transactions and dollars redeemed at each of the store types. Figure 2.9 further illustrates the variation by State, showing States with the highest percentages of transactions at supermarkets/super stores crossing the West, Mountain Plains, and Southwest Regions and those with the lowest concentrated in the Mid-Atlantic and Midwest Regions. Only in Guam, New York, and Oklahoma were the percentages of transactions at supermarkets/super stores less than 50 percent (33.2, 44.7, and 49.0 percent, respectively).

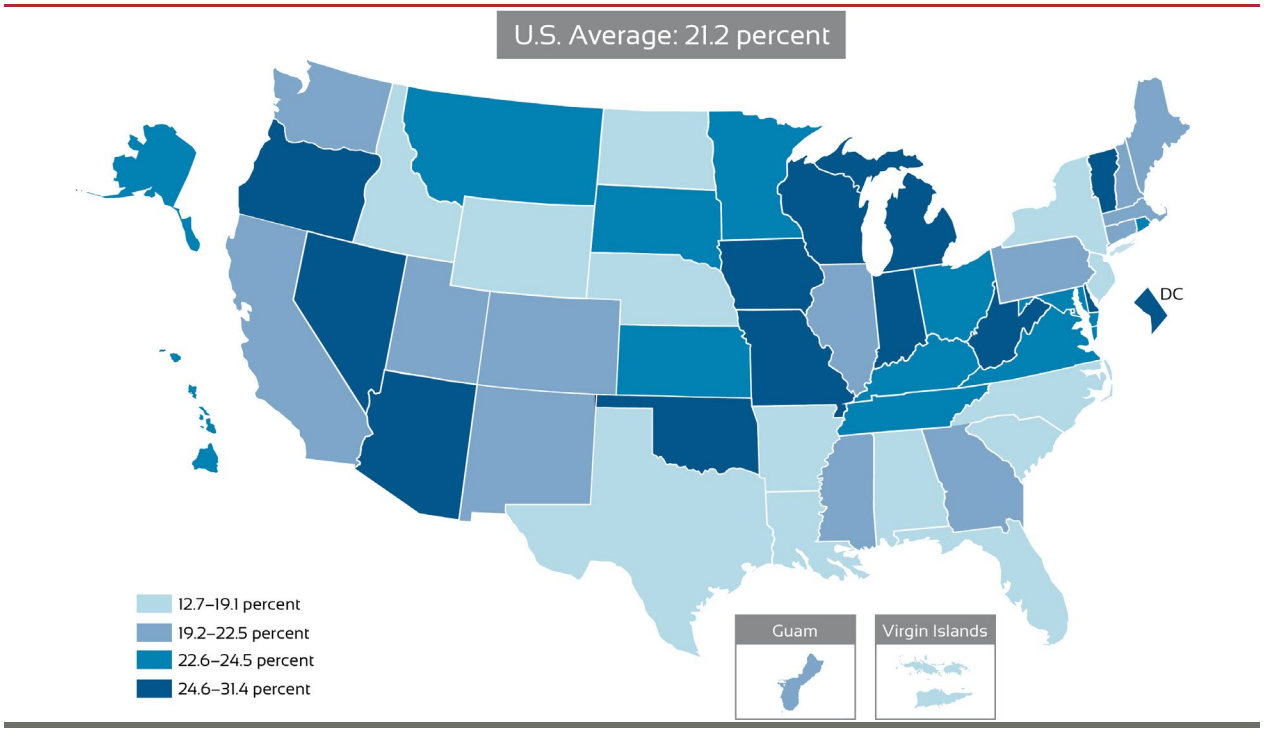
Figure 2.9. Percentage of Transactions at Supermarkets/Super Stores



Source: Insight tabulations of ALERT and STARS data, FY2017. Average monthly statistics

Households in some areas of the country are limited in the types and number of stores where they can redeem their SNAP benefits. Guam, which had the lowest percentage of transactions at supermarkets/super stores also had the lowest percentage of authorized supermarkets/super stores (7.4 percent of authorized stores in Guam are supermarkets/super stores, while the national average is 14.0 percent, appendix G, table G.1). Across all States and territories, convenience stores are the most common type of authorized retailer. Except in Guam, convenience stores follow supermarkets/super stores for the highest number of transactions (in Guam, a larger percentage of transactions are at large and medium grocery stores than at convenience stores, see appendix B, table B.3, though it has a similar percentage of transactions at convenience stores as other States and territories). Figure 2.10 shows the percentage of transactions made at convenience stores, ranging from 12.7 percent in the Virgin Islands to 31.4 percent in Oklahoma.

Figure 2.10. Percentage of Transactions at Convenience Stores

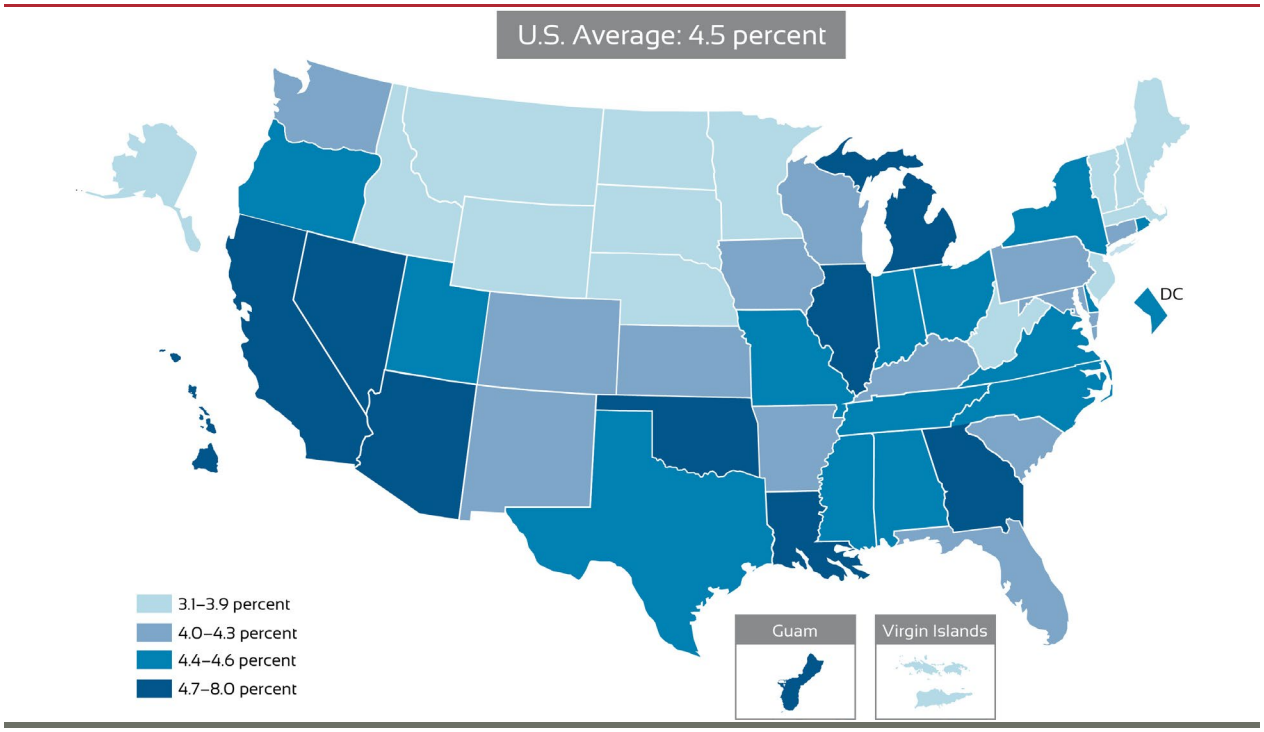


Source: Insight tabulations of ALERT and STARS data, FY 2017

Figure 2.11 displays the average number of stores where households in each State redeem their benefits in a month. Three of the five States with the lowest average are also in the five States with the lowest number of authorized retailers per square mile (Wyoming, Alaska, and North Dakota).[5] Of the five States with the highest average, only Guam is near the top of the distribution for the number of authorized retailers per square mile.

[5] See appendix G, table G.2, for the number of authorized retailers by total land area.

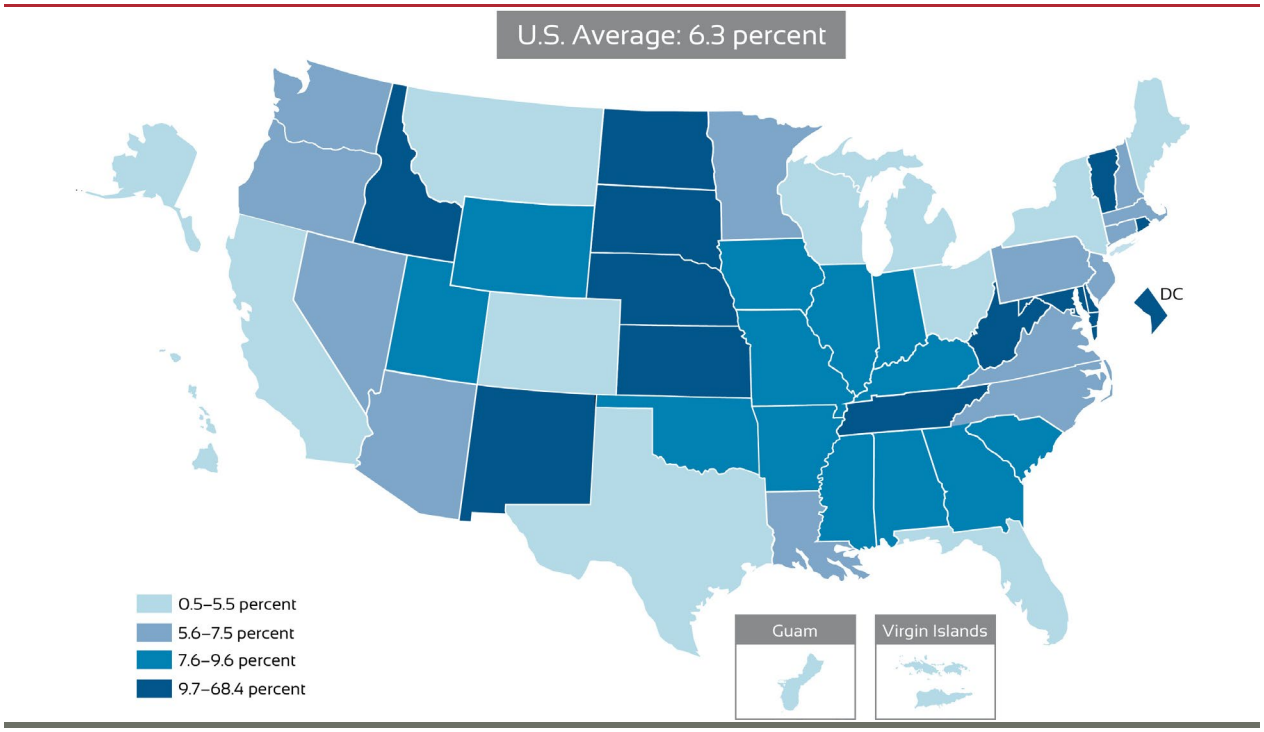
Figure 2.11. Average Number of Stores per Household per Month



Source: Insight tabulations of ALERT and STARS data, FY 2017

Although only 6.3 percent of households redeemed any of their benefits at stores in States different from their State of residence, households from geographically small States were more likely than those from other States to redeem benefits out of State (figure 2.12). Of the States in the top quartile of the percentage of households redeeming their benefits at out-of-State stores, five are among the five smallest States by land area: District of Columbia (68.4 percent), Rhode Island (25.4 percent), Delaware (16.7 percent), Vermont (23.7 percent), and Maryland (11.2 percent). Fewer households from Guam and Alaska redeemed benefits out of State than households from other States (0.5 percent and 2.0 percent, respectively) but those households that did redeemed more than 70 percent of their monthly benefit out of State (appendix B, table B.15). States in the contiguous United States bordering large bodies of water (e.g., California, Florida, Maine, Michigan, Texas, Wisconsin) also tended to have lower percentages of households with out-of-State transactions than inland States.

Figure 2.12. Percentage of Households Making Out-of-State Transactions



Source: Insight tabulations of ALERT and STARS data, FY 2017

Chapter 3. Benefit Exhaustion

Research has shown that households with fewer shopping trips in a month may have less consistent consumption and eat fewer fruits and vegetables during the month (California Department of Health Services, 1998). A critical question is whether households have enough benefits available to enable them to purchase food throughout the month. In FY 2017, about 37 percent of SNAP households received the maximum benefit—the level intended to be sufficient to cover food purchases for the month (Chronquist & Lauffer, 2019). Households not receiving the maximum benefit are expected to supplement their food purchases with their own funds. To examine how much participating households spend each month, and how quickly they do so, the study team used the ALERT monthly Issuance files to measure benefit exhaustion and benefit carryover into the next month, starting from the day the household received its issuance to the day before the next issuance was distributed.

The team measured benefit exhaustion as a cumulative proportion of a household's issuance spent at five points during the issuance month: day 1 (the day of issuance), day 7 (first week), day 14 (second week), day 21 (third week), and the end of the month. The study team presents the proportion of benefits spent at each time period and the distribution of households by the percentage redeemed by days 7 and 14. Also presented here is the proportion of households that reached an account balance of less than $1 by each of the five identified days.

The study team examined benefit carryover using two related measures: the amount of a household's single monthly issuance carried over into the next issuance month (which ignores unspent dollars from previous issuance months) and the household's account balance at the end of the issuance month. The end-of-month account balance reflects the long-run accumulation of unspent issuance dollars. The monthly averages of both measures overall are presented along with the monthly averages broken out by households' total monthly redemption. Also presented here is the distribution of households across the dollar value of both measures.

The key findings follow:

- By day 7 after issuance, households, on average, had redeemed 57 percent of their benefits; by day 14, they had redeemed 78 percent.
- Households with higher benefits redeemed their benefits at a slower rate than those with lower benefits.
- On average, households did not spend $10.72 of their monthly issuance. When including amounts carried over from previous months, households had an average account balance of $25.01 at the end of the month.
- The amount carried over into the next month generally increased in relation to the size of the issuance.

Section A presents the redemption by the five points in the month for households overall and by their benefit issuance. The discussion compares the rates of redemption by characteristics of the households and across States. Section B identifies the amount of issuance a household received but did not spend in the month and the amounts carried over, again across the Nation and by characteristics of households and across individual States.

A. Benefit Redemption by Day of the Month

Most households expend most of their benefits by the end of the month. This section explores how much has been redeemed at points during the month.

1. Benefit Redemption During FY 2017

In an average month during FY 2017, the average SNAP household redeemed 16.5 percent of its benefit on day 1. By days 7 and 14, a household had redeemed 56.7 percent and 77.6 percent of its monthly benefit, respectively. Households redeemed an additional 10.9 percent of their benefit by day 21 (redeeming 89.1 percent of their benefit) and ultimately redeemed 95.9 percent of their monthly benefit by the end of the issuance month.

Table 3.1. Cumulative Proportion of Benefits Redeemed by Day of the Month

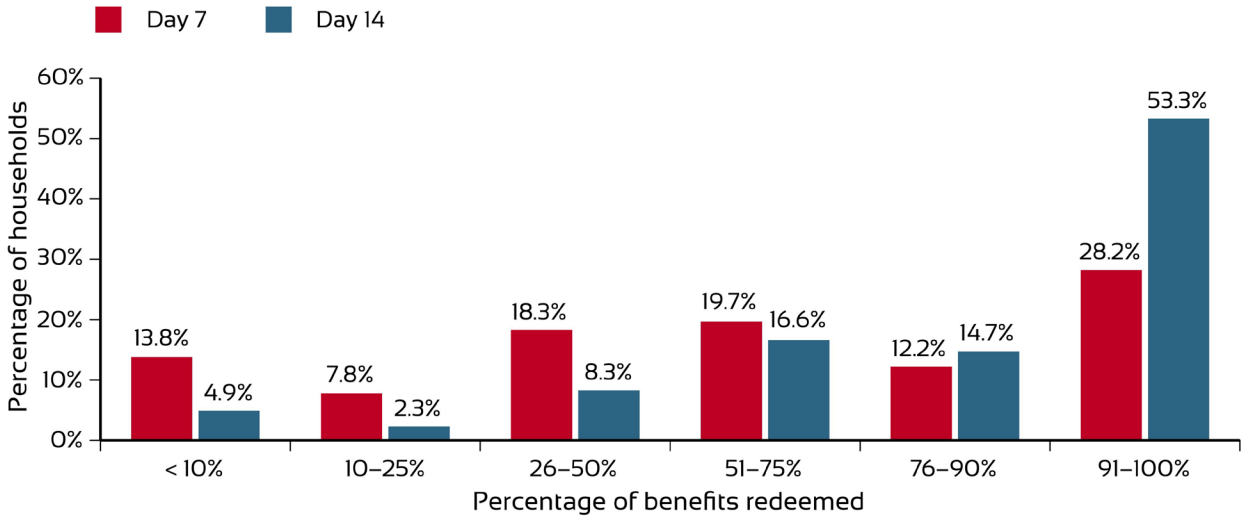
Cumulative Proportion	Day 1	Day 7	Day 14	Day 21	End of Month
Cumulative proportion of benefits redeemed[a]	16.5	56.7	77.6	89.1	95.9
Cumulative proportion of households with balance less than $1	2.2	11.7	22.7	33.2	43.6

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
[a]The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

More than two-fifths (43.6 percent) of participating households reached a balance of less than $1 by the end of the month; more than 10 percent had done so by day 7, more than 20 percent by day 14, and more than 30 percent by day 21 (table 3.1). A small group of households (2.2 percent) reached this balance on the day they received their issuance.

Figure 3.1 shows in the first 7 days after issuance 60.1 percent of households had redeemed between 51 and 100 percent of their benefit, with more than a quarter of households (28.2 percent) redeeming 91 percent or more. By day 14, 84.6 percent of households had redeemed more than half of their benefit, and half (53.3 percent) had redeemed between 91 and 100 percent.

Figure 3.1. Percentage of Benefits Redeemed by Days 7 and 14



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Overall, the proportion of benefits redeemed at each measured point in time varied little with a household's total monthly redemption—households in all redemption amount categories redeemed about 16 to 20 percent of their benefit in the first day, more than half by day 7, more than three-quarters by day 14, and more than 90 percent by day 21 and beyond (table 3.2). However, there are identifiable trends by redemption amount: those in the lower redemption amount categories tended to spend a larger percentage of their benefit by day 7 of the month, but by the end of the month those in the higher redemption categories redeemed more of their benefit. For example, households with benefits below $26 redeemed 62.5 percent of their benefits by day 7, while households receiving more than $500 redeemed the least of any households, at 54.3 percent. By the end of the month, however, households redeeming $25 or less redeemed 94.8 percent of their benefit, while those redeeming over $500 redeemed 96.0 percent.

Table 3.2. Percentage of Benefits Redeemed by Total Monthly Issuance

Total Monthly Issuance	Day 1	Day 7	Day 14	Day 21	End of Month
< $26	17.0	62.5	81.4	90.2	94.8
$26–50	16.7	60.2	78.8	88.1	93.5
$51–100	18.8	64.0	82.2	90.6	95.5
$101–150	17.5	60.6	80.1	90.0	95.8
$151–200	17.0	60.1	80.2	90.2	96.1
$201–250	16.7	57.9	78.2	88.8	95.8
$251–300	15.9	55.7	76.8	88.6	95.7
$301–350	16.7	57.9	79.4	90.5	96.7
$351–400	16.1	56.4	78.0	89.6	96.3
$401–450	16.6	56.0	77.8	89.9	96.6
$451–500	16.1	54.9	76.8	89.3	96.4
> $500	16.4	54.3	75.7	88.4	96.0

Notes: The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Source: Insight tabulations of ALERT and STARS data, FY 2017

2. Differences Across Subgroups

Households with children were less likely to spend nearly all their benefit within the first 7 days of receiving their issuance than those without children; 12.6 percent of households with children had spent between 91 and 100 percent of their issuance, compared with 18.1 percent of households without children (table 3.3). As shown when summing the last three rows, however, households with children were more likely than households without children to spend more than half of their benefit by both day 7 and day 14 of the issuance month (53.8 percent versus 53.3 percent by day 7, and 83.5 percent versus 80.8 percent by day 14 for households with and without children, respectively).

Table 3.3. Benefits Redeemed by Days 7 and 14

Percentage of Benefits Redeemed	Percentage of Households Redeeming Benefits by			
	Day 7		Day 14	
	With Children	Without Children	With Children	Without Children
< 10	7.8	13.0*	2.7	5.1*
10–25	10.6	9.9	2.6	2.8
26–50	27.7	23.8*	11.3	11.2
51–75	27.0	22.5*	24.7	21.7*
76–90	14.2	12.7*	21.2	18.3*
91–100	12.6	18.1*	37.6	40.8*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table rows, relative to the first column in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households with children were also less likely to have an account balance of less than $1 at any measured point during the month than households without children. About twice the percentage of households without children (2.5 percent, compared with 1.2 percent for those with children) had an account balance of less than $1 on the day the issuance was distributed (table 3.4). By day 7, 7.9 percent of households with children had reached such a balance in their account, compared with about 13.4 percent of households without children. By day 14, the proportions reaching a balance below $1 had risen to 18.5 percent and 24.5 percent, respectively. By the end of the month, 44.5 percent of households without children had reached a balance under $1, while 42.7 percent of those with children did so.

Table 3.4. Households With and Without Children Reaching Balance Less Than $1 by Days in the Month

Household Type	Percentage of Households With Balance Less Than $1 by				
	Day 1	Day 7	Day 14	Day 21	End of Month
With children	1.2	7.9	18.5	30.2	42.7
Without children	2.5*	13.4*	24.5*	34.3*	44.5*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Considering other types of household compositions, those with elderly members redeemed their benefit at a slower rate than other types of households. In the first day since issuance, households with elderly members spent an average of 11.0 percent of their issuance, while all other households redeemed more than 13 percent of their benefit (table 3.5). By day 14, households with elderly members redeemed less than 70 percent of their benefit, while households with disabled nonelderly members and those with children and no elderly or disabled members redeemed around three-quarters of their issuance. Table 3.6 shows that households with elderly members more often redeemed 50 percent or less of their benefit by day 7 compared to other household types (summing the first three rows shows that 52.8 percent of households with elderly redeemed less than 50 percent of their benefit by day 7, while less than 48 percent of other households had done so). By day 14, households with elderly individuals were less likely than households with disabled nonelderly members to have redeemed more than 90 percent of their benefit.

Table 3.5. Benefits Redeemed by Day of the Month by Household Type

All Households, by Type	Percentage of Benefits Redeemed by				
	Day 1	Day 7	Day 14	Day 21	End of Month
With elderly individuals	11.0	47.8	69.9	83.3	94.3
With disabled, nonelderly individuals	18.0*	58.5*	78.7*	89.2*	96.8*
With children, no elderly or disabled individuals	13.5*	51.3*	73.4*	86.3*	96.4*
Other households	14.2*	52.8*	73.4*	86.2*	95.4*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Table 3.6. Households Redeeming Benefits by Days 7 and 14 by Household Type

Percentage of Benefits Redeemed	Percentage of Households Redeeming Benefits by							
	Day 7				Day 14			
	With Elderly Individuals	With Disabled, Nonelderly Individuals	With Children, No Elderly or Disabled Individuals	Other Households	With Elderly Individuals	With Disabled, Nonelderly Individuals	With Children, No Elderly or Disabled Individuals	Other Households
< 10	15.2	11.3*	7.5*	11.1*	5.4	4.4	2.6*	4.8
10–25	11.8	7.6*	11.1	9.5*	3.8	1.8*	2.7*	2.4*
26–50	25.8	19.8*	29.2*	24.4	12.9	9.2*	11.6	10.9*
51–75	20.9	23.2*	27.2*	24.8*	24.0	18.0*	26.1	21.4*
76–90	10.7	15.5*	13.8*	13.3*	18.6	17.3	21.7*	19.1
91–100	15.7	22.6*	11.2*	16.9	35.4	49.2*	35.4	41.4*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table rows, relative to the first column in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households in counties with persistent poverty spent less of their benefit at any measured point during the first 21 days after issuance than those in other counties. Households in impoverished counties redeemed 12.0 percent of their benefit on the first day of the issuance month, compared with 14.2 percent in other counties. By day 7 after the issuance, households in counties with persistent poverty had spent 50.3 percent of their benefit on average, whereas households in other counties had spent 52.4 percent (table 3.7). Among households in counties with persistent poverty, 23.3 percent had an account balance below $1 by day 14 after receiving their issuance. In nonimpoverished counties, the proportion of households reaching a balance below $1 by 14 days after issuance was 21.8 percent. However, there was no significant difference in the proportion of households that reached this balance after 21 days or at the end of the month—just over 40 percent of households had less than $1 in their account the day before receiving their next issuance, regardless of poverty in their county.

Table 3.7. Benefits Redeemed by Day of the Month by County Poverty Status

Cumulative Percentages	Day 1	Day 7	Day 14	Day 21	End of Month
Cumulative percentage of benefits redeemed					
County with persistent poverty	12.0	50.3	71.9	85.1	96.4
County without persistent poverty	14.2*	52.4*	73.9*	86.5*	96.0
Cumulative percentage of households with balance less than $1					
County with persistent poverty	1.9	11.9	23.3	33.3	44.7
County without persistent poverty	2.0	11.0	21.8*	32.5	43.6

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
Excludes households in Guam and the Virgin Islands
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households in counties with persistent poverty were also more likely to have spent under 25 percent of their benefits by day 7 or day 14 after the issuance. There was no significant difference by persistent poverty in the likelihood of redeeming more than 90 percent of the issuance after 7 or 14 days (table 3.8).

Table 3.8. Households Redeeming Benefits by Days 7 and 14 by County Poverty Status

Percentage of Benefits Redeemed	Percentage of Households Redeeming Benefits by			
	Day 7		Day 14	
	County With Persistent Poverty	County Without Persistent Poverty	County With Persistent Poverty	County Without Persistent Poverty
< 10	13.4	10.6*	5.7	3.9*
10–25	11.7	10.0*	3.7	2.6*
26–50	24.3	25.6	12.6	11.1
51–75	21.5	24.7*	21.2	23.2*
76–90	12.6	13.4	17.5	19.7*
91–100	16.5	15.7	39.4	39.4

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
Excludes households in Guam and the Virgin Islands
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table rows, relative to the first column in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households with earnings redeemed their benefit at a significantly slower rate during the first 7 days of the issuance month than did those without earnings. Seven days after issuance, households with earnings had redeemed 51.0 percent of their benefit, compared with 53.0 percent redeemed by those without earnings (table 3.9). Table 3.10 shows that households with earnings were more likely to have redeemed between 10 percent and 75 percent of their benefit in the first 7 days and 51 percent and 90 percent by the first 14 days. Households without earnings were more likely than those with earnings to have redeemed very little or nearly all of their benefit in the first 14 days after issuance.

Table 3.9. Benefits Redeemed by Day of the Month by Presence of Earnings

Household Type	Percentage of Benefits Redeemed by				
	Day 1	Day 7	Day 14	Day 21	End of month
Households with earnings	12.8	51.0	73.5	86.7	96.4
Households without earnings	14.7*	53.0*	73.9	86.2	95.8*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A,25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016-December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Table 3.10. Households Redeeming Benefits by Days 7 and 14 by Presence of Earnings

Percentage of Benefits Redeemed	Percentage of Households Redeeming Benefits by			
	Day 7		Day 14	
	With Earnings	Without Earnings	With Earnings	Without Earnings
< 10	8.3	12.0*	2.8	4.7*
10–25	11.1	9.8*	2.7	2.7
26–50	29.0	23.9*	11.3	11.2
51–75	25.5	23.9*	25.4	21.9*
76–90	12.8	13.6	21.0	18.8*
91–100	13.3	16.9*	36.8	40.6*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table rows, relative to the first column in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households receiving TANF redeemed their SNAP benefit at a faster rate than did those not receiving TANF. Table 3.11 shows that at any measured date households with TANF benefits had redeemed a larger percentage of their SNAP benefit than those not receiving TANF. Table 3.12 shows households not receiving TANF were more than twice as likely to redeem less than 10 percent of their benefit during the first 7 days after the issuance than households receiving TANF. By day 14 after the issuance, nearly half of households receiving TANF had redeemed at least 91 percent of their benefits, compared with 39 percent of households not receiving TANF (table 3.12).

Table 3.11. Benefits Redeemed by Day of the Month by Presence of TANF and SNAP Benefit Level

Benefit Receipt Status	Percentage of Benefits Redeemed by				
	Day 1	Day 7	Day 14	Day 21	End of Month
TANF benefit receipt					
Yes	15.4	59.1	80.1	91.1	97.7
No	13.9*	51.6*	73.2*	85.9*	95.9*
SNAP benefit					
Minimum benefit	13.3	50.8	71.9	82.9	91.7
Maximum benefit	13.7	51.8	73.3	86.3*	95.8*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Table 3.12. Households Redeeming Benefits by Days 7 and 14 by Presence of TANF

Percentage of Benefits Redeemed	Percentage of Households Redeeming Benefits by			
	Day 7		Day 14	
	With TANF	Without TANF	With TANF	Without TANF
< 10	3.4	11.2*	›1.0	4.2*
10–25	7.7	10.3*	1.6	2.8*
26–50	24.9	25.5	8.3	11.4*
51–75	30.5	24.1*	22.5	23.0
76–90	18.4	13.0*	19.9	19.5
91–100	15.1	15.8	46.8	39.0*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table rows, relative to the first column in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
› Denotes individual estimates not meeting the standards of reliability or precision due to inadequate cell size or large coefficient of variation.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households receiving the minimum benefit redeemed at a slower rate during the month, relative to those receiving the maximum benefit. Table 3.11 shows on the last day of the issuance month households with the maximum benefit had redeemed 95.8 percent of their benefit, while those receiving the minimum had redeemed 91.7 percent. Table 3.13 shows those receiving the minimum benefit were significantly more likely than those receiving the maximum to have redeemed between 91 percent and 100 percent of their benefit by day 7 and day 14. They were, however, also more than twice as likely to have redeemed less than 10 percent of their benefit by both day 7 and day 14.

Table 3.13. Households Redeeming Benefits by Days 7 and 14 by Size of Benefit

Percentage of Benefits Redeemed	Percentage of Households Redeeming Benefits by			
	Day 7		Day 14	
	Minimum benefit	Maximum benefit	Minimum benefit	Maximum benefit
< 10	20.3	8.7*	7.8	3.2*
10–25	5.5	11.2*	3.1	2.6
26–50	19.0	28.2*	8.1	11.6*
51–75	19.0	25.7*	17.3	26.1*
76–90	8.2	13.0*	11.1	20.6*
91–100	28.0	13.1*	52.6	36.0*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table rows, relative to the first column in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

The rate of exhaustion varied somewhat across both regions and metropolitan locations (table 3.14). Households in the Northeast Region redeemed their benefits more slowly than those in most other regions, at least at some points during the issuance month. Households in the Midwest, Southeast, and Mountain Plains Regions redeemed a larger proportion of their benefits on the first day of the month than in the Northeast Region, where households in the Southwest Region redeemed a smaller proportion. After the first day, households in the Southwest Region continued to redeem their benefits at a slower rate than those in the Northeast Region. Similarly, households in metropolitan areas redeemed their benefits at a slower rate than those in micropolitan and noncore areas in the first 7 days after issuance.

Table 3.14. Households Redeeming Benefits by Days 7 and 14 by Region and Metropolitan Status

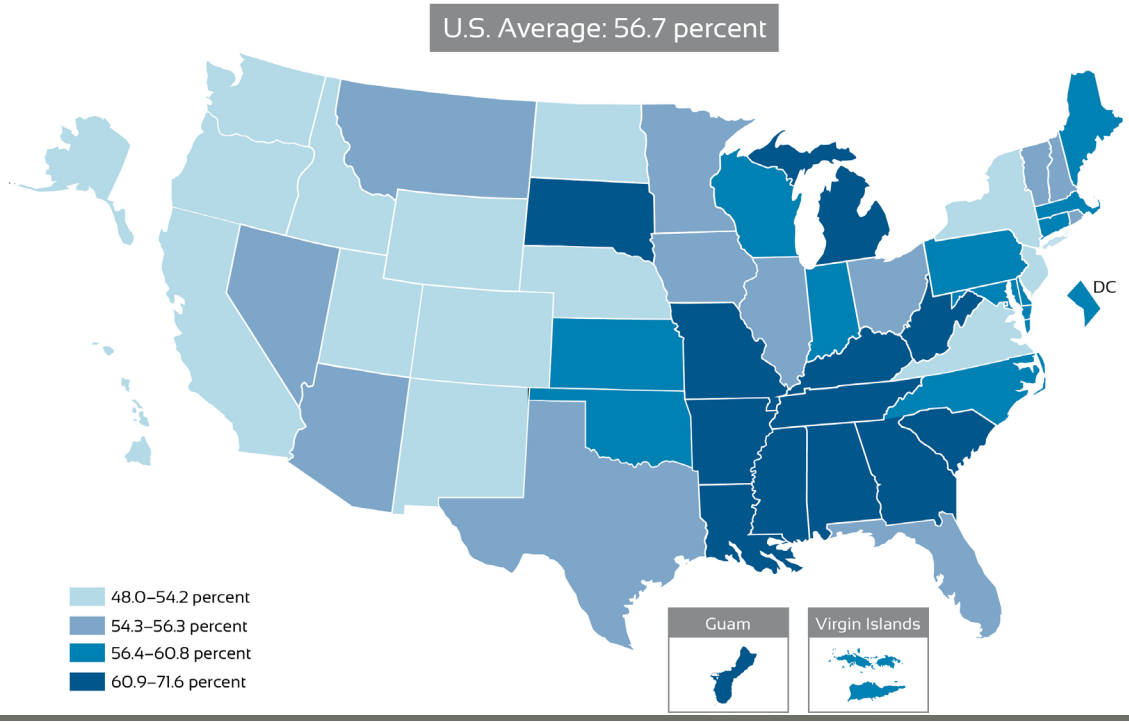
Geographic Location	Percentage of Benefits Redeemed by				
	Day 1	Day 7	Day 14	Day 21	End of month
Region					
Northeast	12.9	53.6	76.1	88.8	96.5
Mid-Atlantic	11.8	53.8	76.3	88.2	96.4
Midwest	18.3*	57.6*	78.0	89.7	96.7
Southeast	16.9*	53.0	73.2*	86.1*	96.3
Southwest	11.0*	42.6*	64.7*	77.8*	94.4*
Mountain Plains	17.3*	56.0	76.8	88.9	96.2
West	11.6	53.3	75.7	88.4	96.2
Metro/nonmetro areas[a]					
Metropolitan	13.4	51.7	73.5	86.2	96.0
Nonmetro, micropolitan	17.0*	54.9*	75.6*	87.3	96.2
Nonmetro, noncore	17.1*	54.1*	73.5	85.7	96.4

Notes: Regions are defined using FNS definitions as of FY 2017.
Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
[a] Excludes households in Guam and the Virgin Islands
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

3. Differences Across States

As illustrated in figure 3.2, the percentage of benefits redeemed by State by Day 7 ranges from 48.0 (Hawaii) to 71.6 (Guam). Many of the States in the top quartile of the percentage of benefits redeemed by day 7 are concentrated in States in the southeast area of the country. With the exception of Guam, States in the western half of the country show slower rates of benefit redemption, on average, than States in the eastern half.

Figure 3.2. Percentage of Benefits Redeemed by Day 7



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Finally, households in most States with the lowest numbers of stores per square mile redeemed their benefits at a slower rate than the national average (table 3.15). Except for South Dakota, households in States with the fewest stores per square mile typically redeemed between 51.9 percent and 55.5 percent of their benefit by day 7 and between 73.8 percent and 75.7 percent by day 14, all less than the national average of 56.7 percent and 77.6 percent by days 7 and 14, respectively. The study team did not find a comparable pattern of higher than average rate of benefit exhaustion, however, in States with the most stores per square mile.

Table 3.15. Percentage of Benefits Redeemed by States With Highest and Lowest Density of Authorized Retailers

State by Store Density	Percentage of Benefits Redeemed				
	Day 1	Day 7	Day 14	Day 21	End of Month
All households	**16.5**	**56.7**	**77.6**	**89.1**	**95.9**
Store density					
Lowest ratio of stores per square mile					
Alaska	13.4	53.8	74.9	86.9	95.4
Wyoming	14.3	51.9	73.8	86.9	95.5
Montana	15.1	55.5	76.6	88.6	95.7
North Dakota	16.1	54.0	75.0	87.3	95.4
South Dakota	20.5	62.6	81.9	91.5	96.3
Highest ratio of stores per square mile					
District of Columbia	18.0	59.8	79.8	90.4	96.2
Guam	14.7	71.6	87.5	94.7	98.4
Rhode Island	14.6	54.5	76.2	88.4	96.2
New Jersey	14.3	53.4	74.8	87.0	96.1
Massachusetts	18.2	58.2	79.1	90.3	96.4

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Source: Insight tabulations of ALERT and STARS data, FY 2017

B. Unspent Issuance and Carryover

As shown in table 3.15, households spend, on average, 95.9 percent of benefits during the month. The remaining 4.1 percent of the benefits are carried over to the next month. This section explores the amount of a given month's benefits not spent at the end of the month and the cumulative amount carried over from month to month.

1. Unspent Issuance and Carryover During FY 2017

In FY 2017, the amount carried over into the next month increased in relation to the size of the issuance; the same was true for a household's monthly ending balance. On average, households did not spend $10.72 of their monthly issuances and had an account balance of $25.01 at the end of the month (table 3.16). The amount carried over correlates with the size of a household's issuance: those with an issuance under $26 carried over just $0.88, while those receiving an issuance of more than $500 had $29.05 left at the end of the month. Similarly, the average balance at the end of the month correlates with the household's issuance amount, ranging from $5.07 for those with issuances under $26 to $53.43 for those with issuances above $500.

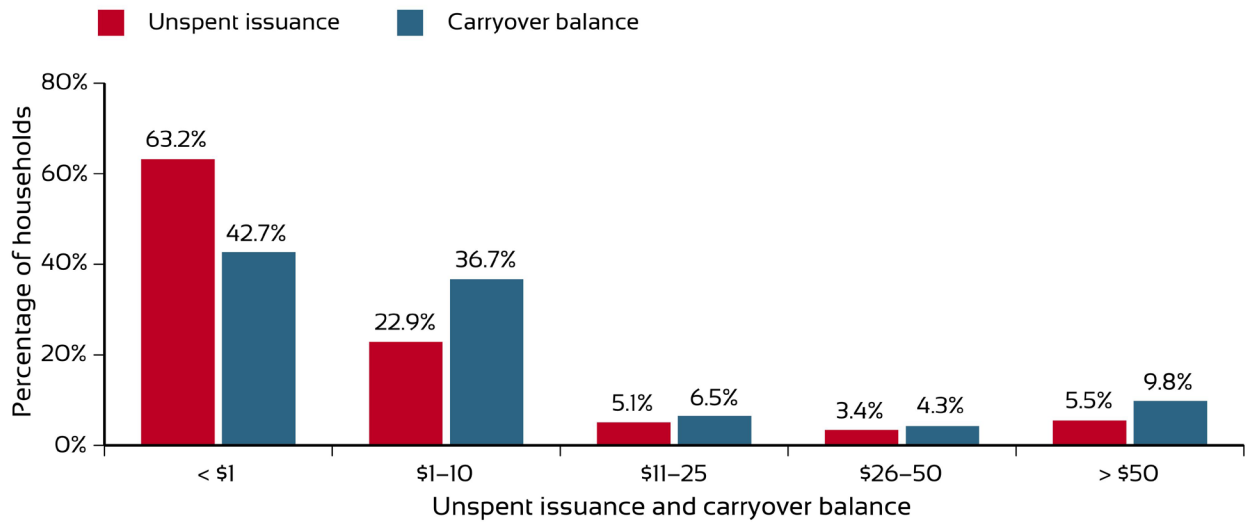
Table 3.16. Value of Unspent Issuance and Account Balance at End of Month

Issuance Amount	Average Unspent Issuance ($)[a]	Average End-of-Month Balance ($)[b]
All households	**10.72**	**25.01**
Households by monthly issuance amount		
< $26	0.88	5.07
$26–50	2.51	7.73
$51–100	3.52	11.04
$101–150	5.27	16.07
$151–200	7.30	21.53
$201–$250	9.61	19.38
$251–300	11.72	23.18
$301–350	10.82	25.84
$351–400	13.53	32.27
$401–450	14.66	30.30
$451–500	17.08	35.57
> $500	29.05	53.43

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
[a] Unspent issuance is the amount of issuance unredeemed each issuance month, taken as the maximum of zero and (issuance minus redemption). This measure ignores unspent issuance from prior months. Issuance months are defined for each household to begin on the household's issuance day.
[b] The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the accumulation of unspent issuance from all prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

The vast majority of households did not carry over more than $10 into the next month or have an account balance greater than $10 at the end of the month. Figure 3.3 shows that over 85 percent of all households carried over $10 or less from their monthly issuance and nearly 80 percent had an account balance at the end of the month of no more than $10. Fewer than 10 percent of households had an ending balance of more than $50.

Figure 3.3. Percentage of Households by Amount of Unspent Issuance and Carryover Balance



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Unspent issuance is the amount unredeemed each issuance month, taken as the maximum of zero and (issuance minus redemption). This measure ignores unspent issuance from prior months. For each household, issuance months are defined to begin on the household's issuance day.
The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the accumulation of unspent issuance from all prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

2. Differences Across Subgroups

Table 3.17 shows households with children carried over more of their issuance into the next month than households without children ($13.81 compared with $7.53) and had larger account balances at the end of the month ($37.66 compared with $21.69).

Households with disabled nonelderly members had less unspent issuance and smaller end-of-month balances than households with elderly members. In contrast, households with children and without elderly or disabled members had larger unspent issuances and end-of-month balances than households with elderly members. Households with elderly members had an average of $7.83 in unspent issuance, while households with disabled nonelderly members had an average of $6.31 unspent, and households with children and without elderly or disabled members had an average of $14.74 unspent.

When households received higher SNAP benefits, they carried over increasingly larger amounts, and had larger account balances at the end of the month. Table 3.17 shows those receiving the maximum SNAP benefit carried over $11.67 compared with $1.56 for those receiving the minimum benefit. Similarly, households with the maximum benefit had an account balance at the end of the month more than 10 times that of households receiving the minimum benefit ($33.49 versus $3.06). The amount carried over by SNAP benefit categories ranged from $1.66 for those receiving $16 or less to $20.21 for those receiving more than $500 each month. Account balances at the end of the month ranged from $4.61 for those receiving $16 or less to $59.64 for those receiving more than $500.

Larger households also carried over significantly larger amounts and had larger account balances at the end of the month relative to one-person households. An average household of one person carried over $7.47 from issuance in an average month and had an end-of-the-month account balance of $21.18 (table 3.17). The largest households (those of four or more individuals) carried over $16.89 and had an end-of-the-month account balance of $47.97.

Table 3.17. Unspent Issuance and End-of-Month Balance by Household Type

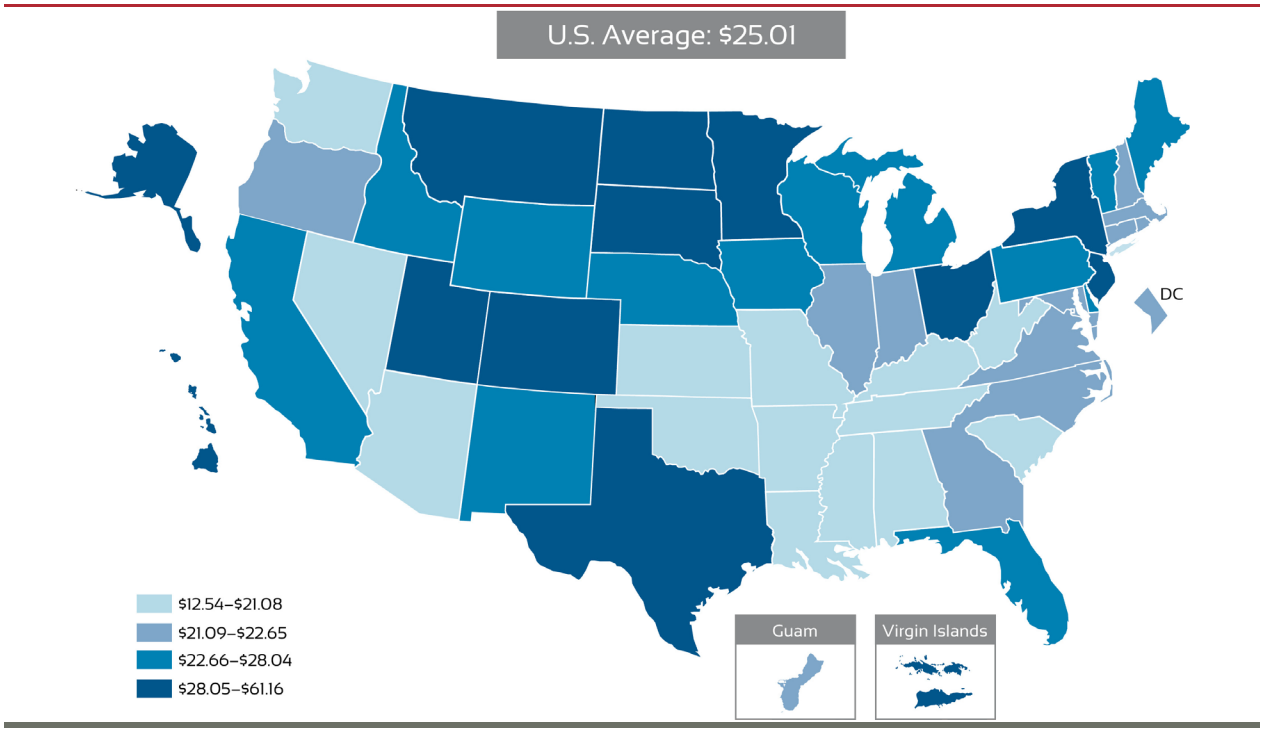
Household Characteristic	Average Unspent Issuance ($)[a]	Average End-of-Month Balance ($)[b]
With and without children		
Households with children	13.81	37.66
Households without children	7.53*	21.69*
All households, by type		
With elderly individuals	7.83	26.80
With disabled, nonelderly individuals	6.31*	17.50*
With children, no elderly or disabled individuals	14.74*	40.54*
Other households	8.80	20.18*
SNAP benefit		
$16 or less	1.66	4.61
$17–100	4.29*	10.42*
$101–200	8.04*	23.70*
$201–300	11.00*	25.84*
$301–400	13.14*	35.45*
$401–500	16.06*	44.51*
$501 or more	20.21*	59.64*
Minimum benefit	1.56	3.06
Maximum benefit	11.67*	33.49*
Household size		
1	7.47	21.18
2	10.08*	27.61*
3	13.34*	35.85*
4+	16.89*	47.97*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
[a] Unspent issuance is the amount of issuance unredeemed each month, taken as the maximum of zero and (issuance redemption). This measure ignores unspent issuance from prior months. Issuance months are defined for each household to begin on their issuance day.
[b] The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the long-run accumulation of unspent issuance from all prior months.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

3. Differences Across States

The average value of benefits carried over for various States ranged from $6.34 to $19.81, with a national average of $10.72 (appendix B, table B.19). Average monthly ending account balances in the States ranged from $12.54 (Arkansas) to $61.16 (Hawaii), in comparison to $25.01 for the Nation (figure 3.4).

Figure 3.4. Average Monthly Ending Balance



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the accumulation of unspent issuance from all prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Across States, those with the fewest authorized retailers per square mile had above average values of both monthly carryover and monthly ending balance, with the exception of South Dakota's unspent issuance (table 3.18). In States with the highest number of stores per square mile, the average unspent issuance and end-of-month balance were below the national average, with the exception of New Jersey's end-of-month balance.

Table 3.18. Average Unspent Issuance and End-of-Month Balance by Density of Stores per Square Mile

State by Store Density	Average Unspent Issuance ($)[a]	Average End-of-Month Balance ($)[b]
Total United States	**10.72**	**25.01**
Store density		
Lowest ratio of stores per square mile		
Alaska	19.81	36.12
Montana	11.30	30.88
North Dakota	12.15	42.75
South Dakota	10.66	33.79
Highest ratio of stores per square mile		
District of Columbia	9.35	21.44
Guam	9.59	22.02
Rhode Island	8.85	22.22
New Jersey	9.24	28.69
Massachusetts	8.18	21.69

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
[a] Unspent issuance is the amount of issuance unredeemed each issuance month, taken as the maximum of zero and (issuance minus redemption). This measure ignores unspent issuance from prior months. Issuance months for each household are defined to begin on the household's issuance day.
[b] The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the accumulation of unspent issuance from all prior months.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Chapter 4. Inactivity

Households are considered to be inactive in a particular month if they received an issuance but made no purchase transactions. By using this definition, the study team identified whether households actively receiving monthly benefits opted to abstain from redeeming benefits for a month or more and explore how often they do so and for how long. The team also identified whether there was variation in the rates of inactivity across households' monthly redemptions.

ALERT does not contain data on benefit issuances in the absence of a redemption, so the study team used the ALERT Monthly Issuance file to impute issuances made in months without redemptions. The team first identified months when individual households did not make any transactions. If the transactions for a later month indicated a benefit issuance that appeared approximately twice as large (or larger) than the benefit before the break in participation and the subsequent month for that household, the team coded the household as inactive during the month without redemptions. If the benefit was three times the benefit amount received prior to or subsequent to the break and the household had at least 2 months without redemptions, the team identified the household as missing 2 months; if it was four times as large, the household was identified as missing 3 months, and so on.

The key findings follow:

- During the year, 6.2 percent of households had at least 1 month when they received an issuance but did not make a purchase transaction.
- The rate of inactivity was tied largely to the size of a household's SNAP benefit; more than 30 percent of households with monthly redemptions less than or equal to $25 were inactive at some point during the year.

This chapter presents the patterns of inactivity nationally and comparisons across household characteristics and States.

A. Prevalence of Transaction Inactivity During FY 2017

During 2017, the percentage of all households identified as having received an issuance in a month but not making a transaction in that month was 6.2 percent (table 4.1). Of those households that posted months of inactivity, the majority were inactive for only 1 month of 12. Only 0.9 percent of all households had 2 months of inactivity, and 0.5 percent were inactive for more than 2 months in the year. Similarly, only 0.6 percent of households had consecutive months in which benefits were received but no transaction purchases were made.

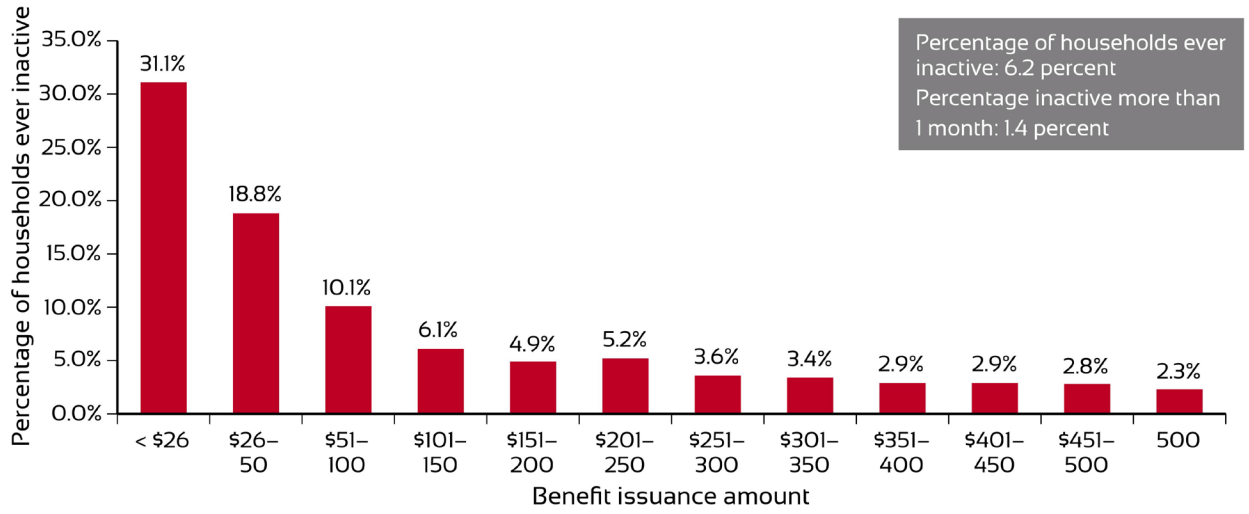
Table 4.1. Prevalence of Inactivity During FY 2017

Percentage of Households by Activity	Percentage of Households
Percentage of households ever inactive	6.2
Percentage of households with consecutive months of inactivity	0.6
Percentage of households by number of months of inactivity	
0	93.8
1	4.8
2	0.9
More than 2	0.5

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
Households were identified as ever inactive if, during any month, an issuance was received but no purchase transactions were made.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Households with smaller issuances were more likely to be inactive during the year. More than 30 percent of households with a monthly issuance less than $26 were inactive at some point during the year, and 18.8 percent of households with an issuance between $26 and $50 were ever inactive. Figure 4.1 shows the rate of inactivity steadily declined as the issuance amount increased; only 2.3 percent of those with an issuance greater than $500 were inactive during the year.

Figure 4.1. Percentage of Households Ever Inactive by Benefit Issuance Amount



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
Households are identified as ever inactive if, during any month, an issuance was received but no purchase transactions were made.
Source: Insight tabulations of ALERT and STARS data, FY 2017

B. Differences Across Subgroups

As with the full SNAP population, the rate of inactivity was tied largely to the size of a household's benefit. Those with smaller SNAP monthly redemption totals—including households without earnings,

those not receiving TANF benefits, and those with longer certification periods—were more likely to be inactive at some point during the fiscal year. Table 4.2 shows 4.8 percent of households without earnings and 4.4 percent of those without TANF benefits were inactive for at least 1 month during the year. Significantly more households receiving the minimum SNAP benefit were inactive during the year (20.3 percent) relative to households receiving the maximum benefit (2.0 percent). Similarly, those households with certification periods between 7 and 12 months and longer than 12 months were nearly twice and three times as likely to be inactive as those with certification periods under 6 months, respectively.

Table 4.2. Prevalence of Inactivity by Presence of Income Types, Benefit Size, and Certification Period

Household Characteristic	Percentage of Households Ever Inactive	Percentage of Households With Consecutive Months of Inactivity	Percentage of Households by Number of Months of Inactivity		
			0 Months	1 Month	More Than 1 Month
Employment status					
Households with earnings	2.9	›0.1	97.1	2.6	0.2
Households without earnings	4.8*	0.4*	95.2*	3.9*	0.9*
Receipt of TANF					
Yes	› 1.0	0.0.	› 99.0	› 1.0	–
No	4.4*	0.4*	95.6*	3.6*	0.7*
SNAP benefit					
$16 or less	20.8	3.7	79.2	13.6	7.2
$17–100	10.1*	0.6*	89.9*	8.1*	1.9*
$101–200	2.9*	0.2*	97.1*	2.7*	0.2*
$201–300	3.1*	–	96.9*	3.0*	› 0.1
$301–400	1.7*	–	98.3*	1.7*	–
$401–500	0.7*	› 0.2	99.3*	› 0.5	› 0.2
$501 or more	1.2*	–	98.8*	1.2*	–
Minimum benefit	20.3	3.9	79.7	13.3	7.1
Maximum benefit	2.0*	› 0.2	98.0*	1.8*	› 0.2
Months in certification period					
≤ 6 months	2.4	› 0.1	97.6	2.3	› 0.1
7–12 months	4.0*	0.3*	96.0*	3.3*	0.6*
> 12 months	6.9*	0.8*	93.1*	5.4*	1.5*

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Households are identified as ever inactive if, during any month, issuance was received but no purchase transactions were made.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
› Denotes individual estimates not meeting the standards of reliability or precision due to inadequate cell size or large coefficient of variation
- Value too small to display
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Smaller households and households without children were more likely to be inactive at some point during the year. Households of one individual were more than twice as likely to be inactive than households of three or more people (table 4.3). Households without children were more than twice as likely to be inactive relative to those with children present and also were more likely to have more than 1 month and consecutive months of inactivity. Households with elderly members were more likely to be inactive than other types.

Table 4.3. Prevalence of Inactivity by Household Size and Composition

Household Composition	Percentage of Households Ever Inactive	Percentage of Households With Consecutive Months of Inactivity	Percentage of Households by Number of Months of Inactivity		
			0 Months	1 Month	More Than 1 Month
With and without children					
Households with children	1.9	0.1	98.1	1.7	0.1
Households without children	5.9*	0.5*	94.1*	4.8*	1.1*
Types of households with children					
Single-adult households	2.0	› 0.2	98.0	1.8	› 0.2
Multiple-adult households	1.6	› 0.1	98.4	1.5	› 0.1
Children only	1.6	–	98.4	1.6	–
All households, by type					
With elderly individuals	8.1	0.8	91.9	6.3	1.8
With disabled, nonelderly individuals	4.5*	0.3*	95.5*	3.7*	0.8*
With children, no elderly or disabled individuals	1.9*	› 0.1	98.1*	1.8*	›0.1
Other households	3.3*	› 0.2	96.7*	3.0*	0.3*
Household size					
1	5.8	0.5	94.2	4.8	1.1
2	3.6*	0.3	96.4*	3.0*	0.6*
3	1.7*	–	98.3*	1.7*	–
4+	1.3*	› 0.1	98.7*	1.2*	› 0.1

Notes: Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Households are identified as ever inactive if, during any month, issuance was received but no purchase transactions were made.
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
› Denotes individual estimates not meeting the standards of reliability or precision due to inadequate cell size or large coefficient of variation.
- Value too small to display.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

While there were some differences among total monthly redemption by race/ethnicity of the household head and household location (see chapter 2), there was less variation in the rate of inactivity during the year among these subgroups. Households headed by non-Hispanic African-American and Hispanic individuals were less likely to be inactive relative to households headed by non-Hispanic White

individuals (table 4.4). There were no significant differences in the percentage of households that were ever inactive by region or urbanicity. Households in counties with persistent poverty were less likely to be inactive than households in counties without persistent poverty.

Table 4.4. Prevalence of Inactivity by Race/Ethnicity and Household Location

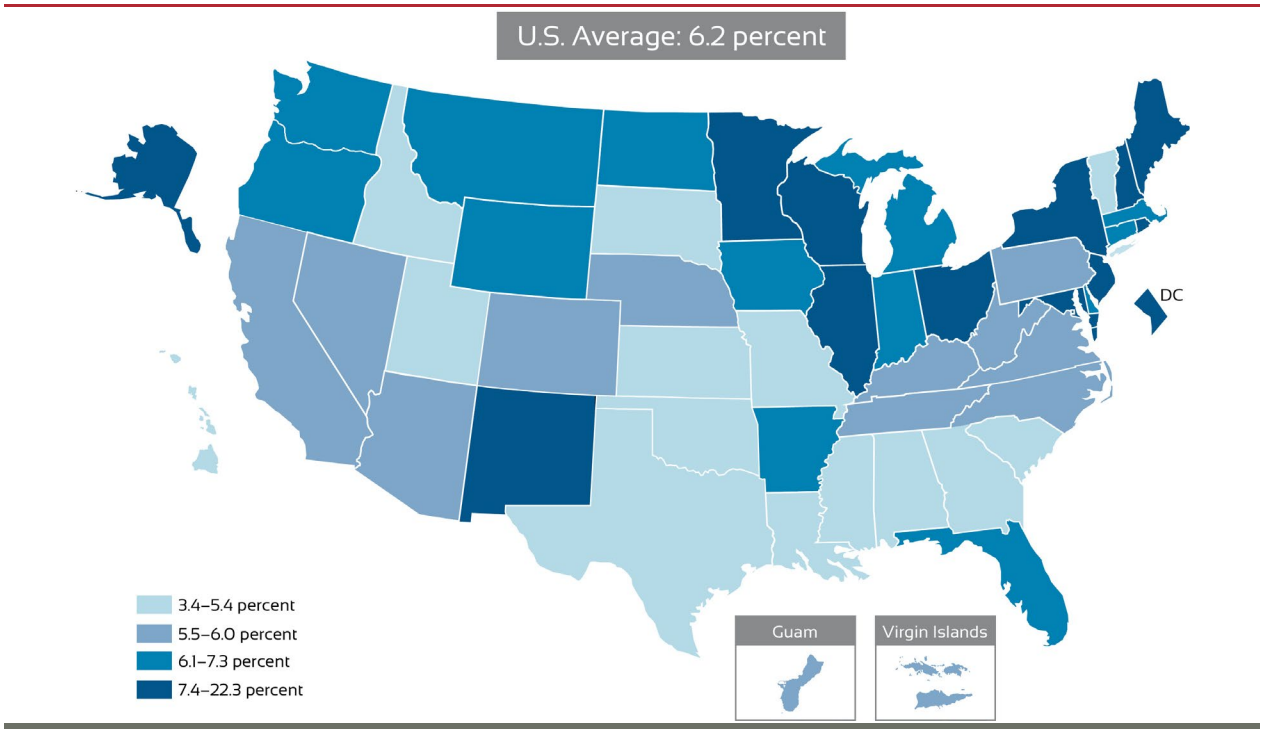
Household Characteristic	Percentage of Households Ever Inactive	Percentage of Households With Consecutive Months of Inactivity	Percentage of Households by Number of Months of Inactivity		
			0 Months	1 Month	More Than 1 Month
Race/ethnicity of household head					
White Non-Hispanic	5.2	0.5	94.8	4.2	1.0
African American Non-Hispanic	3.4*	›0.2	96.6*	2.9*	0.4*
Hispanic	3.2*	›0.3	96.8*	2.8*	› 0.4
Asian Non-Hispanic	4.6	›0.5	95.4	3.6	› 1.0
Native American Non-Hispanic	3.6	›0.2	96.4	3.2	› 0.3
Other Non-Hispanic [a]	3.9*	›0.2	96.1*	3.4	0.5*
Region					
Northeast	3.7	0.6	96.3	2.8	0.9
Mid-Atlantic	4.2	›0.2	95.8	3.6	0.6
Midwest	5.0	›0.4	95.0	4.2*	0.8
Southeast	4.2	0.4	95.8	3.5	0.8
Southwest	3.8	› 0.1	96.2	3.5	› 0.3
Mountain Plains	4.0	› 0.2	96.0	3.2	0.8
West	4.3	0.4	95.7	3.7	0.6
Metro/nonmetro areas[b]					
Metropolitan	4.1	0.4	95.9	3.4	0.7
Nonmetro, micropolitan	3.7	› 0.1	96.3	3.3	0.4*
Nonmetro, noncore	4.8	› 0.3	95.2	4.0	0.7
County with persistent poverty[b]					
Yes	2.9	› 0.1	97.1	2.6	› 0.3
No	4.3*	0.4*	95.7*	3.6*	0.7*

Notes: Regions are defined using FNS definitions as of FY 2017.
Matched sample excludes the following States: Delaware, Michigan, and Ohio. Also excludes Virgin Islands transactions in September 2017 when the Virgin Islands experienced two category 5 hurricanes (Irma and Maria) that greatly disrupted food availability and commerce. Household-level EBT statistics are calculated as average monthly statistics over the 3 months centered on the QC sample month. See table A.25 for sample sizes.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2016 to December 2017.
Households are identified as ever inactive if, during any month, issuance was received but no purchase transactions were made.
[a] Includes non-Hispanic individuals with multiple reported races (less than 1 percent of all household heads) and individuals of unknown race (16 percent of all household heads).
[b] Excludes households in Guam and the Virgin Islands
* Denotes statistically significant difference in means and proportions (.05 level). Comparisons are made within table columns, relative to the first row in each subgroup category. The Bonferroni adjustment was used to control for multiplicity in the number of tests when household subgroups contain more than two categories.
› Denotes individual estimates not meeting the standards of reliability or precision due to inadequate cell size or large coefficient of variation.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

C. Differences Across States

The rate of inactivity by State ranged from 3.4 percent (Hawaii) to 22.3 percent (Alaska) of households (figure 4.2). Across all States, however, most households with some period of inactivity were inactive for only 1 month during the year (appendix B, table B.24).

Figure 4.2. Percentage of Households Ever Inactive in FY 2017



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
Households are identified as ever inactive if, during any month, issuance was received but no purchase transactions were made.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Chapter 5. Change Across Years

Several factors caution against comparing results from FY 2017 with those from FY 2009 (Castner & Henke, 2011) and FY 2003 (Cole & Lee, 2005). First, in 2003, not all States had converted fully to issuing benefits through the EBT system and were represented in the 2003 findings only for certain months or specific areas within the States. Second, as described in appendix F, State issuance schedules have expanded across the calendar month, making it increasingly difficult to impute the benefit issuance day for each household without complete data to identify it. Third, at the time of the benefit increase in mid-FY 2009 resulting from the American Recovery and Reinvestment Act, food prices were returning to pre-2008 levels. The maximum benefit was 14 to 16 percent higher than the cost of the Thrifty Food Plan (TFP), which aligns with the maximum benefit (table 5.1, negative differences indicate the maximum benefit was higher than the TFP). This third factor led the study team in Castner & Henke (2011) to conduct analyses across time using the 6-month averages in the first half of FY 2009 rather than the full fiscal year averages, recognizing household food purchasing behavior may be different when households have relatively higher benefits. The study team follows the same rationale for this report: comparing the new full FY 2017 results with results from the first half of FY 2009 and the full year of FY 2003.

Table 5.1. Comparison of TFP and Maximum SNAP Benefit Across FY 2003, FY 2009, and FY 2017, Family Size of Four

Month	FY 2003		FY 2009		FY 2017	
	TFP	Difference From Maximum Benefit[b]	TFP	Difference From Maximum Benefit[b]	TFP	Difference From Maximum Benefit[b]
	($)[a]	(Percent)	($)[a]	(Percent)	($)[a]	(Percent)
October	461.90	0.7	606.20	-3.0	640.70	1.3
November	461.90	0.7	604.90	-2.8	636.40	1.9
December	464.10	0.2	600.80	-2.1	635.20	2.1
January	466.70	-0.4	602.50	-2.4	636.70	1.9
February	466.70	-0.4	594.30	-1.1	638.10	1.7
March	467.10	-0.4	588.70	-0.1	638.50	1.6
April	466.70	-0.4	585.20	14.1	642.20	1.0
May	469.80	-1.0	583.90	14.4	643.80	0.8
June	471.80	-1.4	583.40	14.5	640.80	1.3
July	473.70	-1.8	581.10	15.0	642.50	1.0
August	475.80	-2.3	577.00	15.8	642.50	1.0
September	477.00	-2.5	576.40	15.9	642.70	1.0
Average (FY)	468.60	-0.8	590.37	6.4	640.01	1.4
Average (Oct–Mar)	464.73	0.1	599.57	-1.9	637.60	1.8
Average (April–Sept)	472.47	-1.6	581.17	14.9	642.42	1.0

[a] TFP reported for family of four: couple aged 19–50 and children aged 6–8 and 9–11
[b] Maximum SNAP benefit for family of four in continental United States. FY 2003: $465; October 2008–March 2009: $588, April–September 2009: $668; FY 2017: $649
Source: TFP: Downloaded from https://www.fns.usda.gov/cnpp/usda-food-plans-cost-food-reports-monthly-reports

The key findings follow:

- Across the three study periods, the average number of transactions has been going up and the adjusted average dollar value of the transactions has been going down.
- The overall pattern of redemption remained the same: most participants redeemed their benefits from 2 to 10 times per month and spent $25 or less per transaction.
- The rate of benefit exhaustion seen in 2017 is slower than 2009 and 2003, and households carry over a larger percentage of their benefit issuance from 1 month to the next.
- With the large increase in the number of authorized convenience stores, households conducted more transactions and redeemed a larger share of benefits at convenience stores in 2017 than in 2009, although supermarkets/super stores still accounted for over 80 percent of dollars redeemed.
- Most patterns across subgroups were consistent over measured years. Notable exceptions were a decline in the percentage of households that redeemed benefits exclusively at supermarkets/super stores in micropolitan areas and a more pronounced slowing of benefit exhaustion among households living in counties with persistent poverty in 2017.

This chapter compares measures discussed in previous chapters across the three study periods. Section A presents patterns of the overarching measures of average numbers of transactions, amounts, and store types. Section B provides the patterns of spending by day of the month and amounts carried over across months.

In addition to national trends, this chapter presents trends over time for key subgroups: households with children, households with elderly and disabled members, households with earnings, and households living in counties with persistent poverty. These subgroup analyses focus primarily on redemption patterns that differ from national trends.

A. Household Redemption

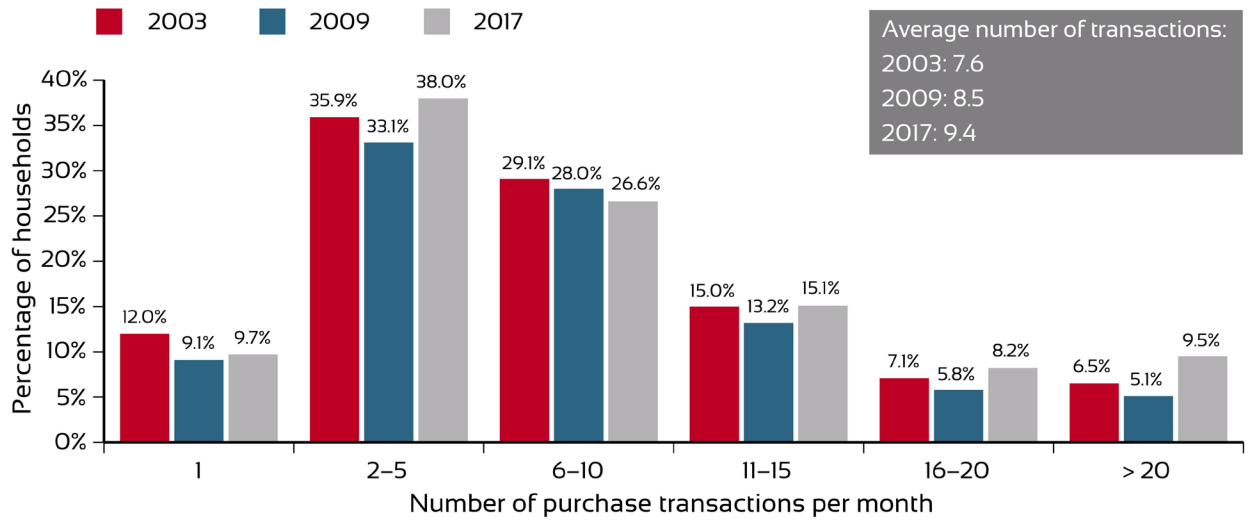
From 2003 to 2017, the average household made more transactions with its benefit but spent less per trip in inflation-adjusted dollars (table 5.2). The average number of monthly transactions per household increased 23.6 percent from FY 2003 to FY 2017, from 7.6 to 9.4; the average transaction amount decreased by nearly $7 in this time period, a decrease of 20.0 percent. Overall, the average total monthly redemption decreased by 1.9 percent, from $261 in FY2003 to $256 in FY 2017 (in FY 2017 dollars), despite an increase to $277 in the first half of FY 2009. Across all study periods, the majority of participating households still redeemed their benefits from 2 to 10 times per month (63.9 percent in 2003, 62.2 percent in 2009, and 57.4 percent in 2017), although in 2017 more households averaged 11 or more transactions than in previous years (figure 5.1). Also across all study periods, most households averaged $25 or less (in nominal dollars) per transaction (figure 5.2).

Table 5.2. Average Number of Transactions and Amounts: 2003, 2009, and 2017

Number of Transactions	2003	2009	2017
Average number of transactions per household	7.6	8.5	9.4
Average transaction amount[a]	$34.22	$32.70	$27.36
Monthly household total redemption amount[a]	$261	$277	$256

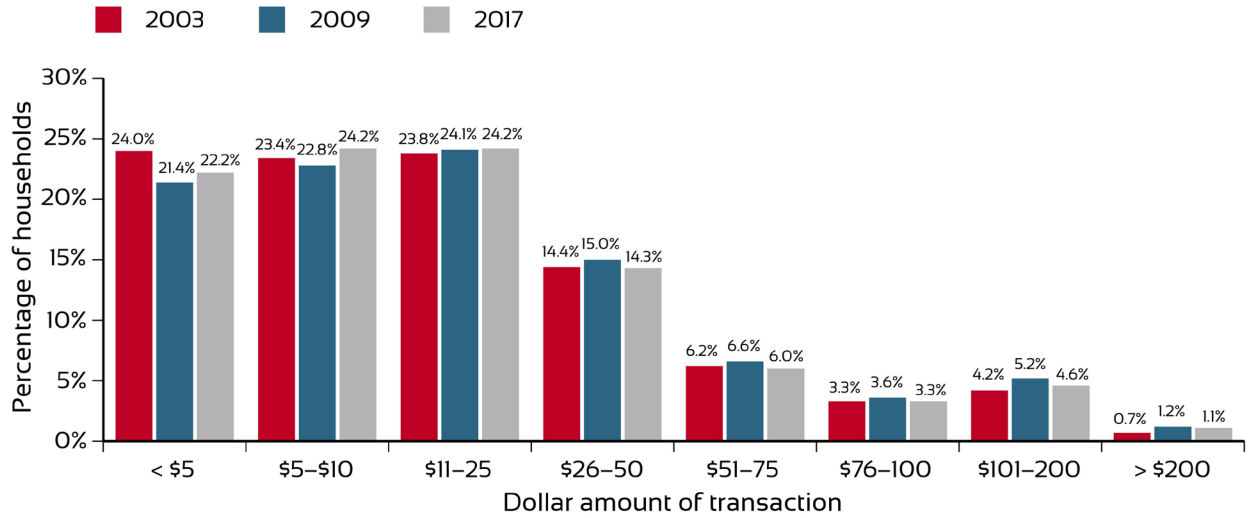
[a]Dollar values for FY 2003 and the first half of FY 2009 converted to FY 2017 dollars using Consumer Price Index values for food at home for FY 2003, the first 6 months of FY 2009, and FY 2017.
Source: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of ALERT and STARTS data, FY 2017

Figure 5.1. Percentage of Households by Average Monthly Number of Transactions: 2003, 2009, and 2017



Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of FY 2017 ALERT and STARS data

Figure 5.2. Distribution of Transactions by Dollar Amount: 2003, 2009, and 2017



Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017 Insight tabulations of FY 2009 ALERT and STARS data

From 2003 to 2017, the relationship between the average number of transactions made by different key types of households remained the same. For example, in all years measured, households with children made more transactions than households without children (table 5.3). Households with elderly members made the fewest transactions in any measured year. Across time, households with earnings and households in counties with persistent poverty made more transactions than those without earnings and those in counties without persistent poverty, respectively. Although these patterns were consistent across time, the gap between subgroups was widest in 2017. For example, in 2003 and the first half of 2009, households in counties with persistent poverty made 0.6 more transactions than households in other counties. In 2017, the difference was almost three times larger, 1.5 transactions per month.

Table 5.3. Average Number of Transactions by Subgroup: 2003, 2009, and 2017

Household Characteristic	2003	2009	2017
With and without children			
Households with children	9.7	10.8	12.6
Households without children	5.2	6.1	6.9
All households, by type			
With elderly	4.6	5.4	5.8
With disabled, nonelderly	6.1	6.7	7.5
With children, no elderly or disabled	10.0	11.1	12.8
Other households	7.1	7.6	9.0
Employment status			
Households with earnings	8.6	9.8	10.7
Households without earnings	7.2	7.9	8.6
County with persistent poverty			
Yes	8.2	9.0	10.6
No	7.6	8.4	9.1

Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

Patterns of average transaction amount by subgroup were largely consistent from 2003 to 2017. Households with children, households with earnings, and households in counties without persistent poverty spent more per transaction, on average, than those without children, without earnings, and in counties with persistent poverty, respectively (table 5.4). In all years, households with children and without elderly or disabled members spent the most per transaction. In 2003 and the first half of 2009, households with elderly members spent the least per transaction among all household types. In 2017, households without children, elderly, or disabled members spent the least per transaction. Over time, the difference in transaction amounts got smaller for subgroups based on presence of children and household earnings. In contrast, transaction amounts in households in counties with persistent poverty versus without persistent poverty diverged: in 2003, households living outside persistent poverty counties spent $1.18 more than households living in persistent poverty counties, and in 2017, that difference was up to $4.05.

Table 5.4. Average Transaction Amount by Subgroup: 2003, 2009, and 2017

Household Characteristic	2003	2009	2017
With and without children			
Households with children	31.53	37.42	33.99
Households without children	20.07	26.42	24.52
All households, by type			
With elderly	19.16	25.26	25.49
With disabled, nonelderly	26.78	32.56	29.31
With children, no elderly or disabled	30.56	37.39	33.86
Other households	21.39	27.07	24.00
Employment status			
Households with earnings	29.82	34.86	31.17
Households without earnings	26.98	32.67	29.20
County with persistent poverty			
Yes	26.84	31.24	26.41
No	28.02	33.60	30.46

Note: Dollar values for FY 2003 and the first half of FY 2009 are not converted to FY 2017 dollars.
Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

Average monthly redemption patterns were generally consistent across subgroups. Households with children spent more per month than households without children in all years measured. Despite different patterns across time in the amount per transaction (table 5.4), from 2003 to 2017, households with elderly members consistently spent the least per month, and households with children but without elderly or disabled members consistently spend the most (table 5.5). Households with earnings spent more per month than households without earnings. In 2003 and the first half of 2009, households living in counties with persistent poverty spent more than households in counties without persistent poverty. In 2017, that pattern was reversed, aligning with the growing difference in transaction amount shown in table 5.4.

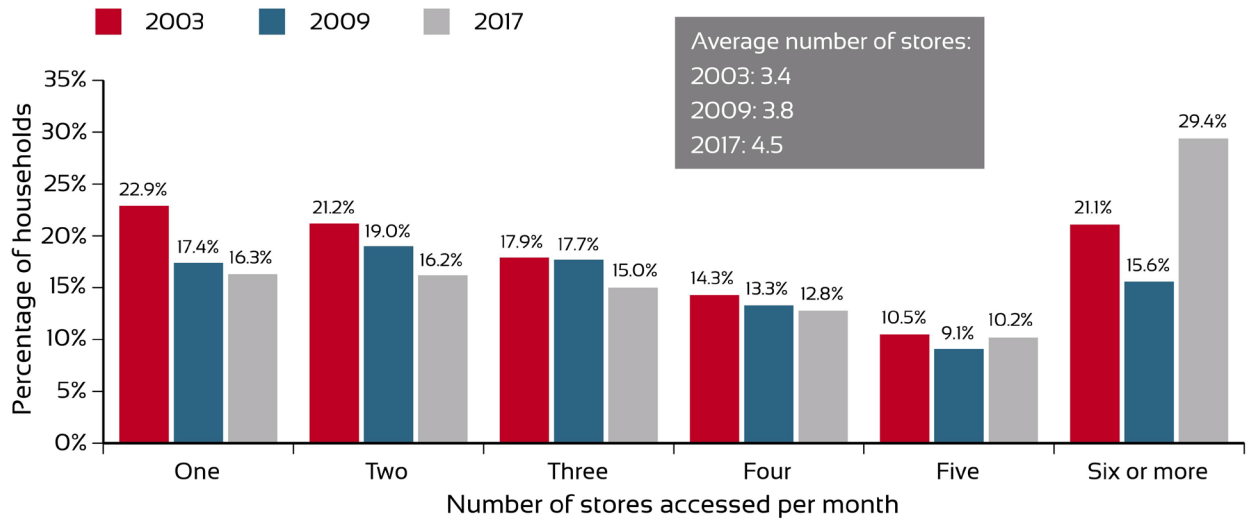
Table 5.5. Average Monthly Redemption by Subgroup: 2003, 2009, and 2017

Household Characteristic	2003	2009	2017
With and without children			
Households with children	282	365	397
Households without children	96	140	152
All households, by type			
With elderly	82	123	136
With disabled, nonelderly	142	191	198
With children, no elderly or disabled	293	373	404
Other households	138	175	192
Employment status			
Households with earnings	237	308	312
Households without earnings	179	228	229
County with persistent poverty			
Yes	202	253	254
No	195	251	256

Note: Dollar values for FY 2003 and the first half of FY 2009 are not converted to FY 2017 dollars.
Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

In addition to making more transactions per month since 2003, households redeemed their benefits at more stores each month in 2017 than in 2003 or 2009. On average, households in FY 2017 redeemed their benefits at 4.5 stores, while in the first 6 months of FY 2009, households redeemed their benefits at 3.8 stores, and in FY 2003 at 3.4 stores per month (figure 5.3). A larger percentage of households in 2017 visited six or more stores each month and fewer visited only one store, relative to households' redemption patterns in 2003 and 2009.

Figure 5.3. Number of Stores Accessed by Households per Month: 2003, 2009, 2017



Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017 Insight tabulations of FY 2009 ALERT and STARS data

As might be expected, as the average number of stores utilized increased, the prevalence of households redeeming benefits at one type of store decreased. In FY 2003, nearly half of all households (46.5 percent) redeemed their benefits exclusively at supermarkets/super stores; in the first half of FY 2009, that rate dropped to 42.0 percent; in FY 2017, it dropped to 34.7 percent (table 5.6). Similarly, fewer than 1 percent of households redeemed their benefits exclusively at grocery stores in FY 2017, compared to 3.0 percent in FY 2003.

Table 5.6. Redemption at Single Store Type: 2003, 2009, and 2017

Stores Where Benefits Were Redeemed	2003	2009	2017
Average monthly number of stores per household	3.4	3.8	4.5
Percentage of households redeeming benefits exclusively at supermarkets/super stores	46.5	42.0	34.7
Percentage of households redeeming benefits exclusively at grocery stores[a]	3.0	1.1	0.7
Average percentage of benefits redeemed at supermarkets/super stores	83.0	84.9	82.1

[a] Grocery stores include large, medium, and small grocery stores.
Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of FY 2017 ALERT and STARS data

In all years measured, households with children redeemed benefits at more stores than households without children. Among all household types, households with children and without elderly or disabled members consistently redeemed benefits at the most stores, while households with elderly members redeemed benefits at the fewest stores. From 2003 to 2017, households with earnings and living in counties with persistent poverty redeemed benefits at more stores than households without earnings and living in counties without persistent poverty, respectively. The difference in the monthly number of stores utilized between households with versus without children, with versus without earnings, and living in counties with versus without persistent poverty also increased over time.

Table 5.7. Average Monthly Number of Stores by Subgroup: 2003, 2009, and 2017

Household Characteristic	2003	2009	2017
With and without children			
Households with children	4.0	4.6	5.7
Households without children	2.5	3.0	3.5
All households, by type			
With elderly	2.2	2.6	2.9
With disabled, nonelderly	2.8	3.2	3.7
With children, no elderly or disabled	4.1	4.7	5.8
Other households	3.2	3.7	4.4
Employment status			
Households with earnings	3.6	4.2	5.0
Households without earnings	3.2	3.6	4.2
County with persistent poverty			
Yes	3.5	4.0	4.8
No	3.3	3.8	4.4

Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

Across all measured years, households without children were more likely than households with children to redeem benefits exclusively at supermarkets/super stores. From 2003 to 2017, households with elderly members were most likely to redeem benefits exclusively at supermarkets/super stores (table 5.8). Households in micropolitan areas were less likely than households in metropolitan areas to redeem benefits exclusively at supermarkets/super stores in 2017 (34 percent of households versus 36 percent) but were more likely to do so in 2003 (51 percent of households versus 46 percent) and the first half of 2009 (46 percent of households versus 41 percent).

Table 5.8. Redemption at Single Store Type by Subgroup: 2003, 2009, and 2017

Household Characteristic	2003	2009	2017
With and without children			
Households with children	38.4	34.0	25.5
Households without children	56.8	49.8	43.1
All households, by type			
With elderly	65.7	60.7	55.6
With disabled, nonelderly	49.8	45.3	36.5
With children, no elderly or disabled	38.3	34.0	25.6
Other households	43.3	39.0	29.7
Employment status			
Households with earnings	44.5	39.2	31.4
Households without earnings	47.9	43.2	37.7
Metro/nonmetro areas			
Metropolitan	46.1	41.3	35.9
Nonmetro, micropolitan	51.1	45.8	33.5
Nonmetro, noncore	47.4	43.5	34.3
County with persistent poverty			
Yes	37.7	35.7	25.9
No	48.1	42.6	36.9

Source: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

Table 1.1 indicated the number of authorized convenience stores increased 72.9 percent since 2009, raising their share of authorized retailers to nearly half (47.3 percent, an increase of 11.8 percentage points). The number of authorized stores categorized as “other” increased 40.8 percent, raising that share to one-quarter of authorized retailers (up 2.0 percentage points). The change in the distribution of authorized retailers by store type may partially explain the increase in the percentage of transactions that take place at convenience and other store types (table 5.9). However, examination of the distribution of benefits reveals more than four-fifths of dollars redeemed are still at supermarkets/super stores. The share of benefits redeemed at convenience stores increased by 1.7 percentage points and the share at other stores increased by 2.7 percentage points.

Table 5.9. Distribution of Transactions and Benefits Redeemed by Store Type: 2009 and 2017

Transactions and Benefits Redeemed	2009	2017
Distribution of transactions by store type		
Supermarkets/super stores	64.2	57.4
Large/medium grocery	7.1	5.1
Small grocery	4.8	2.6
Convenience	14.2	21.2
Specialty food	2.8	1.2
Other	6.8	12.5
Distribution of benefits redeemed by store type		
Supermarkets/super stores	84.9	82.1
Large/medium grocery	4.3	4.1
Small grocery	1.9	1.2
Convenience	3.8	5.5
Specialty food	1.9	1.1
Other	3.2	5.9

Notes: The categorization of stores, particularly among convenience, specialty, and other stores, changed from 2003 to 2009, so this comparison is limited to the first half of FY 2009 and FY 2017.
FNS classifies stores according to 15 types, which are collapsed into the 6 categories shown here. Specialty food stores include bakeries, fruit and vegetable markets, meat and poultry markets, and seafood markets. Other stores include groceries in combination with other stores, delivery routes, farmers' markets, nonprofit food buying cooperatives, direct marketing farmers, military commissaries, meal service providers, and wholesalers.
Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of FY 2017 ALERT and STARS data

B. Benefit Exhaustion and Carryover

The rate of exhaustion in FY 2017 is slower than the rates in FY 2003 and the first half of FY 2009. Households spent 16.5 percent of their benefit on the issuance day in FY 2017, and 21.9 percent on the issuance day in the first half of FY 2009, and 20.4 percent on the issuance day in FY 2003. By day 7, households spent over half of their benefit in 2017 (56.7 percent), but it was nearly 60 percent of the benefit in 2003 and 2009 (table 5.10). By day 14, the average household had redeemed 75 to 80 percent of its benefit across all 3 study periods, and by the end of the month, the average household had spent 97 to 98 percent in each timeframe.

Table 5.10. Benefit Exhaustion by Day of the Month: 2003, 2009, and 2017

Year	Percentage of Benefits Redeemed				
	Day 1	Day 7	Day 14	Day 21	End of Month
2003	20.4	59.5	79.8	90.8	97.3
2009	21.9	59.6	79.7	90.9	97.4
2017	16.5	56.7	77.6	89.1	95.9

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2002 to December 2003 for FY 2003, from September 2008 to October 2009 for the first 6 months of FY 2009, and July 2016 to December 2017 for FY 2017.
The monthly benefit is the amount issued in the current month. The percentage redeemed does not reflect spending of benefits carried over from prior months.
Source: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of FY 2017 ALERT and STARS data

Across all measured years, households with children redeemed benefits more quickly than households without children. The percentage of benefits redeemed by households with children is higher at each measured point in the month (table 5.11). The difference in spending by day 1 and day 7 is smaller in 2017 than in 2003 or the first half of 2009.

Table 5.11. Benefit Exhaustion by Day of the Month and Presence of Children: 2003, 2009, and 2017

Year	Percentage of Benefits Redeemed				
	Day 1	Day 7	Day 14	Day 21	End of Month
2003					
Households with children	21.9	60.7	80.9	91.4	97.2
Households without children	18.8	58.8	79.0	89.7	96.2
2009					
Households with children	22.4	63.4	83.0	93.0	96.6
Households without children	20.3	63.4	82.6	91.6	95.1
2017					
Households with children	14.2	52.2	74.1	86.8	96.6
Households without children	13.7	52.2	73.1	85.5	95.1

Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

From 2003 to 2017, households with elderly members redeemed benefits at the slowest rate, and households with disabled but no elderly members redeemed benefits at the fastest rate (table 5.12). In all years measured, in the first week of the issuance month, households with children but without elderly or disabled members redeemed benefits more slowly than other households (with no children or elderly or disabled members). In all years measured, this pattern switched in the last week of the month, with households containing children but no elderly or disabled members redeeming benefits more quickly than households without children or elderly/disabled members.

Table 5.12. Benefit Exhaustion by Day of the Month and Household Type: 2003, 2009, and 2017

Year	Percentage of Benefits Redeemed				
	Day 1	Day 7	Day 14	Day 21	End of Month
2003					
With elderly	13.7	51.7	74.2	87.4	95.3
With disabled, nonelderly	23.9	65.6	84.2	92.6	97.5
With children, no elderly or disabled	21.3	59.7	80.3	91.1	97.1
Other households	21.6	60.9	80.3	90.4	96.6
2009					
With elderly	15.2	58.5	78.7	89.7	93.8
With disabled, nonelderly	24.1	66.7	85.7	93.9	96.6
With children, no elderly or disabled	21.7	62.5	82.4	92.7	96.4
Other households	23.1	66.4	84.5	92.5	95.7
2017					
With elderly	11.0	47.8	69.9	83.3	94.3
With disabled, nonelderly	18.0	58.5	78.7	89.2	96.8
With children, no elderly or disabled	13.5	51.3	73.4	86.3	96.4
Other households	14.2	52.8	73.4	86.2	95.4

Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

In 2003 and the first half of 2009, households with earnings redeemed benefits more slowly than households without earnings at all points during the month (table 5.13). The 2017 redemption followed that same pattern through day 14 after benefit issuance. In 2017, by day 21 after issuance and through the end of the issuance month, households with earnings had spent more of their benefits than households without earnings.

Table 5.13. Benefit Exhaustion by Day of the Month and Presence of Earnings: 2003, 2009, and 2017

Year	Percentage of Benefits Redeemed				
	Day 1	Day 7	Day 14	Day 21	End of Month
2003					
Households with earnings	20.9	58.9	79.4	90.4	96.9
Households without earnings	21.4	61.0	81.1	91.3	97.0
2009					
Households with earnings	20.6	61.6	81.8	92.3	96.1
Households without earnings	22.4	64.4	83.6	92.7	96.2
2017					
Households with earnings	12.8	51.0	73.5	86.7	96.4
Households without earnings	14.7	53.0	73.9	86.2	95.8

Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

In 2003 and the first half of 2009, households living in counties with persistent poverty redeemed their benefits more quickly than households in counties without persistent poverty at nearly all points in the month (table 5.14). In 2017, this pattern reversed; households in counties without persistent poverty redeemed benefits more quickly through the first 21 days of the issuance month than households in counties with persistent poverty. Nationally, households redeemed benefits more slowly in 2017 than in earlier years, and this trend was especially pronounced among households living in persistent poverty. However, at the end of the month, households in counties with persistent poverty had spent slightly more of their benefits than households in counties without persistent poverty.

Table 5.14. Benefit Exhaustion by Day of the Month and Poverty Persistence: 2003, 2009, and 2017

Year	Percentage of Benefits Redeemed				
	Day 1	Day 7	Day 14	Day 21	End of Month
2003					
County with persistent poverty	24.7	63.8	83.1	92.1	96.7
County without persistent poverty	20.8	59.8	80.2	90.9	97.0
2009					
County with persistent poverty	25.4	69.4	86.2	94.9	96.7
County without persistent poverty	21.5	62.9	81.4	92.4	96.1
2017					
County with persistent poverty	12.0	50.3	71.9	85.1	96.4
County without persistent poverty	14.2	52.4	73.9	86.5	96.0

Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

On average, the amount of the unspent monthly issuance carried over by households into the next month and the average monthly ending balance doubled from the 2003 study period to the 2017 study period. In FY 2003, the average household did not spend $5.38 of its monthly issuance, while in FY 2017 the average household did not spend $10.72 of the issuance (table 5.15). Similarly, a household on average had an end-of-month balance of $12.82 in FY 2003, which increased to $25.01 in FY 2017 (table 5.15). As expected with this increase, the distribution of households by the amount of carryover and by monthly ending balance shifted toward higher values from 2003 to 2017. The proportion of households carrying over more than $10 increased from 9.2 percent in 2003 to 14.0 percent in 2017, and the proportion of households with an end-of-month balance over $10 rose from 15.0 percent to 20.6 percent.

Table 5.15. Average Unspent Issuance and End-of-Month Balance by Average Monthly Benefit: 2003, 2009, and 2017

Dollar Amount	Amount of Unspent Monthly Issuance[a]			Average Balance at End of Issuance Month[b]		
	2003	2009	2017	2003	2009	2017
Average monthly dollar amount (nominal $)	5.38	6.82	10.72	12.82	16.56	25.01
Distribution of households by average amount (%) $10 or less	90.9	89.5	86.1	85.0	83.4	79.4
< $1	68.4	66.6	63.2	48.7	46.5	42.7
$1–10	22.5	22.9	22.9	36.3	36.9	36.7
More than $10	9.2	10.5	14.0	15.0	16.6	20.6
$11–25	4.0	4.2	5.1	5.6	5.8	6.5
$26–50	2.4	2.7	3.4	3.5	3.7	4.3
> $50	2.8	3.6	5.5	5.9	7.1	9.8

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle.
For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period from July 2002 to December 2003 for FY 2003, from September 2008 to October 2009 for the first 6 months of FY 2009, and July 2016 to December 2017 for FY 2017.
[a] Unspent issuance is the amount of issuance unredeemed each issuance month, taken as the maximum of zero and (issuance minus redemption). This measure ignores unspent issuance from prior months. Issuance months for each household are defined to begin on the household's issuance day.
[b] The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the accumulation of unspent issuance from all prior months.
Sources: 2003: Cole and Lee (2005); 2009: Castner and Henke (2011); 2017: Insight tabulations of FY 2017 ALERT and STARS data

By the presence of children, household type, and earnings, patterns of unspent issuance were largely the same from 2003 to 2017. Households without children, households with disabled nonelderly members, and households without earnings had smaller unspent issuance amounts than other household types across years, and this difference was largest in 2017 (table 5.16). In FY 2003, households living in counties with persistent poverty had larger average unspent issuances than households in counties not experiencing persistent poverty. In the first half of FY 2009 and in FY 2017, households living in counties without persistent poverty had higher average unspent issuance amounts.

Table 5.16. Average Unspent Issuance by Subgroup: 2003, 2009, and 2017

Average Monthly Dollar Amount (Nominal $) of Unspent Monthly Issuance[a]	2003	2009	2017
With and without children			
Households with children	7.90	12.63	13.81
Households without children	3.62	6.93	7.53
All households, by type			
With elderly	3.78	7.59	7.83
With disabled, nonelderly	3.56	6.38	6.31
With children, no elderly or disabled	8.59	13.49	14.74
Other households	4.69	7.60	8.80
Employment status			
Households with earnings	7.40	12.04	11.37
Households without earnings	5.36	8.83	9.64
County with persistent poverty			
Yes	6.73	8.32	9.32
No	5.85	9.88	10.34

[a] Unspent issuance is the amount of issuance unredeemed each issuance month, taken as the maximum of zero and (issuance minus redemption). This measure ignores unspent issuance from prior months. Issuance months for each household are defined to begin on the household's issuance day. Dollar values for FY 2003 and the first half of FY 2009 are not converted to FY 2017 dollars.

Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

As with unspent issuance, average end-of-month balance was consistent across years based on whether a household had children, household type, and employment status. Households without children, households with disabled nonelderly members, and households without earnings had lower average end-of-month balances than other types of households (table 5.17). In 2003 and the first half of 2009, households living in counties with persistent poverty had lower average end-of-month balances than households in counties without persistent poverty. In 2017, however, households in counties with persistent poverty had higher average end-of-month balances than households in counties without persistent poverty.

Table 5.17. Average End-of-Month Balance by Subgroup: 2003, 2009, and 2017

Average Monthly Dollar Amount (Nominal $) of Balance at End of Issuance Month[a]	2003	2009	2017
With and without children			
Households with children	15.64	29.22	37.66
Households without children	10.19	17.57	21.69
All households, by type			
With elderly	13.04	21.92	26.80
With disabled, nonelderly	9.53	16.31	17.50
With children, no elderly or disabled	16.28	30.80	40.54
Other households	9.84	16.84	20.18
Employment status			
Households with earnings	15.28	28.26	32.80
Households without earnings	12.30	21.35	26.46
County with persistent poverty			
Yes	11.48	17.52	30.07
No	13.29	23.87	28.35

[a]The monthly ending balance is the EBT account balance at the time of the next issuance. This measure reflects the accumulation of unspent issuance from all prior months. Dollar values for FY 2003 and the first half of FY 2009 are not converted to FY 2017 dollars.
Sources: 2003: Cole & Lee (2005); 2009: Castner & Henke (2011); 2017: Insight tabulations of SNAP Quality Control data and ALERT data, FY 2017

Chapter 6. Atypical Redemption Patterns

Chapters 2 to 5 identified patterns of SNAP redemption by examining averages by State and household characteristics. This chapter focuses on much smaller subgroups of households—those that have redemption patterns that differ from the averages for the following three measures.[6]

- Large ending balances (greater than $200)
- Out-of-State redemption in counties that do not border the household's State of residence
- Inactivity

In identifying households with atypical redemption, the study team recognized many households will experience 1 month in a fiscal year that does not fit within their typical redemption patterns, possibly for such events as a death of a family member, illness, or travel. For example, chapter 4 detailed how 6.2 percent of households have at least 1 month with no transactions, even though they received a benefit issuance, but only 1.4 percent of households have 2 or more months with no purchase transactions. As a result, this discussion is limited to households that have 2 or more months of atypical redemption. For the State comparisons, with a large starting sample, the focus is exclusively on households that exhibited atypical behavior in March (and a second month) to limit the effect of activity in months when household transaction activity may naturally stray from normal patterns, such as for holidays and summer vacations. In the analysis of characteristics, which has a smaller sample than the State-based analysis, the full sample is included to maintain a sufficient number of households for comparisons, though for each household, the analysis remains limited to the three months centered around the month of QC review.

This chapter first presents for each measure a descriptive analysis of the households exhibiting atypical redemption patterns. To examine characteristics of households with atypical patterns, the study team used a regression-based approach that better facilitates identification of relationships between household characteristics and atypical redemption. Descriptive results alone can show the rate of the atypical activity among a certain subset of the sample but not the likelihood the particular subset may be involved in atypical behavior. The regression results presented in this chapter facilitate analysis of the percentage point likelihood difference of one group being involved in atypical behavior compared with another group, holding all other demographic characteristics constant. For example, the analysis facilitates examination of whether households with earnings are more or less likely to be involved with atypical activity than households without earnings, holding all else constant.[7]

The supporting tables for the descriptive analysis appear in appendices C (household characteristics) and D (State percentages), and for the regression analysis in appendix H. Regression results for the other atypical measures considered appear in appendix I.

[6] The study team examined a larger set of measures, deciding to focus on these three in the discussion. The remaining measures explored appear in appendix E.

[7] All covariates included in the logistic regression models are presented in rows of table 6.2.

A. Ending Balances Greater Than $200

On average, 1.4 percent of households had ending balances greater than $200[8] in both February and March 2019 (table 6.1).[9] Across States, the percentages ranged from 0.6 percent in Arkansas to 3.5 percent in North Dakota. Eleven States had fewer than 1.0 percent of households with a large ending balance. On average, 44.6 percent of households with large ending balances accumulated this balance with a benefit of $200 or less; in 18 States, at least 50 percent of the households had a monthly benefit of $200 or less (figure 6.1). Almost 5 percent of households with large ending balances had a benefit of less than $100.

Most households that accumulated ending balances over $200 in February and March 2017 redeemed benefits most frequently at supermarkets and super stores.

Table 6.1. Percentage of Households With End-of-Month Balance Over $200 in February and March 2017

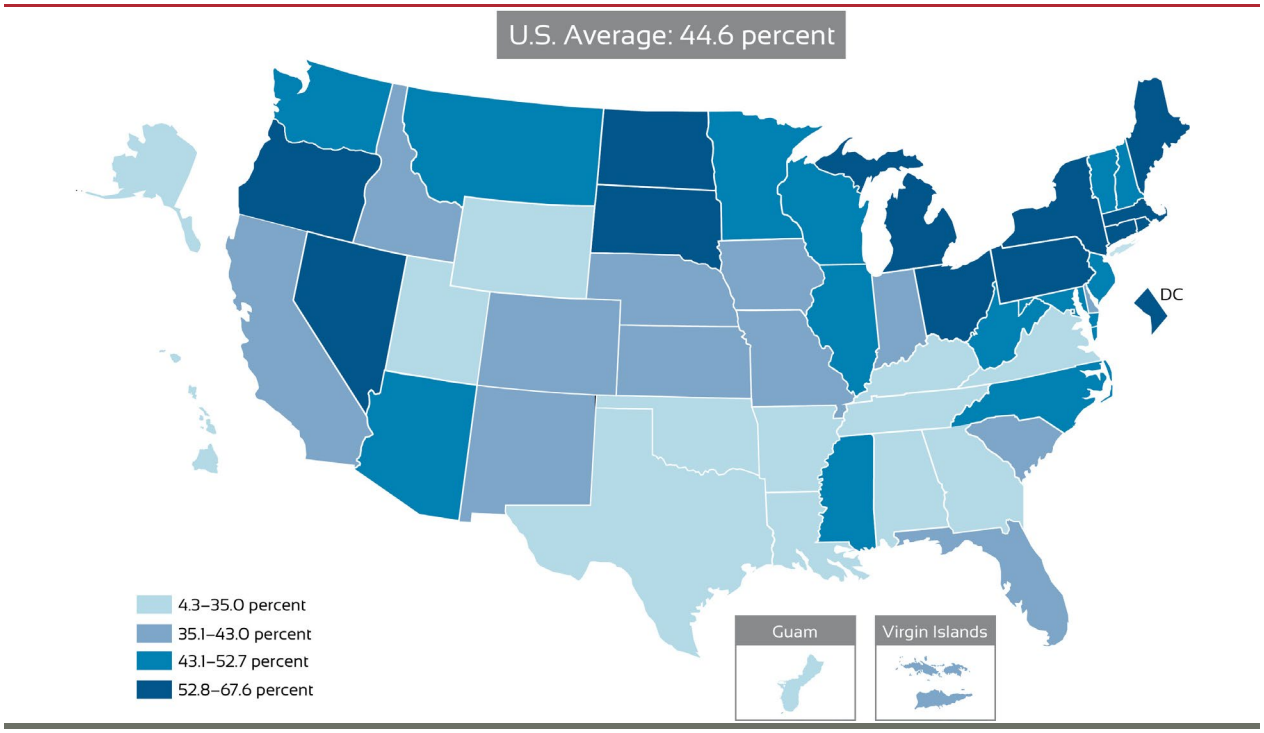
Population	Percentage With Ending Balance >$200 in February and March	Distribution of Households With Ending Balance > $200 in February and March						
		Benefit Amount					Usual Store Is Super-market or Super Store	Average Miles to Nearest Supermarket or Super Store
		< $26	$26–50	$51–100	$101–200	> $200		
Total United States	1.4	1.3	0.6	3.0	39.6	55.4	79.9	0.4

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
The $200 threshold represents 78 percent of the average benefit issuance in the 48 contiguous States. The study team adjusted the threshold for Alaska, Guam, Hawaii, and the Virgin Islands to be 78 percent of their respective average issuances (Alaska $336, Guam $459, Hawaii $364, and Virgin Islands $284).
Source: Insight tabulations of ALERT and STARS data, FY 2017

[8] The $200 threshold is used in the 48 contiguous States and represents 78 percent of the average issuance. Thresholds for Alaska, Guam, Hawaii, and the Virgin Islands are set to 78 percent of their respective average issuances (Alaska $336, Guam $459, Hawaii $364, and Virgin Islands $284).

[9] In most measures of atypical redemption activity, the study team examined households with the atypical activity in March and any other month in the fiscal year. For ending balances, the team limited the analysis to 2 months in a row. This excluded households who regularly save benefits for 2 months for a large shopping trip.

Figure 6.1. Percentage of Households With End-of-Month Balance Over $200 That Had a Monthly Benefit Issuance Under $200



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
The $200 threshold represents 78 percent of the average benefit issuance in the 48 contiguous States. The study team adjusted the threshold for Alaska, Guam, Hawaii, and the Virgin Islands to be 78 percent of their respective average issuances (Alaska $336, Guam $459, Hawaii $364, and Virgin Islands $284).
Source: Insight tabulations of ALERT and STARS data, FY 2017

Regression analysis found eleven of the covariates considered were statistically significantly associated with a household having a large end-of-month balance in both February and March 2017 (table 6.2). Children-only households, households with only disabled or elderly members, and households residing in the Mid-Atlantic, Southeast, and Southwest regions were more likely to have end-of-month balances over $200 than other household types. For example, households with only disabled or elderly members were 1.1 percentage points more likely to have a large end-of-month balance than households with a nonelderly or nondisabled member, holding all else constant, including benefit issuance amount. This suggests that even though elderly or disabled households may have lower issuance amounts than other households, there are other characteristics associated with these types of households that increase their likelihood of maintaining a large end-of-month balance.

Table 6.2. Average Marginal Effect of Atypical Activity

Covariate	Type of Atypical Activity					
	Large End-of-Month Balance		Redemption in Noncontiguous States or Nonbordering Counties		Inactivity	
	AME	*SE*	AME	*SE*	AME	*SE*
Household type						
No children	-	-	-	-	-	-
Single adult with children	0.8	0.5	0.9	0.6	0.1	0.5
Multiple adults with children	0.2	0.5	0.0	0.6	-0.3	0.7
Children only	1.5*	0.7	-1.8**	0.5	-0.9	0.7
Elderly/disabled individuals only	1.1*	0.4	-1.9***	0.3	1.9***	0.3
Household size						
1	-	-	-	-	-	-
2	0.8	0.5	-1.2*	0.5	0.8*	0.4
3	0.5	0.6	-0.9	0.6	1.1	0.7
4+	0.6	0.6	-0.6	0.7	3.1**	1.0
Race/ethnicity of household head						
White	-	-	-	-	-	-
African American, non-Hispanic	-2.2***	0.3	1.8***	0.3	-0.6*	0.3
Hispanic	-0.7	0.4	0.5	0.4	-0.0	0.4
Asian, non-Hispanic	-0.6	0.6	-1.1*	0.5	-0.4	0.6
Native American, non-Hispanic	-3.3***	0.4	-0.3	0.5	1.5	0.8
Unknown	0.7*	0.4	-0.2	0.3	0.0	0.3
Household with earnings	0.2	0.3	-0.5	0.3	0.1	0.3
Receipt of TANF	0.0	0.5	0.1	0.5	-0.2	0.7
SNAP benefit period						
6 months or less	-	-	-	-	-	-
7–12 months	-2.0***	0.3	0.2	0.3	-0.1	0.3
More than 12 months	-2.6***	0.4	-0.7	0.4	0.0	0.4
Region[a]						
Midwest	-	-	-	-	-	-
Northeast	0.0	0.5	-0.7	0.5	-2.1***	0.5
Mid Atlantic	2.3**	0.5	0.1	0.5	-0.4	0.5
Southeast	1.4*	0.4	0.3	0.5	-1.2**	0.4
Southwest	2.2***	0.5	-0.8	0.5	-0.9	0.5
Mountain Plains	0.4	0.4	0.7	0.5	-1.4**	0.4
Western	-0.3	0.4	-1.1*	0.5	-0.3	0.5
Urbanicity						
Metropolitan	-	-	-	-	-	-
Nonmetro micropolitan area	-0.7*	0.3	0.6	0.3	-0.1	0.3
Nonmetro noncore area	-0.1	0.4	-0.2	0.4	0.2	0.4

Covariate	Type of Atypical Activity					
	Large End-of-Month Balance		Redemption in Noncontiguous States or Nonbordering Counties		Inactivity	
	AME	*SE*	AME	*SE*	AME	*SE*
County with persistent poverty	-0.2	0.4	0.8*	0.4	-0.9**	0.3
Average issuance amount (in $100 increments)	1.2***	0.1	0.5***	0.1	-2.1***	0.2
Sample mean	4.6		4.8		4.2	
R-squared	0.07		0.03		0.08	
Sample size (*n*)	39,629		40,859		40,859	

Notes: "-" indicates the effect was not calculated because the variable was the reference category. The other covariates in the category were estimated in reference to the omitted variable. For example, the average marginal effect of household type was estimated relative to a household with no children.
AME = average marginal effect
SE = standard error
[a] Regions are defined using FNS definitions as of FY 2017.
* $p < .05$, ** $p < .01$, *** $p < .001$
Sample mean is the unweighted average percentage of households that exhibited the atypical activity.
R-squared is the reported pseudo *r*-squared statistic from the logistic regression model.
Sample sizes differ because of missing data.
Source: Insight tabulations of SNAP QC data and ALERT data, FY 2017

Households headed by non-Hispanic African-American or Native-American individuals, or individuals of an unknown race, households with a certification period of 7 months or more, and households residing in a nonmetro micropolitan area were all less likely to have a large end-of-month balance. In particular, the relationship between households headed by non-Hispanic African-American individuals and Native-American individuals, and households with a certification period of 7 months or more, and this atypical redemption measure was both statistically significant and large in magnitude. Households headed by individuals who are non-Hispanic African American and households headed by individuals who are Native American were, respectively, 2.2 and 3.3 percentage points less likely to have a large end-of-month balance than households headed by a non-Hispanic White individual, holding all else constant. Households with certification periods of 7–12 months and over 12 months were 2.0 and 2.6 percentage points less likely, respectively, to exhibit this atypical behavior than households with shorter benefit periods, holding all else constant.

Lastly, a $100 increase in the SNAP average issuance amount was associated with, on average, a 1.2 percentage point increase in the likelihood of having a large end-of-month balance.

B. Out-of-State Transactions

SNAP benefits can be redeemed in any State, and households living near the border of another State may consistently redeem benefits across State lines. For the measure of atypical out-of-State transactions, the study team focused on transactions made in either (1) States contiguous to the household's State of residence (i.e., a State that shared a State border) but in a county that was not along that State border or (2) in a State not contiguous to the household's State of residence. For brevity purposes, these transactions are referred to here as nonborder out-of-State transactions.

As shown in table 6.3, about 2.6 percent of households made a nonborder out-of-State transaction in both March and another month in FY 2017. As with in-State transactions, most of the nonborder out-of-State dollars were redeemed at supermarkets/super stores (70.7 percent). However, a larger percentage

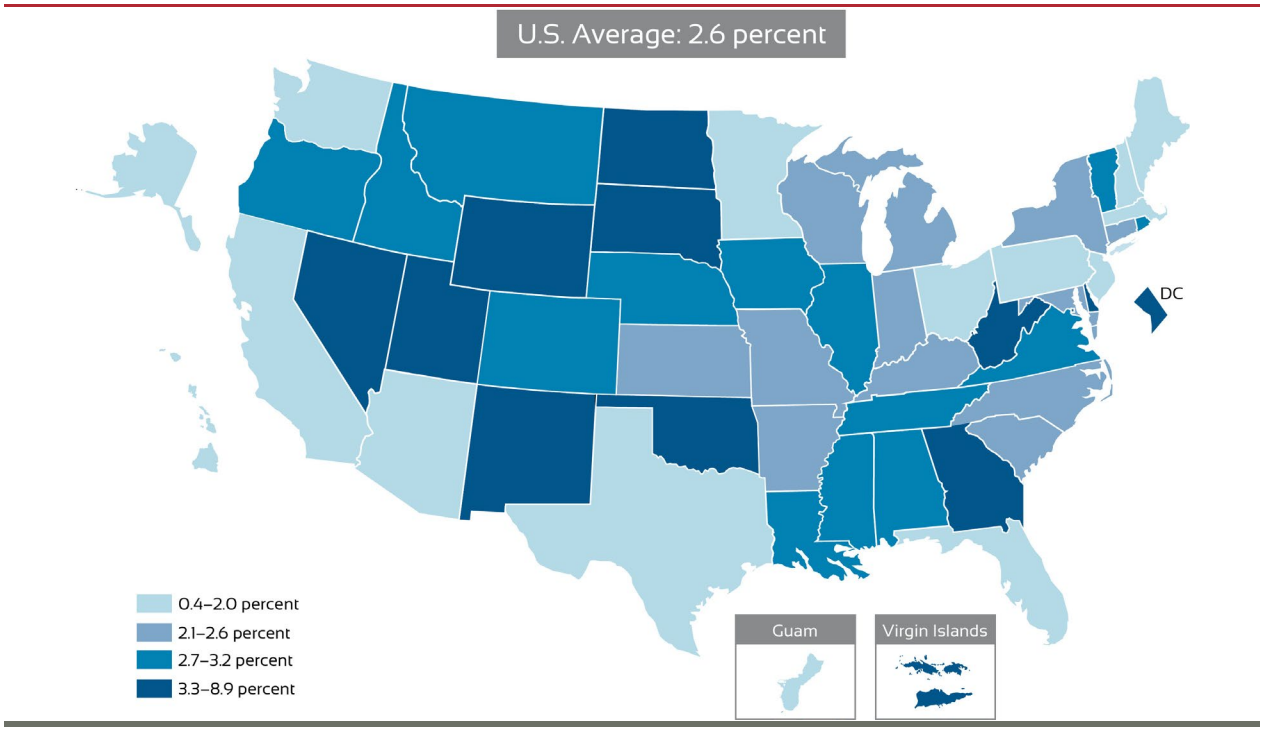
of out-of-State dollar redemption occurs at convenience stores than among all redemption (in-State or out-of-State), which was 14.0 percent at convenience stores for nonborder out-of-State dollars redeemed (table 6.3) versus 5.5 percent among all dollars redeemed (appendix B, table B.4). Figure 6.2 illustrates the range of households making nonborder out-of-State transactions, from 0.4 percent of households residing in Guam to 8.9 percent of households residing in the District of Columbia.

Table 6.3. Nonborder Out-of-State Transactions

Population	Percentage With Atypical Behavior in March and Another Month	For Households With Out-of-State Redemption in Nonborder County or Noncontiguous State in Multiple Months										
		Percentage of Dollars Redeemed in Out-of-State Purchase Transactions, by Store Type						Percentage of Out-of-State Purchase Transactions by Dollar Amount				
		Supermarket or Super Store	Large/Medium Grocery	Small Grocery	Convenience Store	Specialty Store	Other Stores	< $10	$11–25	$26–50	$51–100	> $100
Total United States	2.6	70.7	3.0	1.4	14.0	1.1	9.8	37.1	24.7	16.4	12.4	9.4

Note: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Figure 6.2. Households Making Nonborder Out-of-State Transactions in March and 1 Other Month in FY 2017



Note: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Regression analysis revealed 8 covariates had a statistically significant relationship with the likelihood a household made a nonborder out-of-State transaction (table 6.2). Households headed by non-Hispanic African-American individuals were 1.8 percentage points more likely to make a nonborder out of-State transaction than households headed by a non-Hispanic White individual, holding all else constant. Households living in counties with persistent poverty were 0.8 percentage points more likely to exhibit this atypical behavior than households in counties without persistent poverty, holding all else constant.

Child-only households, households with only elderly or disabled members, two-person households, households headed by a non-Hispanic Asian member, and households residing in the West Region were all less likely to make a nonborder out-of-State transaction. In particular, child-only households and households with elderly or disabled individuals had an average marginal effect that was both significant and large in magnitude. Child-only households were 1.8 percentage points less likely to redeem their SNAP benefits in a nonborder out-of-State transaction than households without children, and households with only elderly or disabled individuals were 1.9 percentage points less likely to have an nonborder out-of-State redemption than households with a nonelderly or nondisabled participant, holding all else constant.

Lastly, a $100 increase in the SNAP average issuance amount was associated with, on average, a 0.5 percentage point increase in the likelihood of making a nonborder out-of-State transaction. This finding, though significant, is small in magnitude.

C. Inactivity

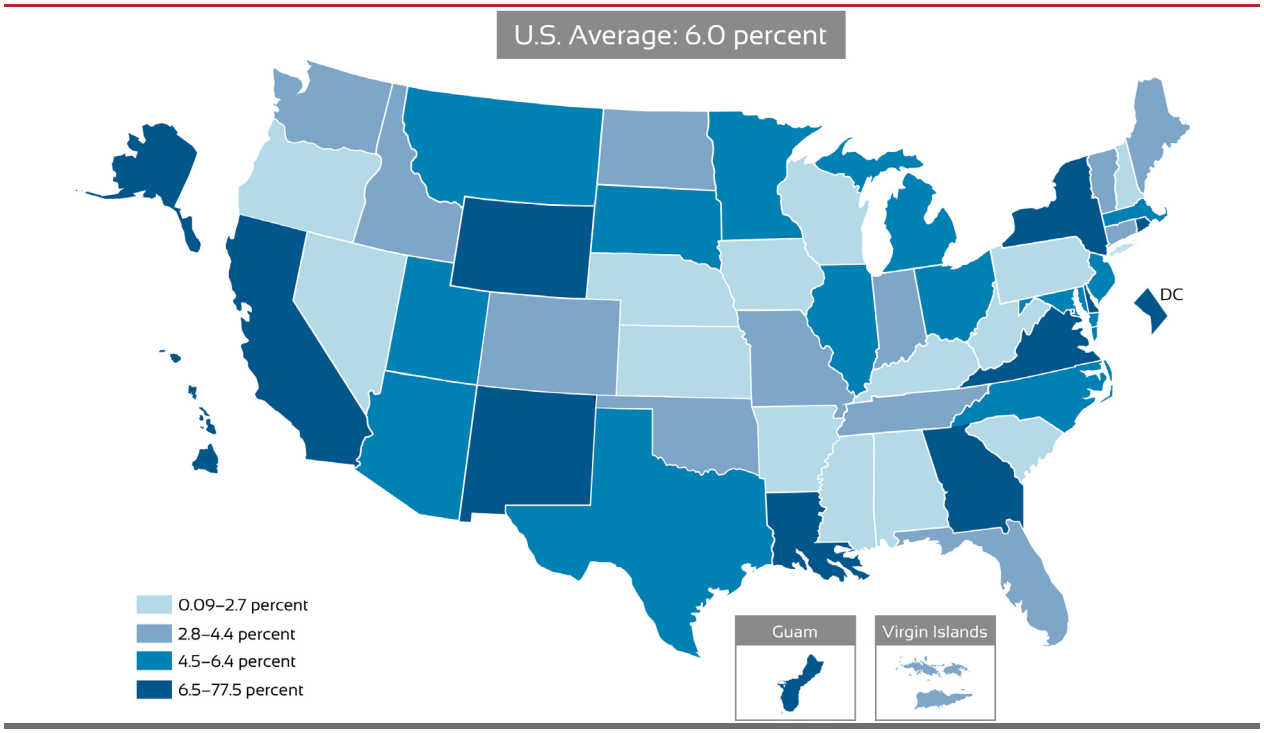
Fewer than 1 percent of households were inactive in March and another month in FY 2017 (table 6.4). On average, over half (57.4 percent) of the inactive households had a benefit issuance of $25 or less, but 6.0 percent had a benefit issuance of more than $200. Figure 6.3 illustrates the range across States of the percentage of inactive households that had a benefit issuance of more than $200.

Table 6.4. Percentage of Inactive Households

Population	Percentage Inactive in March and Another Month	Distribution of Households Inactive in Multiple Months						
		Benefit Amount					Usual Store Is Supermarket or Super Store	Average Miles to Nearest Supermarket or Super Store
		< $26	$26–50	$51–100	$101–200	> $200		
Total United States	0.3	57.4	6.5	8.5	21.6	6.0	78.4	0.6

Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017. Households were identified as ever inactive if, during any month, an issuance was received but no purchase transactions were made.
Source: Insight tabulations of ALERT and STARS data, FY 2017

Figure 6.3. Percentage of Inactive Households in March and 1 Other Month in FY 2017 That Had a Benefit Issuance Greater Than $200



Notes: Average monthly statistics are based on a random sample of approximately 10,000 households per State and month, limited to case months with a single issuance within the regular issuance cycle. For each household, the regular monthly issuance date was imputed from EBT redemption patterns observed over the period July 2016 to December 2017.
[a]Households were identified as ever inactive if, during any month, an issuance was received but no purchase transactions were made.
Source: Insight tabulations of ALERT and STARS data, FY 2017

The study team found nine covariates were statistically significantly associated with inactivity. Households with only elderly or disabled participants, 2-person households, and households with four or more household members were more likely to be inactive for more than one month. In particular, four-plus person households were 3.1 percentage points more likely to be inactive in March and another month in FY 2017 than one-person households and households with only elderly or disabled individuals were 1.9 percentage points more likely to be inactive than households with a nonelderly or nondisabled member, holding all else constant.

Households headed by non-Hispanic African-American individuals, households residing in the Northeast, Southeast, and Mountain Plains Regions, and households residing in counties with persistent poverty were all statistically significantly less likely to be inactive. Households headed by non-Hispanic African-American individuals were 0.6 percentage points less likely to be inactive than households headed by a non-Hispanic White individual, holding all else constant. Households residing in the Northeast, Southeast, and Mountain Plains Regions, were 2.1, 1.2, and 1.4 percentage points, respectively, less likely to be inactive than households residing in the Midwest Region. Households residing in counties with persistent poverty were 0.9 percentage points less likely to be inactive than households in counties without persistent poverty.

Lastly, a $100 increase in the average household benefit issuance amount was associated with a 2.1 percentage points lower likelihood of inactivity, holding all else constant.

D. Conclusions

Several of the characteristics included in the analysis were statistically significantly associated with one of the three atypical measures: (1) a large end-of-month balance, (2) out-of-State redemptions, or (3) inactivity. In addition to conducting the regression analysis, the study team examined the amount of variance attributable to issuance amount and location (the location of the "usual store" serves as proxy for the household location and was coded by county metropolitan status). This facilitated examination of whether either issuance amount or location provided significantly explanatory power in the models. For several of the atypical measures, including large end-of-month balances, issuance explained a larger proportion of the variance than any of the other covariates (see appendix I, table I.2).

However, in each of the three models described above, over 95 percent of the variation in the measure is not explained by the model. This suggests the majority of variance in the measures is related to unobservable characteristics the study team has been unable to account for in the regressions. It may be concluded that while some characteristics are associated with atypical behavior, other unobservable characteristics that could not be included in the models drive the large majority of variation in these measures. As a result, the study team cautions against using any particular covariate, though it may be statistically significantly associated with an atypical measure, as a predictor of atypical behavior.

References

California Department of Health Services. (1998). *California Dietary Practices Survey: Focus on fruits and vegetables, 1989–1997.* Sacramento, CA: California Department of Health Services.

Castner L., & Henke, J. (2011). *Benefit redemption patterns in the Supplemental Nutrition Assistance Program*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service.

Cole, N., & Lee, E. (2005). *Analysis of EBT redemption patterns: Methods and detailed tables*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service.

Cronquist, K., & Lauffer, S. (2019). *Characteristics of Supplemental Nutrition Assistance Program households: Fiscal year 2017*. Submitted by Mathematica Policy Research. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service.

USDA FNS (U.S. Department of Agriculture, Food and Nutrition Service). (2019). *Supplemental Nutrition Assistance Program: National data bank*. Retrieved from https://fns-prod.azureedge.net/sites/default/files/data-files/Keydata-November-2019.pdf