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Dynamics of Supplemental Nutrition Assistance Program Participation from 2008 to 2012

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Acronyms Used in this Report

ACS	American Community Survey
ARRA	American Recovery and Reinvestment Act of 2009
DRB	Disclosure Review Board
EBT	Electronic Benefits Transfer
FNS	Food and Nutrition Service
QC	Quality Control
RHTM	Recipiency History Topical Module
SIPP	Survey of Income and Program Participation
SNAP	Supplemental Nutrition Assistance Program
SSI	Supplemental Security Insurance
STARS	Store Tracking and Redemption System
TANF	Transitional Assistance for Needy Families
USDA	United States Department of Agriculture

EXECUTIVE SUMMARY

The Supplemental Nutrition Assistance Program (SNAP) is the cornerstone of America's food assistance policy. In fiscal year 2013, an average of nearly 48 million people received SNAP benefits each month.[1] The program caseload is dynamic; each month, new people enter the program while some participants exit.

Patterns of entry into and exit from SNAP shape the SNAP caseload. The number of participants has increased dramatically since the mid-2000s, from an average monthly caseload of 24 million in 2004 to more than 46 million in 2012. The caseload peaked at 47.6 million in FY 2013 before declining modestly to 46.5 million in FY 2014.

Once beneficiaries enroll, several circumstances can affect how long they stay on SNAP. A loss of eligibility, for instance, leads to an exit from the program. In general, SNAP requires recipients to report changes in income that make them ineligible. In addition, they must be periodically recertified for eligibility. Studies in certain States and subgroups have found spikes in exits that appear to occur at recertification (Ribar, Edolhoch, and Liu 2008, Ribar, Edolhoch, and Liu 2009). Other factors that may prompt a program exit include failure to comply with program rules, certain life events (moving into group quarters, for example), or simply a preference to stop participating.

The purpose of this study is to investigate SNAP caseload dynamics and document what drives changes in SNAP participation over time. Understanding participation dynamics is critical to developing effective SNAP policies. Well-designed studies, for example, can inform policymakers about what factors lead people to enter and exit SNAP; how long they typically participate; and how their participation decisions are affected by changes in individual circumstances, overall economic conditions, and program policies. This type of study can also help policymakers understand what happens to SNAP caseloads under different economic and policy environments or explain what appear to be contradictory participation patterns.

The current study explores the following research questions on the dynamics of participation in SNAP:

1. What factors lead people to enter SNAP?
2. How long do people tend to participate?
3. What factors lead people to exit?
4. How common is program re-entry?
5. How much do people rely on SNAP over time?
6. How does the program serve different groups of clients?
7. How have patterns of participation evolved over time?

[1] Based on data from SNAP Program Operations division [http://www.fns.usda.gov/pd/34SNAPmonthly.htm] accessed on July 10, 2014.

In this study, we find that many of the answers to these questions fit easily with what one might hypothesize: decreases in income lead people to enter; increases in income lead people to exit; and poorer people enter more often and participate longer. Other findings may not be as intuitive; for example, entry rates for the at-risk elderly are among the lowest across all client groups, or that despite the unemployment rate beginning to fall and the number of people in poverty stabilizing in 2011 and 2012, the SNAP caseload continued to grow.

The elderly have low SNAP entry rates, but once they join the program, they tend to stay a long time since they generally do not experience many changes to their circumstances. As to total SNAP caseload growth, the current study shows that more people entered the program between 2008 and 2012 than between 2004 and 2006, and people spent longer on the program. It also shows that although a higher proportion of participants experienced increases in earnings or other events that can cause people to leave SNAP compared to the mid-2000s, the percentage of participants who exited within four months of experiencing such events declined.

The current report, then, confirms some of what we know, answers some of what we did not know, and creates more questions to address in the future. It also provides details about how long participants remain in the program, how long they stay off SNAP before re-entering, how often people re-enter the program, and how much these patterns differ across key segments of the population, referred to as subgroups in this study.

The data source for the study is the 2008 Panel of the Survey of Income and Program Participation (SIPP), a nationally representative, longitudinal survey that collects detailed information on monthly labor force activity, earned income, cash public assistance and other unearned income (such as Social Security and pension payments,), non-cash public assistance, family and household composition, and detailed demographics. The 2008 SIPP began by interviewing approximately 52,000 households, and tracked all the people in those households forward for nearly six years, interviewing them every four months. This study covers five of those six years, stopping at the end of 2012. The 2008 SIPP panel is therefore a very useful data set with which to study the dynamics of SNAP participation. It also enables us to explore how the dynamics of a changing caseload vary by individual and family demographic and economic characteristics, as well as how they coincide with participants' changes in employment, income, or family composition. To be part of the pool of what this study considers to be "at risk" of joining SNAP in a given month, an individual must have had a family income under 300 percent of poverty for one or more months during the study period, and must not have received SNAP in the past two months. This study continues a tradition of SNAP dynamics research using the SIPP that began with the 1984 SIPP panel.

SNAP Entry

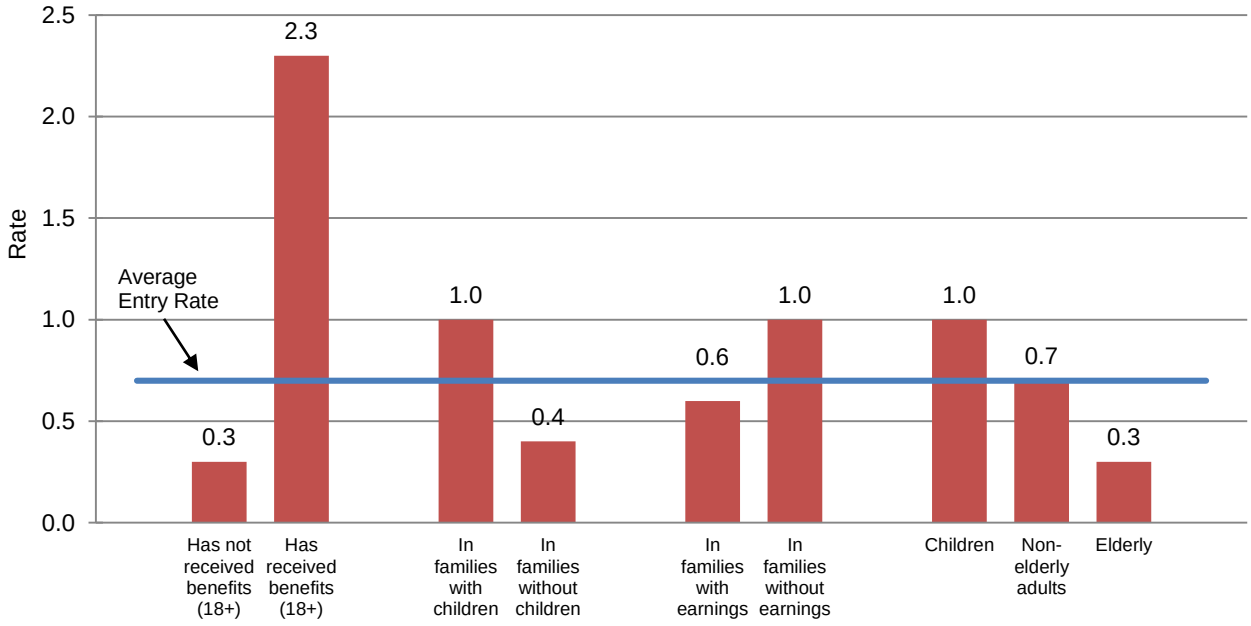
Each month between mid-2008 and the end of 2012, seven out of every 1,000 people in low-income families joined SNAP. This rate represents a 40 percent increase over the mid-2000s,

when five out of every 1,000 people in low-income families who were not receiving SNAP joined the program the next month.

The likelihood of entry differed according to an individual's past and current circumstances. Figure 1 shows that 3 of every 1,000 low-income nonparticipants who had not received SNAP during their adult lives entered the program in a given month, compared with 23 out of 1,000 people who had participated previously. Comparing those who entered SNAP with low-income nonparticipants also shows the importance of past benefit receipt to program entry. More than 50 percent of people who actually entered SNAP in this period had previously received benefits, but only 13 percent of low-income individuals (those at risk of entering) were previous recipients.

Family composition and earnings of family members also appear to affect the decision to enter SNAP. During the panel period, about 70 percent of entrants were in families with children, even though they only made up about half of the at-risk population. Nearly two-thirds of entrants lived in families with earnings, compared with over three-quarters of all people at risk of entering SNAP, and only 7 percent of entrants were elderly, compared with 18 percent of those at risk. Figure 1 compares the average monthly entry rates for several subgroups.

Figure 1 Average Monthly Entry Rates among Nonparticipating Individuals with Income under 300 Percent of Poverty at Some Point in Panel Period, 2008–2012



Source: Decision Demographics tabulations of the 2008 SIPP panel.
Note: If individuals enter multiple times during the panel period, estimates include each entry.

The most common events that precede entry into SNAP are related to a drop in family income. Among those who entered SNAP in the panel period, 30 percent experienced a decrease in family earnings of at least 10 percent in the previous four months, while 23 percent

experienced at least a 10 percent loss in *other* family income—income aside from earnings and Temporary Assistance for Needy Families (TANF).

Replacement Rates

Whereas the entry rate measures the number of entrants in relation to the number of low-income people not participating in SNAP, the replacement rate measures the number of entrants in relation to the size of the existing caseload. The replacement rate is defined as the number of new entrants in a given month divided by the number of participants in the previous month. It is a useful measure for capturing the extent to which the caseload changes from month to month. The average monthly replacement rate for 2008 to 2012 was 3.9 percent; this rate decreased from 5.6 percent to 3.1 percent over the course of the study period. The 2008 to 2012 average rate is slightly lower than the rate of 4.1 percent from the mid-2000s. Although more people entered the program during 2008 to 2012 than in the mid-2000s, the size of the caseload was much higher in 2008 to 2012, thus lowering the replacement rate as a percentage of the caseload because the denominator (that is, the caseload) increased.

Length of SNAP Participation Spells

A SNAP "spell" is simply the continuous period of time that an individual spends on one instance of SNAP participation. In the 56-month study period, some people join SNAP, leave the program, and then rejoin, thus contributing more than one spell to the analysis. Those who join SNAP at any time during the study period are called "new entrants" even if they have been on the program before; indeed, people who have been on SNAP before are more likely to start a new spell than those who have never received benefits. The median spell of SNAP participation among new entrants lasted about 12 months, 20 percent longer than during the mid-2000s when the median spell was 10 months, and 50 percent longer than in the early 2000s when the median spell was eight months.

As with entry rates, spell length varies for individuals with different characteristics, or different subgroups. Median new spell lengths were shortest for elderly members living with nonelderly individuals, nonelderly nondisabled childless adults,[2] and individuals with income greater than 200 percent of poverty in the month prior to the start of their SNAP spell. New-entrant elderly individuals with no other family members stayed on the program the longest. This pattern differs markedly from the entry rate patterns, in which elderly individuals are the least likely to enter. New entrants living in poverty, those in single-parent families, nonelderly disabled adults, and individuals in families with no high school graduates also had median spell lengths that were longer than average.

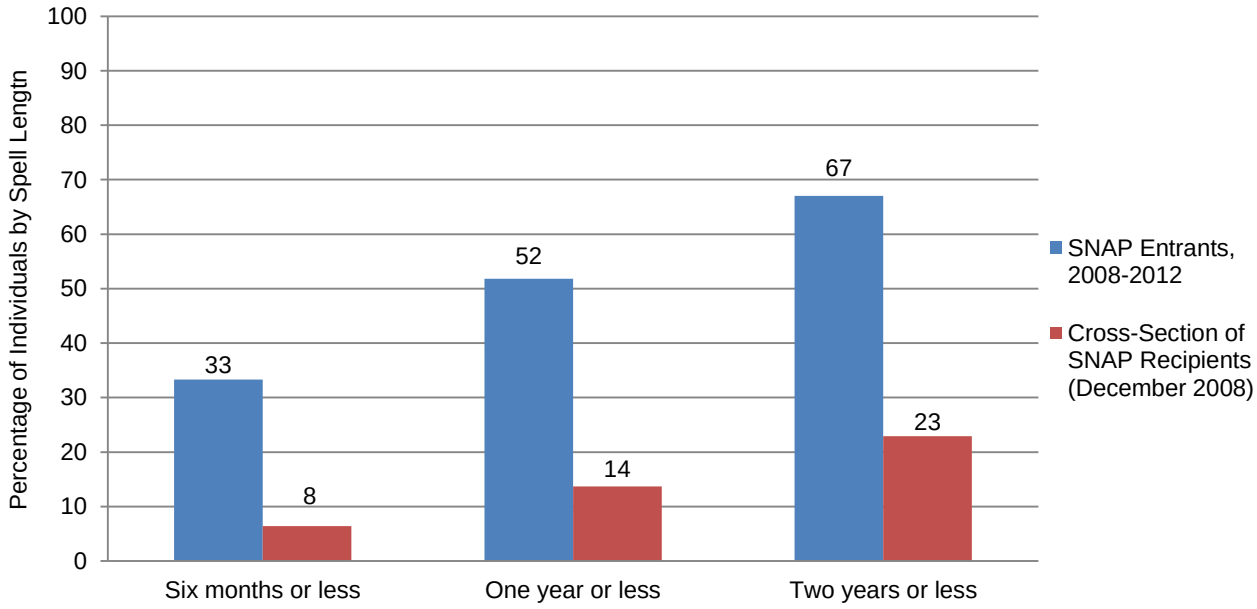
At the beginning of the study period, there were many people who were already on the SNAP program. Another way to understand length of spells is to measure such *existing* spells by

[2] This group includes nondisabled adults age 18-59 in childless households. Some of these individuals are subject to work requirements and a time limit, and are also known as "ABAWDs," able-bodied adults without disabilities.

capturing a snapshot of all individuals on SNAP at a given point in time. This snapshot, or cross-sectional sample, is made up of everyone who was on SNAP in December 2008, an early point in the study period. SNAP participation for these individuals is calculated by looking back to when the individual joined the program (even if it occurred before the study period), and forward to the end of the spell. Of this cross-section of participants, 14 percent had a spell on SNAP that lasted one year or less; just under one-quarter had a spell that lasted two years or less, and about 29 percent had a spell that lasted three years or less. It takes five more years for another quarter of the December 2008 participants to exit the program. In other words, the median spell of the cross-sectional sample was eight years. This spell duration is much longer than the median spells seen in the mid-1990s through the early 2000s, which ranged from 4.0 to 4.5 years, but it is close to the median spell of the mid-2000s, which was about seven years.

Figure 2 illustrates the SNAP spell lengths of new entrant and existing spells. While one-third of new SNAP spells end within six months, only eight percent of spells measured among the cross-sectional sample end within that time. Similarly, two-thirds of new SNAP spells come to an end within two years, but less than one-quarter of cross-sectional spells last that short a time. Both measures of the time spent on SNAP are needed to tell the complete story. The sample of new spells captures shorter spells that can be described in detail with information from the full SIPP survey; most of the study is based on new spells. New spells start throughout the study period, so the maximum length of time a new spell can be tracked in this analysis is 51 months. The cross-sectional sample can characterize longer spells—there are some participants who have received benefits continuously since the 1960s.

Figure 2 Comparison of Cumulative Spell Lengths of SNAP Participation Spells Among Entrants and a Cross-Section of Participants



Source: Decision Demographics tabulations of the 2008 SIPP panel.

SNAP Exit

Indicators of an improvement in financial circumstances or reduced need for families on SNAP are referred to in this study as "exit triggers." The most common of the events identified as possible exit triggers are increases in family income from earnings and increases from unearned income; about two-thirds of participants experienced each event at some time during the panel. An increase in earnings within the previous four months was more commonly associated with an exit than was an increase in other income. Nearly one in five of those who experienced an increase in earnings left within four months of the increase. Other triggers we examined did not occur as often as the income increase, but they were associated with a similar percentage of participants exiting within four months. Changes in family composition were examined, for example, and for 50 to 55 percent of participants, a family member (either with or without income) left the household. In close to 20 percent of these cases, the participant also left SNAP within four months.

Of those exiting SNAP, nearly 30 percent did not experience a trigger event related to improved financial circumstances or reduced need, as measured by changes in income and family composition. However, over 70 percent of SNAP "exiters" experienced at least one trigger event within the four-month window, with 37 percent experiencing multiple events.

The likelihood to exit SNAP differs for people in different demographic or economic circumstances as measured at the start of their spell on the program. Of SNAP participants in families with children that experience an increase in earnings, 18 percent exit the program within four months, compared with 25 percent of participants in families without children who experienced such an increase. Among those with income under 50 percent of poverty at the start of their participation spell, 13 percent exited within four months of experiencing an increase in earnings, compared with 31 percent for those with incomes from 130 to 200 percent of poverty, and 27 percent for those with income above 200 percent of poverty—with the comparison to poverty measured prior to the increase.

SNAP Re-entry

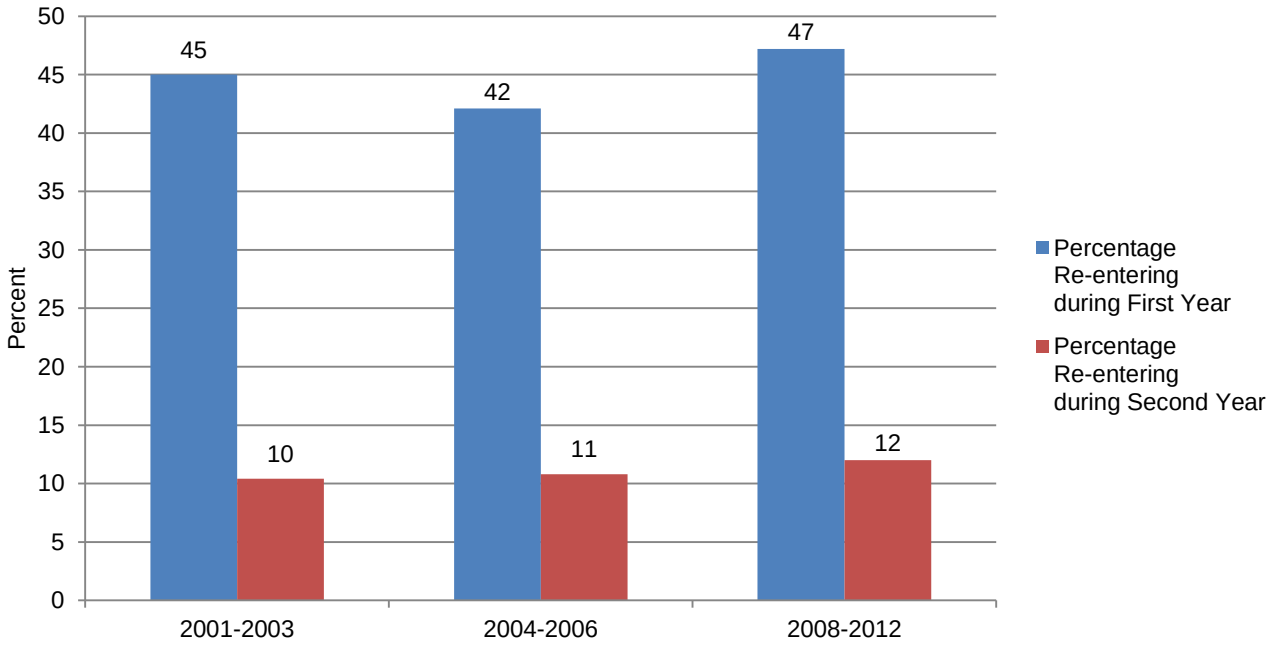
Re-entry is an important aspect of SNAP dynamics. Nearly 60 percent of SNAP participants who exited the program during the study period re-entered within two years. Forty-seven percent re-entered within one year of exiting, and another 12 percent re-entered within two years of exiting (Table 1). The one- and two-year re-entry rates for 2008-2012 are somewhat higher than those in the early and mid-2000s (Figure 3).

Table 1 Cumulative Rate of SNAP Re-entry within the Panel Period

Re-entering SNAP within Panel Period	Cumulative Percent
Within 6 Months	31.1
Within 12 Months	47.2
Within 18 Months	54.1
Within 24 Months	59.2

Source: Decision Demographics tabulations of the 2008 SIPP panel.

Figure 3 Percentages Re-entering SNAP, Comparisons Over Time

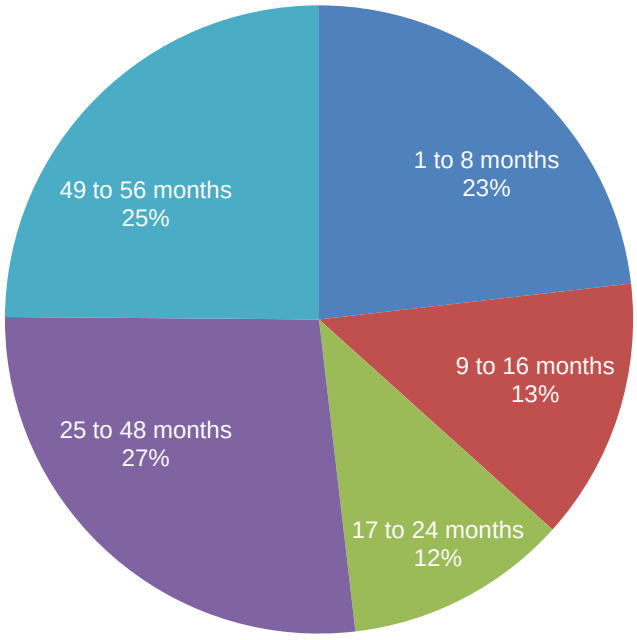


Sources: Decision Demographics tabulations of the 2008 SIPP panel; Mabli et al. (2011a) for 2004–2006; Cody et al. (2007) for 2001–2003.

Total Time on SNAP during the Panel Period

Total time on SNAP during the panel period is simply a count of how many months during the study period that a person receives SNAP benefits. Of the individuals who participated during the panel, about 23 percent were in the program for a total of eight months or less, and 25 percent for virtually the entire panel (Figure 4). The median total time on SNAP was 27 months (or nearly half of the possible 56 months). This compares to a median total time on SNAP of 17 months out of a possible 32 months during the mid-2000s. This finding suggests that individuals depend more heavily on SNAP than is indicated by the duration of new spells (for which the median length was 12 months).

Figure 4 Total Time Participants Spent on SNAP during the 56-Month Study Period

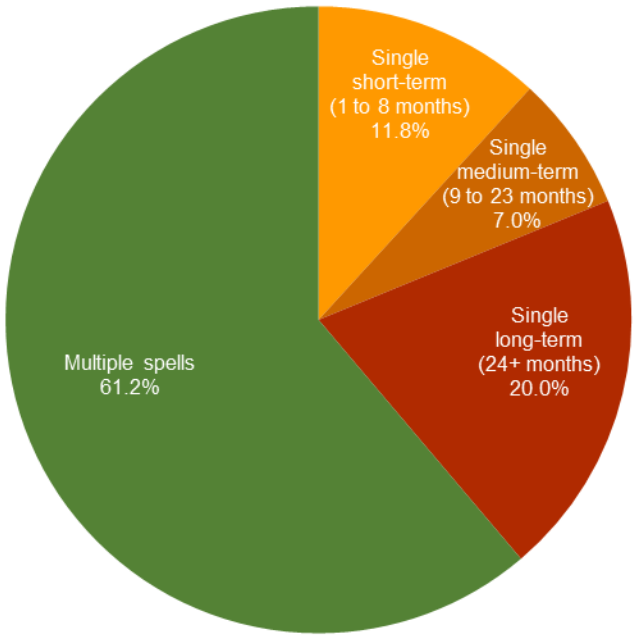


Source: Decision Demographics tabulations of the 2008 SIPP panel.

Multiple Spells

Many participants with short spells re-enter SNAP. When we include spells that occurred prior to the 2008 SIPP panel, over 60 percent of participants had multiple spells on the program (Figure 5). Among single-spell participants, the distribution of short-term, medium-term, and long-term spells remained roughly the same from the mid-2000s to the 2008 to 2012 time period, although the percentage that had a medium-term spell declined slightly, from 9 percent of all participants to 7 percent.

Figure 5 Length and Frequency of SNAP Participant Spells 2008–2012



Source: Decision Demographics tabulations of the 2008 SIPP panel.

SNAP Turnover

The annual turnover rate measures the size of the population that receives SNAP benefits at some point in the year in relation to the average size of the caseload that year. We estimate the average annual turnover rate to be 1.4 in 2009 and 1.3 in each of 2010, 2011, and 2012.[3] Thus, for 2009, caseworkers whose workload reached 500 participants in a single month served an average of 700 different participants over the course of the year, and for the other three calendar years, caseworkers with 500 participants in a single month handled an average of about 650 unique cases. This suggests that there is only a modest amount of turnover in SNAP participants over the course of a year. While there was an increase across years in the number of individuals

[3] We did not estimate turnover rates for 2008 because we only had sufficient SIPP data for the last three months (October through December) of the year.

receiving benefits in at least one month of the year, the average monthly number of individuals receiving benefits also increased each year, but by a slightly lower percentage, leading to a slightly declining turnover rate during the years covered by the panel.

Changes in SNAP Dynamics Over Time

Table 2 compares the measures of SNAP dynamics discussed in this report with the estimates from five earlier reports. In 2008 to 2012, the annual entry rate and median spell lengths reached all-time highs relative to the earlier study periods. The turnover rate was similar to that of the early 1990s, and a greater percentage of SNAP participants stayed on the program for longer than eight months compared to prior years. Replacement rates were lower than in the two previous studies, but slightly higher than they were in the late 1990s.

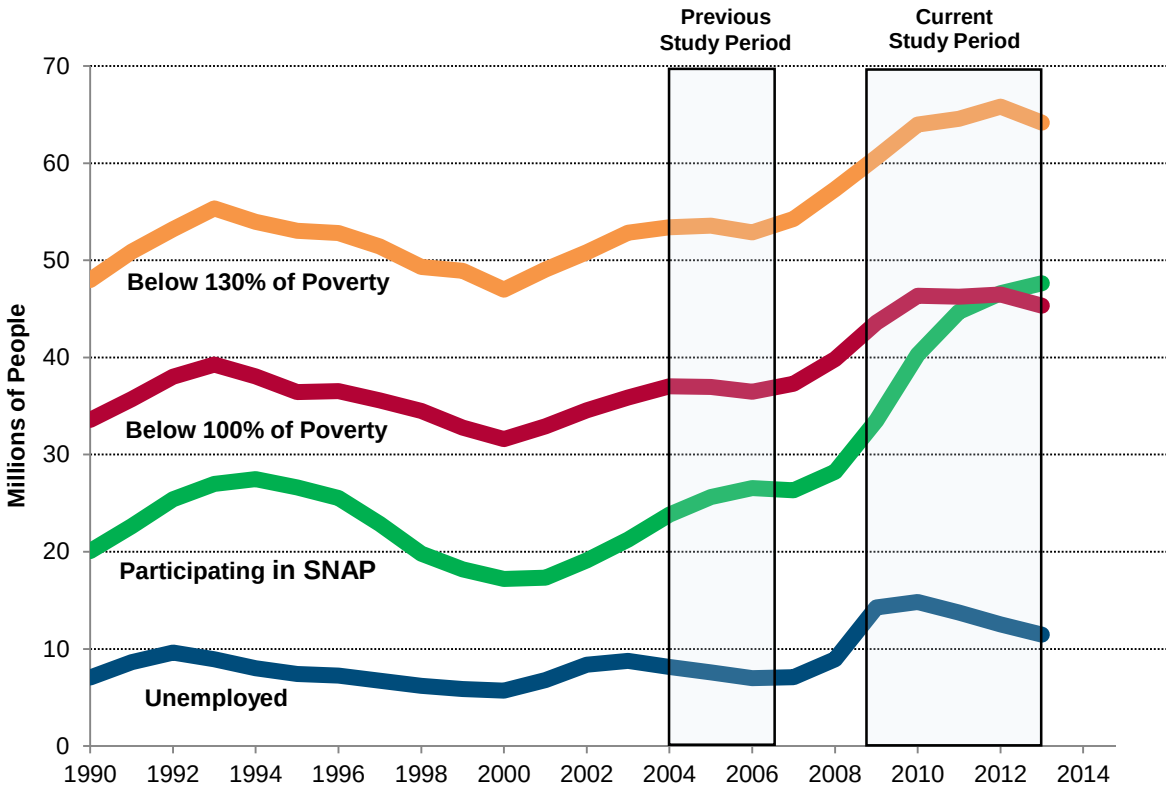
Table 2 Comparison of Primary Measures of SNAP Participation Dynamics

	1990–1993	1993–1996	1996–1999	2001–2003	2004–2006	2008–2012
Annual Entry Rate Among All Individuals (Percent)	2.6	NA	NA	3.3	3.0	4.7
Replacement Rate (Percent)	NA	4.2	3.8	5.4	4.1	3.9
Median Length for Entry Cohort (Months)	9	8	8	8	10	12
Median Cross-sectional Completed Spell Length (Months)	>96	54	54	48	84	96
Median Time Off Between Spells (Months)	20	NA	NA	16	20	16
Receiving Benefits for Total of Eight Months or Less in Panel Period (Percent)	27	NA	NA	37	30	23
Multiple Spells (Percent)	51	NA	NA	63	60	61
Average Annual Turnover Rate	1.3	NA	NA	1.5	1.4	1.3

Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006; Cody et al. (2007) for 2001–2003; Cody et al. (2005) for 1993–1999; Gleason (1998) for 1990–1993.

The growth in the size of the SNAP caseload from 2008 to 2012 occurred during a time of relatively high unemployment and high numbers of people in poverty. Figure 6 provides a longer view, tracing the number in poverty, number unemployed, and SNAP caseload from 1990 to 2012. Even when the unemployment rate began to drop and poverty levels flattened over 2010 to 2012, SNAP participation continued to rise. However, participation levels began to fluctuate and drop slightly in 2013 and 2014, after the end of the panel period, reaching 46.1 million by March 2014, the lowest since August of 2011.

Figure 6 Trends in Poverty, the SNAP Caseload, and the Number of Unemployed Individuals, 1990–2012



Sources: **Participating in SNAP:** SNAP Summary of Program Operations Data. Downloaded on April 23, 2014 from http://www.fns.usda.gov/pd/SNAPsummary.htm

Below 100% of Poverty: Downloaded on October 1, 2014 from http://www.census.gov/hhes/www/poverty/data/historical/hstpov2.xls

Below 130% of Poverty: Special tabulations of the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) by Decision Demographics.

Unemployed: Bureau of Labor Statistics. Downloaded on April 23, 2014 from http://www.bls.gov/webapps/legacy/cpsatab13.htm

For a caseload to grow, people must be entering the program at higher rates, staying in the program longer, or both—which is what occurred during 2008 to 2012. This continues a trend in SNAP dynamics observed during the early 2000s to the mid-2000s; yet while the economy was improving during the mid-2000s, it was in worse shape during much of the period covered by the most recent panel. As a result, the increases in entry and duration from the mid-2000s to the 2008 to 2012 time period were greater than those from the early to mid-2000s.

I. INTRODUCTION

The Supplemental Nutrition Assistance Program (SNAP) is the cornerstone of America's food assistance policy. In fiscal year 2013, an average of nearly 48 million people received SNAP benefits each month.[4] This monthly program caseload is not static; each month, new individuals enter the program while some participants exit. Investigating caseload dynamics provides information about what factors lead individuals to enter SNAP, how long individuals typically participate, and what factors lead them to exit the program. Caseload dynamics studies can show how individuals' participation decisions are affected by changes in individual circumstances, by overall economic conditions, and by program policies.

Typically, studies of program participation dynamics examine measures related to four key aspects of participation spells:[5]

1. ***Program Entry***. Key measures of entry are the number of people entering the program over a fixed period of time, such as in a month or year, in relation to the size of the population (entry rate) and the number entering in relation to the caseload size (replacement rate). Examining changes in program entry and replacement rates over time can help to explain overall trends in participant levels. Moreover, examining individuals' circumstances before they enter the program can help identify the factors that appear to influence individuals' participation decisions.
2. ***Length of Program Participation Spells***. Estimates of the length of participation spells can provide valuable insight into the degree to which individuals rely on SNAP once in the program. Spell length is measured from a number of perspectives. Entry cohort analysis measures the length of stay of individuals who enter SNAP around the same time period. Cross-sectional analysis measures the length of stay for those who are participating at a specified point in time. The cross-sectional analysis usually indicates longer participation spells than the entry cohort because the cross-sectional analysis includes the accumulation of entrants that do not exit quickly.
3. ***Program Exit***. Exit rates are the proportions of participants that exit the program over a fixed period of time. Like changes in entry rates, changes in exit rates over time can help explain changes in caseload size, and an examination of individuals' circumstances around the time of exit can help explain why individuals leave the program.
4. ***Program Re-entry***. Re-entry patterns measure the extent to which individuals cycle on and off a program. These measures tell us about how individuals use these programs.

This study examines participation dynamics for SNAP. We describe the characteristics of participation spells observed between October 2008 and December 2012 and show how they have changed over time for policy relevant subgroups. This work was conducted in conjunction with the analysis presented in the report, "Determinants of SNAP Participation from 2008 to

[4] Based on data from SNAP Program Operations division [http://www.fns.usda.gov/pd/34SNAPmonthly.htm] accessed on July 10, 2014.
[5] A Glossary of topical terms used in this Report can be found following the References.

2012."[6] That report examines the associations between program dynamics and (1) demographic and economic characteristics of families and (2) State economic and policy environments and how these associations have changed from the mid-2000s to the 2008 to 2012 time period. The two reports are closely related, despite their different emphases.

This is a particularly important time to study SNAP participation dynamics, specifically program entry and spell length, because the number of SNAP participants reached an all-time high in the wake of the Great Recession, the general economic downturn, and an associated increase in poverty and unemployment rates nationwide. During the same period, legislation from the American Recovery and Reinvestment Act (ARRA) raised benefits. The current study will help us understand if the increase in the number of SNAP participants was the result of more individuals entering the program than had entered in previous years, current participants staying on longer, or a combination of the two.

Our results provide evidence that the increase was due to a combination of more entries and longer spells than had been seen in the mid-2000s and earlier time periods. During the 2008 to 2012 time period, 7 out of every 1,000 low-income individuals[7] of all ages not receiving SNAP benefits in one month entered the program in the next month. This is higher than in the mid-2000s, when it was 5 out of every 1,000, and is likely due, in part, to rapidly worsening economic conditions throughout most of the time period. Turning to spell length, we find that half of the spells that began in the 2008 to 2012 time period ended within 12 months and two-thirds ended within 24 months. In contrast, the median spell length of participation was 10 months for those entering in the mid-2000s and it was eight months for those entering in the early 2000s.

The rest of this chapter provides background on SNAP, reviews the previous research on the dynamics of poverty and SNAP participation, describes the research objectives of this study, discusses the data used for the analysis, and presents an overview of the methods employed. Chapter II of this report discusses the characteristics of SNAP participation spells observed in the 2008 to 2012 period. Chapter III presents key results for many policy relevant subgroups and compares these findings to earlier time periods. Chapter IV summarizes the results and provides recommendations for further research. A detailed assessment of the 2008 SIPP panel to identify potential problems in the data that could affect estimates of SNAP participation dynamics is found in Appendix A. Appendix B tracks how subgroup definitions have been modified over time to reflect changes in both data and analytical needs and provides details on the construction of new subgroups.

[6] Published December 2014.
[7] Low-income here is defined as individuals living in families with income below 300 percent of the federal poverty level at some point in the panel period. We discuss entry rates for individuals in other income groups in Chapter II.

A. Background on SNAP

SNAP provides monthly benefits that can be used to purchase food in nearly 250,000 authorized stores across the United States. Eligibility for the program is based primarily on financial need; in general, individuals must have income and assets below specified eligibility thresholds. Under federal rules, households without elderly or disabled members must have gross income less than 130 percent of the poverty level, net income less than 100 percent of poverty, and countable assets less than $2,000.[8] Households with elderly or disabled members must have net income less than 100 percent of poverty and countable assets less than $3,250.[9]

Certain households are categorically eligible for SNAP and, therefore, are not subject to the federal income and asset limits. Benefits for these categorically eligible households are determined under the same rules that apply to other eligible SNAP households and the level of benefits received is based on household income. All States confer categorical eligibility to SNAP households in which all members of the household receive or are authorized to receive Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), or General Assistance (GA) benefits. These households are known as pure public assistance households.

Over the past 15 years, categorical eligibility has expanded, eliminating certain verification requirements and simplifying the application and eligibility-determination process for a much larger group of households. In 2000, a broader interpretation of existing categorical eligibility rules was implemented, requiring States to confer categorical eligibility on families receiving or certified as eligible to receive benefits or services—such as employment assistance, child care, or transportation assistance—that are at least 50 percent funded by TANF or Maintenance of Effort funds.[10]

Many States have broad programs that provide a TANF/Maintenance of Effort-funded noncash benefit to confer categorical eligibility for SNAP on a large number of households. These policies are known as broad-based categorical eligibility policies. States have flexibility in setting the criteria for receiving the TANF/Maintenance of Effort-funded noncash benefit, but most apply only a gross income eligibility limit—between 130 and 200 percent of SNAP poverty guidelines—and have eliminated the net income test. Most categorically eligible households are not subject to the SNAP asset test. Additionally, in some States, households participating in more

[8] Net income represents the amount of income that households have available to use for food. It equals gross income less a standard deduction, an earnings deduction, and deductions for dependent care, medical expenses and shelter expenses. Countable assets are primarily financial assets and in some States, some vehicle assets.

[9] The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) indexed the asset limits to inflation, adjusting them to the nearest $250 increment each fiscal year. Through fiscal year 2011, the asset limit for households with elderly or disabled members was $3,000. It increased to $3,250 beginning in fiscal year 2012.

[10] In addition, States have the option of conferring categorical eligibility on families receiving or certified to receive benefits or services that are less than 50 percent funded by TANF/Maintenance of Effort. They may also confer categorical eligibility on households in which at least one member receives the benefit or service; the State determines whether the entire household benefits.

narrowly targeted noncash TANF-funded programs, such as work support, child care, diversion assistance, transportation, and other short-term assistance, may also be categorically eligible for SNAP.

Certain individuals are categorically ineligible for SNAP and cannot receive benefits even if they pass the income and asset requirements. The program's nonfinancial eligibility standards restrict the participation of certain students, strikers, individuals who are institutionalized, fleeing felons, drug felons, unauthorized immigrants, nonimmigrant visitors to the United States, and some lawful permanent resident noncitizens.

A household's SNAP benefit level equals the maximum SNAP benefit for a household's size and location, minus 30 percent of their net income. Maximum benefit levels are the same in the contiguous United States, cost of living adjustments made for Alaska, Hawaii, Guam, and the Virgin Islands, where food prices are significantly higher. Through March 2009, maximum benefits were set equal to the cost of the Thrifty Food Plan, the USDA's lowest-cost food plan, and were updated annually. ARRA then temporarily raised the maximum benefit beginning in April 2009 to 113.6 percent of the June 2008 Thrifty Food Plan and held it at that level thereafter. As specified in subsequent legislation, the increase expired on October 31, 2013, when the maximum benefit reverted to 100 percent of the cost of the Thrifty Food Plan in the preceding June.

Several factors, alone or in combination, may lead an individual to enter the program. Some individuals may enroll as a result of a change in personal financial circumstances; others, who are already eligible to begin with, may enroll because they recently learned about the program or about their own eligibility through program outreach or other sources; still others may enroll because they are concurrently enrolled in other public assistance programs, such as TANF or SSI.

Once an individual is enrolled, the length of the participation spell can be affected by numerous circumstances. A loss of eligibility, for instance, influences spell length by triggering program exit. In general, SNAP households are required periodically to report changes in income that may affect their eligibility and to be recertified for eligibility. Thus, individuals whose income increases beyond the eligibility limits are likely to exit the program at the time of income reporting or recertification.

In addition to loss of eligibility, the following other factors may prompt program exit:

- Failure to comply with program rules, including reporting requirements and the work requirements for certain nonelderly nondisabled childless adults (also known as "ABAWDs")
- Life events, such as moving, moving into group quarters, or death
- A household decision that benefits are too low to be worth the effort of complying with administrative requirements in the program

For most SNAP participants, there are no limits on the number of times they can participate in the program or on the total amount of time they can receive benefits as long as they meet the eligibility requirements.[11] Thus, individuals whose financial circumstances and other needs fluctuate over time may have multiple spells of participation.

Congress and SNAP administrators modify the program's rules in response to changing economic situations and State needs. Over the past 12 years, States have been given increasing flexibility to alter program rules and procedures. Key program changes that occurred in the years just prior to or during the study period included:

(1) the temporary ARRA increase to the maximum benefit,

(2) the option, beginning with ARRA implementation in April 2009, to suspend time limits on benefits for certain nonelderly nondisabled childless adults, and

(3) the indexing of the asset limits to inflation.

Other changes included the following:

- ***Minimum Benefits***. The 2008 Farm Bill increased the minimum benefit for one- and two-person households in October 2008, raising it from $10 for all one- and two-person households to 8 percent of the maximum benefit for a one-person household. Because it is derived from the maximum benefit, the minimum benefit increased again in April 2009 with the passage of ARRA, and varies by geographic region. It then decreased on October 31, 2013, when ARRA expired.
- ***Changes in State Broad-Based Categorical Eligibility Policies, Asset Limits, and Vehicle Rules.*** The number of States (including the District of Columbia, Guam, and the Virgin Islands) with broad-based categorical eligibility policies has increased from 18 at the beginning of fiscal year 2008 to 43 by fiscal year 2013. Of the 43 States with a broad-based categorical eligibility policy in effect throughout FY 2013, only five used an asset test. By September 2013, 29 States had adopted rules that exclude all vehicles from the asset test for non-broad-based categorically eligible households. These changes were intended to make it easier for low-income workers to keep a vehicle and still receive SNAP benefits.
- ***Outreach***. States continued to increase program outreach so that individuals in need of assistance knew that SNAP benefits were available and how to apply. In recent years, an increased number of States have positive outreach expenditures. In particular, the number of States without any federal or State outlays for outreach expenditure decreased from 24 in 2006 to 12 by December 2012.
- ***Changes in Certification Periods.*** The SNAP certification period is the length of time a household has before it must effectively reapply for benefits. Certification periods differ depending on State guidelines and household circumstances. For example, beginning in the mid-2000s, and in tandem with the changes in reporting requirements described next,

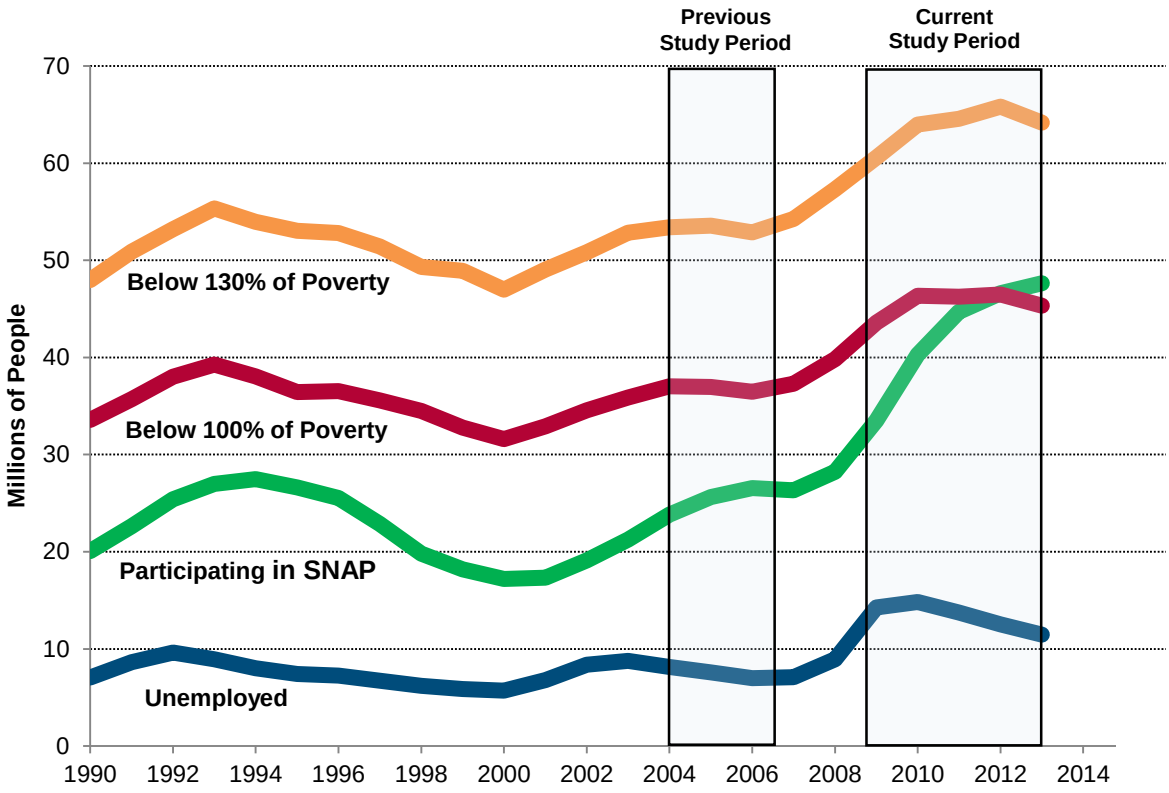
[11] SNAP participants age 18 to 49 who are not disabled and do not have any dependents in their household are subject to work requirements to receive SNAP benefits for more than three months in a 36-month period. Some may be exempt from the work requirement for various reasons. Additionally, ARRA temporarily gave states the option to remove time limits on benefits for all participants in the state.

many States provided longer certification periods for some participants and some offered 24-month certification periods for households in which all members were elderly. Average certification periods increased slightly from 11.8 months in fiscal year 2006 to 12.7 months in fiscal year 2013.

- ***Changes in Reporting Requirements***. Reporting requirements govern how a participating household must report changes in their income during certification periods. Previous SNAP rules required all income changes over $25 to be reported. Recent policy options allow States to simplify these rules. The *simplified reporting* option allows clients not to report any changes in income during their certification period, so long as their income does not exceed 130 percent of poverty. *Status reporting* requires a client to report only when a household member has a change in jobs, receives a different rate of pay, or shifts from part-time to full-time work (or has a similar change in employment status); income changes due to different hours of work do not need to be reported. These two policy options are not mutually exclusive. By August 2012, all States except California allowed simplified reporting.
- ***SSI Combined Application Project (SSI CAP).*** Some States simplify the application procedures and benefit calculation for individuals who are receiving SSI benefits. Qualified individuals (typically SSI recipients living alone or only with other elderly household members) complete a streamlined SNAP application and receive a set SNAP benefit or standardized "high" or "low" shelter expense deduction based on the limited information they provide, such as shelter expenses. The number of States with SSI CAP programs increased from 8 in fiscal year 2006 (the last year of the mid-2000s Dynamics study) to 18 in fiscal year 2013.

Participation in SNAP has nearly doubled since the mid-2000s. The average monthly caseload increased from 24 million in 2004 to 28 million in 2008 and then to nearly 47 million in 2013 (Figure I.1). The caseload peaked at 47.6 million in FY 2013 before declining modestly to 46.5 million in FY 2014. The increase during the late 2000s can be attributed to the recession and the accompanying high poverty and unemployment rates, as well as the ARRA increase in benefits.

Figure I.1 Trends in Poverty, the SNAP Caseload, and the Number of Unemployed Individuals, 1990–2012



Sources: **Participating in SNAP:** SNAP Summary of Program Operations Data. Downloaded on April 23, 2014 from http://www.fns.usda.gov/pd/SNAPsummary.htm

Below 100% of Poverty: Downloaded on October 1, 2014 from http://www.census.gov/hhes/www/poverty/data/historical/hstpov2.xls

Below 130% of Poverty: Special tabulations of the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) by Decision Demographics.

Unemployed: Bureau of Labor Statistics. Downloaded on April 23, 2014 from http://www.bls.gov/webapps/legacy/cpsatab13.htm

B. Previous Research on Dynamics

This study builds on a variety of previous studies examining the movement of people in and out of public assistance programs. Several studies have examined the dynamics of entry into and exit from poverty. These studies are relevant because they use methods similar to those of studies examining program participation dynamics, and they track the population generally targeted by SNAP. Other studies have examined SNAP participation dynamics specifically. While these studies focus primarily on reasons for program entry and exit along with length of program participation spells, some also examine program participation over an individual's lifetime, and others identify factors related to caseload growth and decline.

1. Research on Poverty

The populations eligible for SNAP overlap with the populations that are in poverty. Consistent findings emerging from the large body of poverty research are that (1) poverty touches many people at some point in their lifetime; (2) close to half of spells of poverty end within a year; (3) at any point in time, most people in poverty are in the middle of long-term poverty spells; (4) most poverty entries and exits are triggered by changes in employment—for various household members in addition to the household head; and (5) black and white individuals have markedly different poverty rates. Below, we begin by reviewing some of the most influential studies of the 1980s and 1990s and then present information from more recent studies on poverty.

Studies of entry into poverty over a person's lifetime generally use the Panel Study of Income Dynamics (PSID). Using PSID data on children up to age 4 at the start of the PSID data collection in 1968, Duncan and Rogers (1988) found that about one-third of these children entered poverty within 15 years, and another 18 percent were near poor (defined as between 100 and 150 percent of poverty) during the same period. Twelve percent lived in poverty for 5 or more years. Almost 80 percent of black children, however, were found to enter poverty for some period in these 15 years, and almost 47 percent would stay in poverty for 5 or more years. Also using the PSID, Rank and Hirschl (1999) found similarly high probabilities of poverty entry at some point in adult life; they estimated that by age 40, over one-third of adults (age 20 and over) would experience poverty, and that more than half would experience poverty by the time they were 65 years old. Again, the estimates varied substantially by race, so two-thirds of black adults could expect to enter poverty by the time they were 40 years old and 84 percent by the time they were 65 years old.

Other researchers also have noted that although a sizeable portion of the population has extended poverty spells, poverty spells are short for most people. Long-term spells accumulate over time, however, so that even if a small proportion of poverty spells are long, the cumulative effect is that in a given month, most of the population in poverty is in the midst of a long spell. Duncan and Rogers (1988) estimated that the average spell for children over the 15-year period was 1.5 years (0.9 years for non-black children and 5.5 years for black children). Bane and Ellwood (1986), who also used the PSID, found that about 45 percent of the population exit poverty within a year of entering. At a given point in time, though, the study estimated, slightly over 50 percent of the people in poverty would be in a spell that would last 10 or more years.

More recently, Hirschl et al. (2009) extended the research on the length of poverty spells through examining the incidence, duration, and age pattern of poverty in America and changes in these measures from 1968 to 2000. They found that the risk of short-term poverty increased substantially, especially in the 1990s, while the risk of chronic poverty declined. (The authors measured chronic poverty by the percentage of the poor who experienced five or more years of poverty within a 10-year interval.) Their findings suggest that more Americans were at risk of

poverty in the 1990s than in the 1970s and 1980s, but fewer Americans experienced long periods of chronic poverty.

McKernan and Ratcliffe (2002), Bane and Ellwood (1986), and Duncan and Rogers (1988) examined household events that trigger entry into and exit out of poverty. Using the SIPP panels for the early 1990s and late 1990s, McKernan and Ratcliffe found that changes in employment were the most important triggers of poverty entry and exit in the late 1990s, although the role that earnings played declined between the early and late 1990s. They noted that the very large number of poverty entry and exits prompted by an employment change was due, in part, to the fact that so many households experienced this event. They found that even after controlling for other factors in a multivariate analysis, employment remained the primary influence on poverty entry and exit. Using the PSID, both Bane and Ellwood (1986) and Duncan and Rogers (1988) not only noted the importance of changes in earnings in relation to entries and exits, but also showed that any household member's earnings—not just the head's—could trigger an entry or exit. Indeed, these studies found that the employment of other household members could be just as important as, and in the case of poverty exits, even more important than, a change in the household head's earnings.

According to Bane and Ellwood (1986), entry was also triggered by a birth of a child, the onset of a disability, and a shift from a household with two adults to one headed by a single female. For poverty exits, additional triggers included an increase in education and a shift from a household headed by a single female to one headed by two adults. McKernan and Ratcliffe (2002) also found that in the early 1990s, before welfare reform, the shift in marital status of the household head played a more prominent role in entries and exits than it did in the late 1990s.

Iceland (1997) used the PSID to examine factors influencing poverty exits that were exogenous to the household, such as changes in the economic structure of metropolitan areas. Looking at two periods, 1970-1974 and 1979-1985, he found that a decline in the share of manufacturing jobs in metropolitan areas led to a decline in poverty exits for black individuals in both periods, and that an increase in the share of jobs in the service industry triggered a decline in poverty exits for black individuals during the second period. However, expansion in the retail/wholesale industry prompted more poverty exits for black individuals. With the exception of the growth in the service industry in the earlier period, which led to a rise in exits for white individuals, these changes in economic structure were not significant exit triggers for white individuals.

2. Research on SNAP Participation Dynamics

Studies of SNAP participation dynamics show that the events triggering SNAP entry and exit are similar to those triggering poverty entry and exit, and that patterns of SNAP entry and exit vary by subgroup, much like patterns of poverty entry and exit. In examining dynamics in the mid-1980s, Burstein (1993) found that the most common SNAP entry trigger was a decline in a household member's earnings, and that the most common exit trigger was an increase in a

household member's earnings. Similarly, Gleason, Schochet, and Moffitt (1998), which investigated SNAP participation dynamics in the early 1990s; Cody, Castner, Mabli, and Sykes (2007) studying the early 2000s; and Mabli et al. (2011a) studying the period from 2004 to 2006, also found that a drop in earnings preceded entry more often than other triggers and an increase in earnings preceded exit more often than other triggers.

Several studies have examined whether individuals experiencing trigger events are more likely to enter or exit SNAP if they are less accustomed to experiencing these changes in circumstances. Mabli and Ohls (2012) examine how long-term instability in employment affects the association between employment transitions and the decision to enter and exit SNAP. They found that employment changes are more strongly associated with program entry and exit for individuals who are less accustomed to experiencing fluctuations in employment. This finding is also supported by evidence presented in Cody et al. (2007) and Mabli et al. (2011b) for changes in household size, in addition to changes in employment.

Two recent applications of program dynamics to studying the effects of various SNAP policy provisions are provided by Ribar and Swann (2011) and Ribar, Edelhoch, and Liu (2008). Ribar and Swann (2011) used administrative records for SNAP applications and benefit spells in South Carolina for the period October 1996 to November 2007 to examine SNAP households' applications and participation spell lengths. They modeled the durations of participation spells to distinguish among exits that result from missed recertification, financial ineligibility, incomplete or missing information, and other reasons. They found that a household's application and participation history affect its subsequent application success and program tenure. For example, applicants who have recently been on SNAP are more likely to have their applications accepted than other applicants. Ribar, Edelhoch, and Liu (2008) also used a similar case-level administrative data set on SNAP households in South Carolina, from 1996 to 2003, to examine patterns in the timing of program exits. In particular, the study revealed a very strong influence coming from case certification lengths and timing in that households were more likely to leave the program during recertification months than in other months, although the authors note that the data were not sufficient to tell whether this mostly represented "cleaning" cases that had become ineligible or mostly represented administrative barriers to still-eligible cases.

Many other studies are also relevant to the current study (see Burstein, Patrabansh, Hamilton, and Siegel (2009) for a more detailed review). Several studies, for example, have examined SNAP participation in relation to the 1996 welfare reform. Atasoy et al. (2010) examined the degree of persistence in SNAP after the 1996 welfare reform; Heflin (2004) examined the relationship between work status, welfare receipt, and SNAP receipt among women in the post-welfare reform era; and Mills, Dorai-Raj, Peterson, and Alwang (2001) examined the factors that influenced program exit decisions of single female-headed families with children shortly after the 1996 welfare reform. A collection of studies found in Jolliffe and Ziliak (2008) also contains several studies of SNAP dynamics, including Moffit and Ribar (2008). They find medium-term earnings variability to be negatively associated with program participation for low income

households, and attribute this result partially to the variability in eligibility produced by changes in earnings.

Collectively this set of studies, particularly the dynamics reports written for FNS (Burstein 1993; Gleason et al. 1998; Cody et al. 2007; Mabli et al. 2011a; and Mabli et al. 2011b), as well as an analysis by Cody, Gleason, Schechter, Satake, and Sykes (2005) of entry and exit rates throughout the 1990s and by Murphy and Harrell (1992) of long-term participants in the late 1980s, contributed substantially to our understanding of SNAP program dynamics. The following other important findings are generally consistent across the studies and confirm many of the results identified above for poverty:

- Household or family composition changes play a significant role in triggering entries, re-entries, and exit.
- Most people who enter the program exit within one year.
- At any one point in time, most participants are in the middle of a spell of four or more years.[12]
- Of those who exit the program, one-third or more re-enter within one year.

However, these and other studies indicate some noteworthy differences in dynamics from one study period to the next. The median spell for persons entering SNAP in the early 1980s lasted six months; the early 1990s, nine months; the mid-1990s, eight months; the early 2000s, eight months; and the mid-2000s, 10 months (Burstein 1993, Gleason et al. 1998, Cody et al. 2005, Cody et al. 2007, Mabli et al. 2011a, respectively). Wilde (2001) and Cody et al. (2005) also used the SNAP Control (SNAP QC) data to develop similar estimates for 1990-1999; Wilde estimated that the median spell duration for new entrants was seven months, while Cody et al. found it to be six months. When examining how entry and exit rates contributed to the growth and decline of SNAP caseload, Gleason et al. (1998) found that the increase in the caseload in the early 1990s was a result of an increase in the duration of SNAP spells, whereas Cody et al. (2005) identified increasing entry rates as the larger contributor (though longer spells were found to play a substantial role). Table I.1 compares the time frames, data, and study objectives across several of these studies. Figure I.2 illustrates the change in the caseload size in relation to each of these study periods.

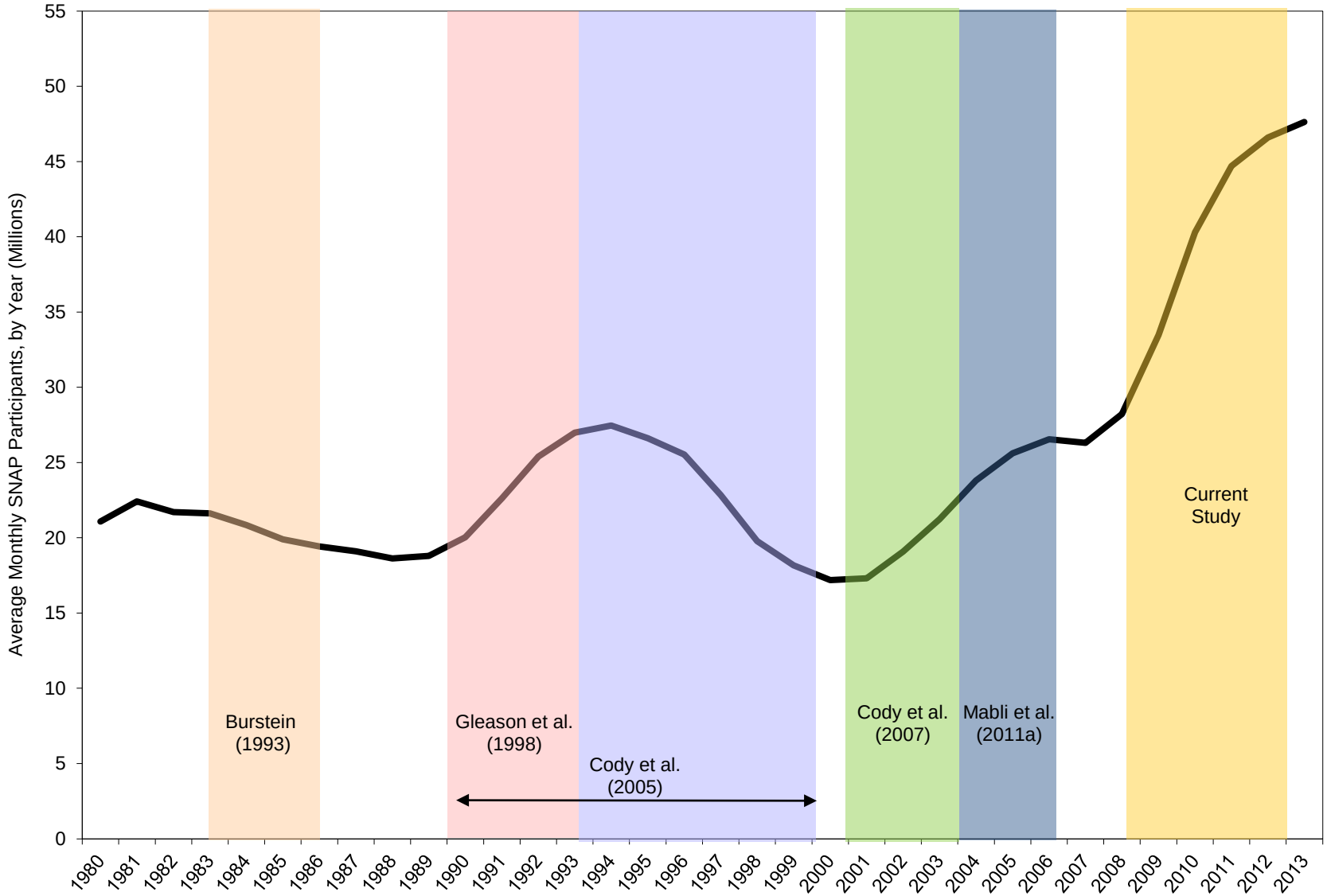
[12] Although most people who enter SNAP remain participants for a year or less, the longer term spells accumulate. Thus, over time, the cumulative effect is that more participants at a given point in time are in the midst of a long-term spell than in the midst of a short-term spell.

Table I.1 Historic Comparison of SIPP Panels Used in Past SNAP Dynamics Studies: Timing, Design, Sample

SIPP Panel and Study	1984 Burstein (1993)	1991 Gleason (1998)	2001 Cody et al. (2007)	2004 Mabli (2011a)	2008 Current Study (2014)
Time Period	1983–1986	1990–1993	2001–2003	2004–2006	2008–2012
UNDERLYING SIPP DATA					
Fielding began in:	October	February	February	February	September
Common Months in Waves 1 and 2	NA	Jan and May 1991	Jan and May 2001	Jan and May 2004	Aug and Dec 2008
Waves Used	Waves 4-8 (of 9)	Waves 1-8 (of 8)	Waves 1-9 (of 9)	Waves 1-8 (of 12)	Waves 1-14 (of 16)
Entrant At-risk Months	NA	32	33 month (months 3-35)	29 months (months 3-31)	53 months (months 3-55)
Sample Size	21,000 households	35,000 households	31,000 households	51,000 households	52,000 households
Attrition by end of last wave used	22 percent	21 percent	32 percent	37 percent	51 percent
Effective Sample Size	Approximately 16,000 households	Approximately 27,500 households	Approximately 21,000 households	Approximately 32,000 households	Approximately 25,000 households
STUDY METHODOLOGY					
Descriptive Analysis	Entry, Exit, Re-Entry,Duration, Entry/Exit Triggers	Entry, Exit, Re-Entry,Duration, Entry/Exit Triggers, Total Time On, Turnover	Entry, Exit, Re-Entry, Duration, Entry/Exit Triggers, Total Time On, Turnover, Growth, Replacement	Entry, Exit, Re-Entry,Duration,Entry/Exit Triggers,Total Time On, Turnover, Growth, Replacement, Subgroups	
At-risk population for entry rates	Nonparticipating individuals; HH inc < 300% poverty	Nonparticipating individuals	Nonparticipating individuals with family income <300% poverty		
Household / Family Composition	Based on relationships and characteristics within **the entire household** or dwelling unit		Based on relationships and characteristics within the family—all those related to the household head		

Sources: Current study for 2008; Mabli et al. (2011a) for 2004; Cody (2007) for 2001, Gleason (1998) for 1991; Burstein (1993) for 1984; National Research Council (2009).

Figure I.2 SNAP Caseload and SNAP Dynamics Study Periods



Source: SNAP Summary of Program Operations Data. Downloaded on April 23, 2014 from http://www.fns.usda.gov/pd/SNAPsummary.htm

C. Study Objectives and Research Questions

As described in the introduction, the purpose of this study is to advance knowledge of SNAP participation dynamics in the period 2008 through 2012. Two key study objectives are as follows:

A. Develop measures of recent SNAP participation dynamics, including entry rates, spell lengths, exit rates, and re-entry rates, comparable to previous estimates.
B. Describe the participation dynamics of subgroups.

This section presents the specific research questions we address under each of these key study objectives.

Objective A: Update SNAP Participation Dynamics

Earlier work by Burstein (1993), Gleason et al. (1998) Cody et al. (2007), and Mabli et al. (2011a) developed estimates of SNAP participation spell lengths by subgroups of individuals; estimates of rates of SNAP entry, exit and re-entry; estimates of the importance of individuals' circumstances on SNAP entry and exit; and estimates of measures of participation over time. We will replicate this research using the 2008 SIPP panel, guided by the following research questions:

1. **SNAP Entry** (Chapter II.A)

- What are entry rates in the period covered by the 2008 SIPP panel for all individuals "at risk" of entry (below 300% of poverty and not on SNAP) and for SNAP subgroups? Have these changed since the mid-2000s?
- Do rates of entry vary by income level? How sensitive are the findings on program entry to the definition of the population at risk (for example, below 100% of poverty)?
- How do the answers to the above research questions compare to the findings in the studies for the earlier periods?
- Is the benefit increase stemming from ARRA associated with increased program enrollment? Did the benefit increase seem to play a role in the number of entrants at the upper end of the income eligibility spectrum participating in the program?

2. **Spell Length** (Chapter II.B)

- How long are participation spells for recent entrants? How do these vary among different SNAP subgroups?
- How long are spell lengths for participants when viewed at a specific point in time?
- How do the answers to the above research questions compare to the findings in the studies for the earlier periods? Specifically, were new SNAP spells longer in the 2008 panel than in previous Dynamics studies due to the weakened economy?

- To what extent can the lengths of SNAP spells be attributed to new sources of employment? How quickly after finding new employment do recent SNAP entrants leave the program? Is this different for SNAP participants who have been on the program longer? Do newly employed participants retain benefits due to uncertainty in economic circumstances?
- Did the benefit increase stemming from ARRA seem to play a role in increased spell lengths?

3. Spell Exit (Chapter II.C)

- What are exit rates in the period covered by the 2008 SIPP panel for all individuals "at risk" (below 300% of poverty and not on SNAP) of exits and for SNAP subgroups? Have these changed since the mid-2000s?
- Do rates of exit vary by income level?
- How many individuals leave SNAP in the period covered by the 2008 SIPP panel for reasons that are not related to improved financial circumstances or reduced need as measured in SIPP?
- Is it possible to identify financial from non-financial reasons for leaving SNAP?
- How do the answers to the above research questions compare to the findings in the studies for the earlier periods?

4. SNAP Re-entry (Chapter II.D)

- What proportion of participants who exit SNAP return to the program within six months, within a year, or within 2 years? What is the median time off SNAP between participation spells? How do re-entry patterns vary among different subgroups?
- Do re-entry rates vary by income level?
- How do the answers to the above research questions compare to the findings in the studies for the earlier periods?

5. Summary Measures (Chapter II.E)

- What proportion of the caseload has single short spells (1-8 months), single medium-term spells (9-23 months), single long spells (24+ months), or more than one spell during the SIPP panel period?
- What participant characteristics distinguish those who have longer spells, frequent spells, or spend a significant proportion of the panel time on SNAP from those who only use the program for a short single spell, or a small proportion of the panel time?
- What dynamics explain the participation growth that occurred in from 2008 to 2012? What are the replacement and exit rates in this period?
- What is the turnover rate (the ratio of all participants ever on SNAP during the year over the average monthly number of participants) for SNAP participants in each year covered by the 2008 SIPP panel?

- Were turnover rates different between waves of the panel? Were spells in the late 2000s different from spells in the early 2000s?
- How do the answers to the above research questions compare to the findings in the studies for the earlier periods?
- Based on the assessment of the 2008 SIPP panel data, what are the patterns of one- and two-month gaps in benefits that are attributed to churning? Does the incidence of churning correlate to any participant characteristics or administrative milestones, such as recertification periods? What are the lengths of spells prior to and following the gaps? (Appendix A)

Objective B: Describe the Participation Dynamics of Subgroups

The SNAP caseload is by no means a homogenous population, but rather is comprised of many distinct subgroups, characterized by such distinctions as family composition, demographics, and sources of income. The typical lifecycle of SNAP cases—from entry through duration, exit, and re-entry—varies substantially across these distinct subgroups, and SNAP participation dynamics within the subgroups have evolved over time, contributing to composition and participation behavior changes in the total caseload. This objective explores these distinctions, as documented in a series of Dynamics studies based on past SIPP panels, specifically encompassing the following research questions (all of which are addressed in Chapter III.B and III.C):

- How do participation dynamics compare across key SNAP participation subgroups, and what can a SNAP dynamics analysis reveal about the unique character of each subgroup?
- How have the participation patterns of individual subgroups changed over time and how does this affect the total SNAP caseload?
- Prior to welfare reform, single parents comprised a relatively small share of the population of persons with income below 300 percent of poverty, but because they were much more likely to come on the program and because they had longer participation stays, they represented a much larger share of the SNAP caseload. Is that still true today?
- How do the Dynamics of adults and children in single parent households compare to those in households with married parents or unrelated adults? How do the differences between these Dynamics explain the composition of the SNAP caseload? What insights about the characteristics of the SNAP caseload a can be told by examining the Dynamics of other groups and comparing them to one another?

D. Data

This study relies primarily on data from the 2008 panel of the SIPP. This section provides background on the SIPP data and discusses key issues regarding potential response errors in the SIPP.

1. An Overview of the Survey of Income and Program Participation 2008 Panel

The analysis is based on data from the 2008 SIPP panel, the last "classic SIPP" panel; its characteristics are summarized in Table I.2. Used to study SNAP dynamics for three decades, SIPP is a nationally representative, longitudinal survey of the civilian non-institutionalized population. Because of SIPP's longitudinal structure and focus on income, employment, and government transfers over time, it is particularly useful for studying program dynamics, including program entry, exit, and re-entry, as well as how participants' changes in employment, income, family composition, and other characteristics coincide with SNAP participation changes. The principal difference between the classic, original SIPP design and the design of the SIPP panel that started in 2014 is that the four-month interview cycle has been replaced with an annual interview, using an Event History Calendar to help respondents with the new 12-month reference period.

Table I.2 Summary of the 2008 SIPP Panel

Purpose	Collect income, labor force information, program participation, demographic characteristics
Design	Multistage-stratified sample; longitudinal
Sample Size	Approximately 52,000 households interviewed in Wave 1 Panel size by end of Wave 14 is approximately 25,000 households due to sample attrition
Interview Period	Households interviewed every four months about previous four months; September 2008 to December 2013 (This study uses the first 14 waves, interviewed through April 2013.)
Data Time Period	Four months preceding interview: May 2008–December 2012
Historical Data	Program participation (e.g., SNAP benefit receipt) prior to 1st month of household's panel period
Universe	Civilian, noninstitutionalized population
Weighting	Full panel longitudinal weights assigned to those with data (possibly imputed) for full duration of panel or who left the universe or died before the end of the panel period; this study employs the Wave 1-14 longitudinal weight, weighted to population in January 2009; monthly cross-sectional weights available for each wave but not used in this analysis. [a]
Respondent	Household members age 15 and over; proxy interview for unavailable household members

Notes: [a] The current study uses the 14-wave longitudinal weights as released by the Census Bureau in March 2014. These weights subsequently underwent very minor revisions and were re-released in September 2014.

The Census Bureau collected 2008 SIPP data used in this study every four months, asking about each preceding month of the reference period, or wave. The sample in each wave consisted of four rotation groups, each interviewed in a different month. Once per wave, Census field staff asked panel members and everyone living with them at the time about their activities during the

preceding four months. The 2008 SIPP included a common set of core questions repeated at each interview that collects information on household and family composition, personal demographic characteristics, employment, income, and participation in a wide range of government assistance programs. Periodic "topical modules" collected data on specialized subject areas, such as previous participation in public assistance programs (also called "recipiency history"), employment history, citizenship,[13] child care costs, assets and liabilities, shelter costs, and work-related expenses. The topical module that focused on respondents' history of employment and program participation was administered in the first wave.

This analysis employs a longitudinal data set created by merging the first 14 waves, or 56 interview months, of the 2008 SIPP panel. As described in Table I.2, we base findings on data collected from September 2008 to April 2013, representing a reference period of May 2008 to December 2012. Because of the longitudinal nature of dynamics research, we include in our analysis only individuals who remained in the data for all 14 waves or died during that time.

The length and sample size of SIPP panels has varied over time. The Census Bureau fielded the first SIPP panel in 1984 with a sample of nearly 20,000 households interviewed over a period of two and one-half years. New panels of generally similar size started in nearly every year between 1984 and 1993, before a redesign replaced the overlapping panel design with an abutting panel design that allowed larger and generally longer-running panels. A four-year panel with nearly 40,000 households started in 1996 followed by a three-year panel of about 35,000 households in 2001 and a four-year panel of about 51,000 households in 2004. The first wave of the 2008 SIPP panel had 52,000 eligible respondents.

While the SIPP is fundamentally a longitudinal survey, it is designed to support cross-sectional as well as longitudinal analysis. To that end, the initial sample of households in the 2008 SIPP Panel was divided at random into four equally sized rotation groups that were interviewed on a staggered schedule—one rotation group per month (Table I.3). In the 2008 panel, the first rotation group was interviewed each September, January, and May and asked to provide data for the preceding four months (e.g., in September, respondents are asked to provide information for May, June, July, and August). In addition to distributing the workload evenly over the calendar year and thus permitting a set of interviewers to be dedicated to the SIPP, that rotation group design ensured that the data collected for any given calendar month was obtained in roughly equal proportions from respondents reporting on their activities of one, two, three, and four months ago. Accordingly, no calendar month of data was affected more or less than any other by recall bias or other error associated with distance from the interview.

[13] Citizenship became part of the core questions in the 2004 panel, remaining in the 2008 panel. It was a topical module question in all earlier panels.

Table I.3 SIPP 2008 Panel Timing

Interview #	Wave #	Interview date	Rotation Group	Earliest Reference Month of Wave	Common Month of Wave	Notes	Interview Refers to (previous 4 months): 1 month ago	2 months ago	3 months ago	4 months ago
1	1	Sep 08	1	May 08	Aug 08	1st at-risk/ entrant month: July 2008	**Aug 08**	Jul 08	Jun 08	May 08
2	1	Oct 08	2	Jun 08			Sep 08	**Aug 08**	Jul 08	Jun 08
3	1	Nov 08	3	Jul 08			Oct 08	Sep 08	**Aug 08**	Jul 08
4	1	Dec 08	4	Aug 08			Nov 08	Oct 08	Sep 08	**Aug 08**
5	2	Jan 09	1	Sep 08	Dec 08	Cross-section sample: December 2008	**Dec 08**	Nov 08	Oct 08	Sep 08
6	2	Feb 09	2	Oct 08			Jan 09	**Dec 08**	Nov 08	Oct 08
7	2	Mar 09	3	Nov 08			Feb 09	Jan 09	**Dec 08**	Nov 08
8	2	Apr 09	4	Dec 08			Mar 09	Feb 09	Jan 09	**Dec 08**
9	3	May 09	1	Jan 09	Apr 09		**Apr 09**	Mar 09	Feb 09	Jan 09
10	3	Jun 09	2	Feb 09			May 09	**Apr 09**	Mar 09	Feb 09
11	3	Jul 09	3	Mar 09			Jun 09	May 09	**Apr 09**	Mar 09
12	3	Aug 09	4	Apr 09			Jul 09	Jun 09	May 09	**Apr 09**
13	4	Sep 09	1	May 09	Aug 09		**Aug 09**	Jul 09	Jun 09	May 09
14	4	Oct 09	2	Jun 09			Sep 09	**Aug 09**	Jul 09	Jun 09
15	4	Nov 09	3	Jul 09			Oct 09	Sep 09	**Aug 09**	Jul 09
16	4	Dec 09	4	Aug 09			Nov 09	Oct 09	Sep 09	**Aug 09**
17	5	Jan 10	1	Sep 09	Dec 09		**Dec 09**	Nov 09	Oct 09	Sep 09
18	5	Feb 10	2	Oct 09			Jan 10	**Dec 09**	Nov 09	Oct 09
19	5	Mar 10	3	Nov 09			Feb 10	Jan 10	**Dec 09**	Nov 09
20	5	Apr 10	4	Dec 09			Mar 10	Feb 10	Jan 10	**Dec 09**
21	6	May 10	1	Jan 10	Apr 10		**Apr 10**	Mar 10	Feb 10	Jan 10
22	6	Jun 10	2	Feb 10			May 10	**Apr 10**	Mar 10	Feb 10
23	6	Jul 10	3	Mar 10			Jun 10	May 10	**Apr 10**	Mar 10
24	6	Aug 10	4	Apr 10			Jul 10	Jun 10	May 10	**Apr 10**
25	7	Sep 10	1	May 10	Aug 10		**Aug 10**	Jul 10	Jun 10	May 10
26	7	Oct 10	2	Jun 10			Sep 10	**Aug 10**	Jul 10	Jun 10
27	7	Nov 10	3	Jul 10			Oct 10	Sep 10	**Aug 10**	Jul 10
28	7	Dec 10	4	Aug 10			Nov 10	Oct 10	Sep 10	**Aug 10**
29	8	Jan 11	1	Sep 10	Dec 10		**Dec 10**	Nov 10	Oct 10	Sep 10
30	8	Feb 11	2	Oct 10			Jan 11	**Dec 10**	Nov 10	Oct 10
31	8	Mar 11	3	Nov 10			Feb 11	Jan 11	**Dec 10**	Nov 10
32	8	Apr 11	4	Dec 10			Mar 11	Feb 11	Jan 11	**Dec 10**
33	9	May 11	1	Jan 11	Apr 11		**Apr 11**	Mar 11	Feb 11	Jan 11
34	9	Jun 11	2	Feb 11			May 11	**Apr 11**	Mar 11	Feb 11
35	9	Jul 11	3	Mar 11			Jun 11	May 11	**Apr 11**	Mar 11
36	9	Aug 11	4	Apr 11			Jul 11	Jun 11	May 11	**Apr 11**

Table continues

Table I.3, *continued*

Interview #	Wave #	Interview date	Rotation Group	Earliest Reference Month of Wave	Common Month of Wave	Notes	Interview Refers to (previous 4 months): 1 month ago	2 months ago	3 months ago	4 months ago
37	10	Sep 11	1	May 11	Aug 11		**Aug 11**	Jul 11	Jun 11	May 11
38	10	Oct 11	2	Jun 11			Sep 11	**Aug 11**	Jul 11	Jun 11
39	10	Nov 11	3	Jul 11			Oct 11	Sep 11	**Aug 11**	Jul 11
40	10	Dec 11	4	Aug 11			Nov 11	Oct 11	Sep 11	**Aug 11**
41	11	Jan 12	1	Sep 11	Dec 11		**Dec 11**	Nov 11	Oct 11	Sep 11
42	11	Feb 12	2	Oct 11			Jan 12	**Dec 11**	Nov 11	Oct 11
43	11	Mar 12	3	Nov 11			Feb 12	Jan 12	**Dec 11**	Nov 11
44	11	Apr 12	4	Dec 11			Mar 12	Feb 12	Jan 12	**Dec 11**
45	12	May 12	1	Jan 12	Apr 12		**Apr 12**	Mar 12	Feb 12	Jan 12
46	12	Jun 12	2	Feb 12			May 12	**Apr 12**	Mar 12	Feb 12
47	12	Jul 12	3	Mar 12			Jun 12	May 12	**Apr 12**	Mar 12
48	12	Aug 12	4	Apr 12			Jul 12	Jun 12	May 12	**Apr 12**
49	13	Sep 12	1	May 12	Aug 12		**Aug 12**	Jul 12	Jun 12	May 12
50	13	Oct 12	2	Jun 12			Sep 12	**Apr 12**	Jul 12	Jun 12
51	13	Nov 12	3	Jul 12			Oct 12	Sep 12	**Apr 12**	Jul 12
52	13	Dec 12	4	Aug 12			Nov 12	Oct 12	Sep 12	**Apr 12**
53	14	Jan 13	1	Sep 12	Dec 12	Longitudinal Weight: through Wave 14	**Dec 12**	Nov 12	Oct 12	Sep 12
54	14	Feb 13	2	Oct 12			Jan 13	**Dec 12**	Nov 12	Oct 12
55	14	Mar 13	3	Nov 12			Feb 13	Jan 13	**Dec 12**	Nov 12
56	14	Apr 13	4	Dec 12			Mar 13	Feb 13	Jan 13	**Dec 12**
57	15	May 13	1	Jan 13	Apr 13	Wave 15 not included in this study	**Apr 13**	Mar 13	Feb 13	Jan 13
58	15	Jun 13	2	Feb 13			May 13	**Apr 13**	Mar 13	Feb 13
59	15	Jul 13	3	Mar 13			Jun 13	May 13	**Apr 13**	Mar 13
60	15	Aug 13	4	Apr 13			Jul 13	Jun 13	May 13	**Apr 13**
61	16	Sep 13	1	May 13	Aug 13	Wave 16 not included in this study	**Aug 13**	Jul 13	Jun 13	May 13
62	16	Oct 13	2	Jun 13			Sep 13	**Aug 13**	Jul 13	Jun 13
63	16	Nov 13	3	Jul 13			Oct 13	Sep 13	**Aug 13**	Jul 13
64	16	Dec 13	4	Aug 13			Nov 13	Oct 13	Sep 13	**Aug 13**

Source: Table based on information available at http://www.census.gov/SIPP.

2. SIPP Data Challenges

Since the earliest panel, SIPP users have had to grapple with the potential impact of response errors that arise from the SIPP's design and implementation. We examined the extent to which sample loss, seam bias, and SNAP churning are apparent in the 2008 SIPP panel. Appendix A presents results for several data assessment analyses, which are summarized below. Many of these challenges are shared with earlier studies of SNAP dynamics.

a. Sample Loss

Sample loss generally occurs when members of a household sampled for the survey either cannot be located or refuse to participate. In the 2008 SIPP panel, 19 percent of households originally sampled did not respond to the Wave 1 interview (this is higher than the Wave 1 nonresponse rates from prior SIPP panels, where nonresponse rates ranged from about 5 percent in 1984 to 15 percent in 2004).[14] Among individuals interviewed, 51 percent either left the universe permanently or did not respond to the survey in a given wave despite still being a member of the universe by the end of Wave 14 of the 2008 panel (the "effective" end of the survey for our analysis).

The SIPP observations used in this study are limited to those that have complete data for every month that they are in the SIPP universe from Wave 1 through Wave 14 of the survey. Observations that have complete data for all waves receive a positive longitudinal weight. Most of these are individuals with reported data that are available each of the 56 months in the panel. However, some observations exist for people that exit the SIPP universe during the panel because of death or exit and re-enter the universe during the panel for reasons such as moving into or out of the country or becoming institutionalized. Individuals who exit the universe, whether temporarily or for the duration of the panel, receive full longitudinal weights (and are included in the analysis) so long as they have complete information for those months that they are in the universe. In this context, sample loss involves individuals for whom information is not complete for those months that they are in the SIPP universe. This includes individuals who miss one or more interviews while still in the SIPP universe but return for subsequent interviews, as well as those who simply stop responding to the SIPP. We refer to the latter type of sample loss as attrition. The 2008 panel SNAP dynamics analysis file is six waves longer than that of the 2004 panel, so a greater degree of sample loss is expected.

Our analysis of sample loss in the 2008 SIPP panel leads us to conclude that there is some evidence of bias from sample loss, and the extent of bias is similar to past SIPP panels (Appendix A). However, such bias is not a significant concern: while just over half of the Wave 1 sample is not included in the full panel analysis file, the full panel weights appear to adequately correct for this sample loss when we examine key characteristics for January 2009. The correction is generally similar to that in the 2004 SIPP panel.

[14] These estimates are taken from http://www.census.gov/sipp/usrguide/ch2_nov20.pdf and http://www.census.gov/sipp/sourceac/S&A08_W1toW6(S&A-13).pdf.

It should still be stressed that while there is no large bias in the characteristics we examined, it is a concern that the full panel analysis file is substantially smaller than the original 2008 SIPP sample. Having a smaller set of observations leads to reduced precision in the estimates of participation patterns and in estimates of what factors affect entry and exit. The 2008 panel sample size is slightly smaller than the 2004 panel sample size. Exacerbated by higher attrition, due in part to more waves, the final 2008 panel and our at-risk analysis sample are more than a third smaller than those of the 2004 panel (38 and 34 percent smaller, respectively).

b. Seam Bias

In the SIPP, the "seam effect" reflects the tendency of individuals to report changes in status on seams—the months that represent the start or end of each four-month reference period. This has important implications for the study of participation dynamics, which is focused primarily on individuals' reported changes in program participation. The seam effect can affect the estimated duration of participation spells as well as the timing of program entry and exit relative to other changes.

Our analysis of the 2008 SIPP panel reveals pronounced SIPP seam effects. For SNAP, 76 percent of reported entries occur on the first month of a reference period (the left seam). Similarly, 56 percent of exits occur on the left seam. If there were no bias, we would expect each seam month to account for about 25 percent of reported transitions.[15] Hence, this suggests that individuals who enter SNAP in a given wave tend to report that they started receiving SNAP benefits in the first month of that wave, and individuals who exit in a given wave also tend to report that they no longer received benefits in the first month of that wave. All else being equal, this would have the effect of lengthening estimated spell durations. The percentage of reported entries at the left seam is larger than in the 2004 panel (76 percent in 2008 versus 69 percent in 2004), as is the percentage of reported exits at the left seam (56 percent in 2008 versus 47 percent in 2004). However, the percentage of reported exits at the left seam is substantially lower than it was in the 2001 panel (56 percent in 2008 versus 74 percent in 2001), indicating that while the level of the apparent seam bias is large, the extent is not unprecedented. The lower incidence of seam reporting of SNAP exits in the 2004 and 2008 panels, compared to the 2001 panel, is likely attributable to the introduction of the Census Bureau's expanded dependent interviewing in the 2004 panel, in which respondents who had reported receiving SNAP in the previous wave were reminded of this fact.[16] Dependent interviewing continued in the 2008 panel.

The extent of seam bias in the 2008 SIPP panel constrains our ability to examine how program participation is affected by the timing of other events. Because of seam reporting, an

[15] Because the SIPP sample is split into 4 random rotation groups, with each rotation group having a different four-month reference period, seasonal bias or other factors would not affect the distribution of transition events across reference months.

[16] Moore et al. (2009) examined the impact of dependent interviewing procedures on seam bias, not just for SNAP reporting, but for an array of need-based programs and non-need-based characteristics. They found that seam bias had declined substantially in the 2004 panel and the decline was attributable to the new dependent interviewing procedures.

observed transition could have occurred in the reported month or in any other month of a wave. Indeed, it is even possible that a trigger event that precedes a SNAP transition is reported after that transition is reported. As a result, as in prior SNAP dynamics analyses, our analysis will need to account for the SIPP seam effect. We will use trigger "windows" of four and eight months to capture transition events that may have been reported on a seam, rather than attempting to correlate transition events and SNAP participation changes over two months.

c. One-Month Gaps and SNAP Churning

Five previous studies (Mabli et al (2011a), Cody et al. (2007), Cody et al. (2005), Gleason et al. (1998), and Burstein (1993)) "closed up" one-month gaps in SNAP participation before conducting analyses of SNAP dynamics. That is, they assumed that the respondent made a mistake in reporting and did not experience an actual break in participation. Thus, sample members were assumed to have received SNAP benefits in a given month if they received benefits in the previous and subsequent month. Anecdotal evidence from the States, however, indicates that "churning," that is, short-term nonparticipation in the program during a period of continued eligibility, is somewhat common. As such, we investigated these gaps further in 2004 and again in 2008.

We examined the prevalence of one- and two-month gaps in SNAP participation and characteristics of the SNAP units with such a gap. In assessing whether to continue to close one-month gaps in the current analysis, we focused on three possible explanations for short-term gaps:

1. Individuals have a change in circumstances that leads them to exit and then another change that leads them to re-enter, within a very short time period.
2. Individuals reach the end of their certification period without completing the recertification process, leading them to exit the program; then within a month or two, reapply and enter back into the program (what we refer to as churning below).
3. The gap is misreported and participation continued across this period.

If we had found solid evidence that the first case was most prevalent, we would suggest not closing the gaps, as the exits and entries would then appear real. However, we did not find much evidence to support this. Rather, individuals with short-term gaps do not seem to experience a similarly high level of changes in circumstances as seen with those with longer gaps. The same was true in the 2004 panel. We present the detailed analysis in Appendix A.

Thus we were left trying to identify if the gaps are due to churning or misreporting. We found that although the percentage of one-month gaps reported in the last month of the wave decreased from 2004 to 2008 (68 to 47 percent), a disproportionately high number of one-month gaps continue to be reported in the last month of the wave – the month we expect to be most accurately reported, relative to the first three waves. Although reporting bias in the next wave may lead to an underrepresentation of the gap, it appears likely that there was a gap. The gap often occurs about ten months into a spell. In this study, we found that individuals who are more

likely to have short gaps in participation are the ones with the shorter certification periods. In other words, they come up for recertification more often, and have more opportunities to experience a short-term break in participation.

Because these findings are consistent with an explanation of churning, and the highest incidence is in a month that we expect to be most accurate, we believe, like in the 2004 panel, that the gaps in the 2008 panel may in fact be due to churning rather than misreporting.

The question that remains, then, is whether to close the gaps or not. On one hand, the gaps appear to be true breaks in participation—individuals exited the program and re-entered very quickly. On the other hand, the exits and entries were not triggered by changes in circumstances, but instead by an end of the certification period. If we close the one-month gaps, our analysis will include longer single spells and examine trigger events only around their entry before the long spell. If we do not to close the one-month gaps, we will have multiple shorter spells and will include triggers for individuals who did not experience a change in circumstances that led to their entry. In other words, closing the gap results in longer median participation spells, lower entry rates, and an entry trigger analysis based on a more reasonable set of entries. Not closing the gaps results in shorter median participation spells and an entry trigger analysis that has been diluted by families that entered without a change in circumstances. Given the percentage of individuals with gaps, however, this dilution is likely to be minimal.

As in the earlier studies, we opted to close the gaps in the 2008 panel. If States and policymakers generally consider the churners to be longer-term participants, then closing the gaps allows the analysis to focus on entries, durations, and triggers among those who are not simply churning. It also maximizes the comparability between the 2008 Dynamics findings and those from the earlier panels.

3. Supplemental Data Sources

There is a long history in Dynamics reports of exploring how SNAP dynamics differ by SNAP participant subgroups, distinguished by characteristics of households, such as family composition, and presence of and sources of income. In past studies, subgroups have been created exclusively from SIPP data. To further enrich our understanding of SNAP dynamics, this study draws from three additional data sources: (1) the American Community Survey (ACS) summary files, (2) the Food Access Research Atlas, and (3) a proprietary mortgage foreclosure data resource. These data sources enable us to define subgroups by neighborhood contextual factors, geographic access to food, and foreclosure experience. We have merged each new data source to our SIPP-based analysis file and conducted analyses to verify data quality and construct preliminary summary analysis variables. (Appendix A summarizes these data and their match to our SIPP analysis file.) This section describes these data sources.

a. ACS Neighborhood Contextual Data

To create subgroups that describe the income and program participation levels of individuals' neighborhoods (in this case neighborhood is denoted by a sample member's census tract), we employ the 2008-2012 Census Bureau ACS population characteristics summary files tabulated according to the 2010 census tract geographic boundaries. We link the ACS data to our SIPP-based analysis file by census tract.

While the public-use SIPP data contain no geographic identifiers below the State level, we secured permission to use monthly census tract of residence information for SIPP respondents from within the Census Bureau. The 2010 census tract assignments for SIPP are available only through Wave 10, so we held respondents' Wave 10 residence constant through Wave 14. The 2008 SIPP panel was created under the 2000 census tract system which is available for all waves, but the ACS data for the analysis period use 2010 tracts.

b. Economic Research Service (ERS) 2010 Food Access Research Atlas Data

Low access to healthy food is defined as being far from a supermarket, supercenter, or large grocery store ("supermarket" for short). A census tract is considered to have low access if a significant number or share of individuals in the tract are far[17] from a supermarket. To create subgroups that describe the degree to which individuals have access to food, we turn to the 2010 Food Access Research Atlas, a food access data file produced by the Economic Research Service (ERS). This dataset defines geographic areas in which households have limited food access in order to provide a spatial overview of a community's ability to access healthy food. The atlas is created from several integrated data sources: the 2010 Decennial Census, the 2006-2010 American Community Survey, and a 2010 list of supermarkets (derived from merging the 2010 Store Tracking and Redemption System (STARS) directory of stores authorized to accept SNAP benefits and the 2010 Trade Dimensions TDLinx directory of stores). Like the ACS data, the food access data are linked to our SIPP-based analysis file by census tract.

c. Mortgage Foreclosure Data

We also link our SIPP data to an internal Census Bureau mortgage foreclosure data set, comprised of mortgage foreclosure actions collected by commercial data provider RealtyTrac. RealtyTrac mined nationwide foreclosure events from registers of Deeds offices across the country from the period January 2005 through December 2011. The Census Bureau identified SIPP respondents in these data by matching foreclosure event address to the SIPP household address, as masked by internal Master Address File Identification Numbers (O'Donnell 2011). This match was done at the month level. The foreclosure data do not cover the whole study period, so we limit analysis of these subgroups to the associated first 10 waves. Appendix A discusses other limitations to these data.

[17] In this study, a low food access tract is one where at least 500 people or 33 percent of its population live more than 1 mile in urban areas or more than 10 miles in rural areas from the nearest supermarket, supercenter, or large grocery store.

E. Methodological Approach

Our general methodological approach consists of analyzing the characteristics of participation spells observed in the 2008 through 2012 period of the SIPP. This section provides an overview of the methodology used in this report. Additional details on the methodology are provided in Chapter II and Appendices A and B.

The descriptive analysis of participation dynamics is based on a sample of individuals from the 2008 SIPP panel. Alternatively, we could have examined SNAP dynamics of *households*. However, examining SNAP household dynamics is difficult because the composition of a household can (and often does) change over time. For example, individuals can move into or out of a household, two separate households can merge to form a single household, or a single household can split and become more than one household. Because of the challenges posed by these changes, and to be consistent with earlier studies of SNAP participation dynamics, this report focuses on the dynamics of individuals.

Our descriptive analysis follows the logic of the chronological contact that a hypothetical individual has with SNAP. We begin by examining SNAP entry, then discuss the length of participation spells, next discuss the events that lead individuals to exit the program, and finally examine whether and when individuals re-enter the program. We also provide summary measures of individuals' overall reliance on SNAP.

Much of the analysis presented here is consistent with the descriptive analysis of dynamics conducted by Mabli et al. (2011a), Cody et al. (2007), Cody et al. (2005), Gleason et al. (1998), and Burstein (1993). This consistency facilitates comparisons of SNAP participation dynamics in the 2008 to 2012 time period with those of the mid-1980s, the 1990s, the early 2000s, and the mid-2000s. In particular, as discussed above, we followed the procedure used by these three previous studies to "close up" one-month gaps in participation. We also followed approaches similar to theirs for estimating participation dynamics, including our approach to defining triggers that could lead to program entry, our approach to measuring the distributions of the length of participation spells (both for individuals newly entering SNAP and for a cross-section of participants in a given month), and our approach to defining triggers that could lead to program exit. Indeed, while the Cody et al. (2007) analysis of SNAP dynamics using the 2001 SIPP panel developed some assumptions that differed from those used in previous studies, the methodology in the current study makes an identical set of assumptions to those used in Cody et al. (2007) and Mabli et al. (2011a) and thus maximizes comparability between the findings from the early and mid-2000s to the findings from 2008 to 2012.

A marked departure from previous studies that was initially made in Cody et al. (2007) and we have maintained in the current and previous studies is the grouping of individuals by families rather than households to determine some of their characteristics, including SNAP participation, income, and family composition. That is, we define a person to be a SNAP participant if anyone in his/her family is a SNAP participant; the income for any individual is the sum of incomes across all family members, and the individual's family composition is based on all members of

the family.[18] Neither a family nor household grouping reflects the actual SNAP unit, which is driven by the food purchase and preparation practices of the household members. Immediate family members (spouses, children under age 22, and the immediate family members of children under age 22) are required to be in the same unit, but other family members and unrelated household members may be in separate households. The largest impact of this change is likely for measures that look at family characteristics (such as families with earnings or families with elderly members). However, comparisons of entry rates using households and families in Cody et al. (2007) show very little difference between the two measures.

[18] Some members of the family may not be participating, such as certain noncitizens who are ineligible for SNAP, but they are counted as participants in this analysis.

II. DESCRIPTIVE ANALYSIS

The number of SNAP participants in any given month is the net effect of two separate events: program entry and exit. First, individuals enter SNAP, often in response to changes in their personal or family circumstances. Second, after receiving benefits for some duration, they exit the program, again often in response to changes in personal or household circumstances. The dynamics of participation in SNAP, however, are usually characterized not only by entry and exit, but by program re-entry. That is, some of those individuals who exit the program re-enter at a subsequent date. Examining program re-entry distinctly from program entry adds considerable value to our understanding of program dynamics because, as evidenced in prior dynamics studies, individuals who re-enter the program are typically different than those who enter for the first time.

These patterns of entry and exit not only determine the characteristics of the caseload at any point in time, but also determine whether the size of the caseload increases or decreases over a period of time. An increase in the size of the caseload, such as that from 2008 to 2012, indicates that more people are entering than exiting the program, people who are entering are participating for longer periods of time, or a combination of the two.

In this chapter, we examine patterns of SNAP dynamics for different cohorts of the U.S. population from 2008 to 2012.[19] While there is no one "typical" SNAP participation spell, we find the following participation patterns:

- ***About 7 out of every 1,000 nonparticipants with income under 300 percent of poverty at some point in the panel period who were not participating in SNAP at the end of one month participate in the next month.***
- ***This monthly entry rate, measured as the percentage of nonparticipants with income under 300 percent of poverty at some point in the panel period who enter SNAP in the next month, increased from 0.5 percent in the mid-2000s to 0.7 percent in the 2008 to 2012 time period.***
- ***The replacement rate, measured as the number of new SNAP entrants in relation to the caseload size, decreased steadily from 2008 to 2012.*** The replacement rate decreased from 7.2 percent during the October–December 2008 time period to 3.1 percent over the January–December 2012 time period, in part because the denominator (that is, the size of the caseload) became increasingly large as the caseload grew.
- ***Median SNAP spell lengths for new entrants were 20 percent longer in 2008 to 2012 than in the mid-2000s.*** The median spell length for new entrants was 12 months, up from 10 months in the mid-2000s and eight months in the early 2000s (Cody et al., 2007).

[19] As in prior studies of SNAP dynamics, we do not limit ourselves to studying dynamics among the SNAP-eligible population. Measuring eligibility precisely is difficult, since most surveys do not collect enough information to determine who is eligible for program benefits each month. While several studies have examined participation rates among eligible individuals (e.g., Eslami 2014), these studies examine SNAP at one point in time. In this study, we are examining patterns over time. Replicating the eligibility determination procedures in a time-series analysis is beyond the scope of this study.

- ***Half of the individuals participating in SNAP in December 2008 have spells lasting at least 8 years.*** This is an increase from the mid-2000s when half of the individuals participating in SNAP in May 2004 had spells lasting less than seven years.
- ***Elderly people are much less likely to enter SNAP than other adults, although they have longer participation spells than children and younger adults.*** They are also much less likely to re-enter the program once they have left.
- ***Of those who exit the program, 47 percent return within one year.*** The rate of re-entry is the highest for the poorest families.
- ***A decrease in family income is the most common trigger event that precedes entry,*** while *an* increase in family income *is* the most common trigger events that precede exit.
- ***The annual turnover rate during the 2008 panel period was 1.4 in 2009 and 1.3 each year thereafter.*** About 40 percent more individuals in 2009 and 30 percent more individuals in each of 2010 through 2012 participated over the course of a year than participated in an average month.
- ***The SNAP caseload increase from 2008 to 2012 was attributed to a higher replacement rate than exit rate.*** Replacement rates decreased over the panel period while exit rates remained more stable, resulting in decreasing but still positive growth rates.

In this chapter, we present the patterns; in the next chapter, we explore in more detail how these vary across subgroups and over time.

A. Entry into SNAP

For individuals entering SNAP, whether for the first time or not, we generally are interested in the following questions, which we address in this section:

- What are the entry rates for the period covered by the 2008 SIPP panel for all individuals "at risk" of entry (below 300 percent of poverty and not on SNAP) and for SNAP subgroups? Have these changed since the mid-2000s?
- Do rates of entry vary by income level? How sensitive are the findings on program entry to the definition of the population at risk (for example, below 100 percent of poverty)?
- How do the answers to the above research questions compare to findings in the studies for the earlier periods?
- Is the benefit increase stemming from ARRA associated with increased program enrollment? Did the benefit increase seem to play a role in the number of entrants at the upper end of the income eligibility spectrum participating in the program?

1. The SNAP Entry Rate

a. Sample and Methods

The entry rate—that is, the rate at which individuals enter SNAP over a given period of time—is determined by the number of individuals at risk of entering who subsequently enter, divided by the number at risk of entering. By "at-risk," we mean individuals who are not receiving SNAP benefits in a given month, and, depending on the definition in use, have income

under a certain level. The entry rate measure provides us with an estimate of the proportion of the nonparticipating population that enters SNAP in a given time period.

To determine the entry rate, we must define both the at-risk population and the time period over which we wish to measure entry rates. One possibility is to define the at-risk population as all individuals. While informative, the entry rates calculated for all individuals tend to obscure the differences between changes in the rate among eligibles and changes in the size of the eligible population that could enter the program. For instance, a decreasing entry rate could reflect a lower tendency for individuals to participate, or it could reflect a shrinking population of people that potentially could participate. An alternative measure would be to examine entry rates over all individuals that are eligible for benefits. However, such a measure may be too narrow, since an individual could be ineligible for SNAP in one month, but eligible and participating two months later.

Accordingly, we developed three definitions of the population of individuals that are "at risk" of entering SNAP. These definitions range from strict—in which most or all members of the population are likely eligible for SNAP—to the most lenient—one that includes all individuals. By using these three definitions, we develop a better understanding of the sensitivity of our rates to our choice of at-risk population, and maximize comparability of entry rate estimates in the current study and in prior studies of SNAP dynamics. The following three definitions are based on income over the full analysis period:[20]

1. Individuals with monthly income under 100 percent of poverty at some point in the analysis period
2. Individuals with monthly income under 300 percent of poverty at some point in the analysis period (the primary measure used by Mabli et al. (2011a), Cody et al. (2007), Cody et al. (2005), and Burstein (1993))
3. All individuals (the primary measure used by Gleason et al. (1998))

The first definition provides entry rates among those likely to be eligible; however, SNAP eligibility is not limited to those under poverty, so it has the disadvantage of excluding many who would likely be at risk of entering at some point in the panel. This is especially true in recent studies, relative to prior studies, as the percentage of States that offer policies designed to expand eligibility, such as broad-based categorical eligibility, has increased. The income threshold of 300 percent of poverty captures individuals likely to be eligible, though there are some individuals in this group whose income never gets so low that they are truly at risk of entering. This definition has been used in similar studies of entry rates (e.g., Mabli et al., 2011a). The third definition places no restrictions on income; this was the definition generally used in

[20] Ideally, we would measure a person's income in the same way that it would be measured for the purposes of SNAP eligibility determination. However, the SIPP data do not indicate which household members would apply for benefits together, so we calculate each person's income as the sum of the income of all individuals in the family, including members of related subfamilies.

Gleason et al. (1998) for estimating entry rates in the early 1990s and, while not the primary measure in Mabli et al. (2011a), was estimated for the mid-2000s in that study as well.

In addition to considering multiple definitions of the at-risk population, we consider three time periods for computing entry rates. Specifically, we compute:

1. *Monthly entry rate*, which is the percentage of all at-risk individuals who enter SNAP in the current month after not receiving SNAP benefits during the previous two months (at least).[21]
2. *Wave-based entry rate*, which is the percentage of individuals that were not receiving SNAP benefits at the end of a SIPP four-month reference period (a "wave") but that enter SNAP during the subsequent wave.
3. *Annual entry rate*, which is, among all individuals not participating at the end of one reference year, the proportion who participate at some point in the next reference year.[22]

The monthly entry rate is the most intuitive. It measures how often a person moves from not participating in one month to participating in the next. However, the annual entry rate may be more useful because it provides a broader view of how often at-risk individuals enter the program and the wave-based entry rate may be the most accurate, because it accounts for the seam bias that can cause biased distributions in monthly and annual entry rates.

To create the entry analysis file, we pulled from the SIPP a sample of person-month records—one record for each person for each month that they were in the SIPP universe. We then limited the sample to those who were at risk of entering, based on the definitions described above. For example, a person whose family income was under 300 percent of poverty at some point during the panel period would contribute one record to the second sample described above for every month they were not receiving SNAP benefits. Each month they were not receiving benefits, they were considered to be at risk of entering. If they subsequently entered the program, they would stop contributing to the sample unless they stopped receiving benefits, in which case they would once again contribute to the sample.

Using person months allows us to differentiate between a person who, for example, enters the program after two months of being at risk and a person who enters the program after two years of being at risk. The former will contribute an entry rate of 100 percent to the sample (entering at

[21] The at-risk population is restricted to those who had not received SNAP benefits for the previous two months because we close one-month gaps in SNAP participation. Under this procedure, we assume that sample members received SNAP benefits in a given month if they received SNAP benefits in the previous month and also in the subsequent month. In effect, sample members have to be out of the program for two months to be considered nonparticipants (and "at risk" of entering the program). Similarly, we close one-month gaps in nonparticipation, so that sample members have to be participating in the program for at least two months to be considered an entrant. A sample member is counted as entering the program each time they enter following a lapse in participation of at least two months.

[22] This reference year is tied to the SIPP interview schedule. It is a close representation of the calendar year.

the first opportunity); the latter will contribute an entry rate of approximately 4 percent to the sample (entering after 23 possible opportunities).

To provide the reader with a sense of the magnitude of the sample sizes for each analysis, we provide unweighted counts in most tables. The unweighted counts may be a count of persons included in the analysis or counts of person months. Providing sample sizes in person months for some tables is necessary because each person in the SIPP sample contributes a different number of months to the analysis, depending on the number of months they are not participating in SNAP and are thus at-risk of entering. The relative sizes of the populations can be determined by comparing the number of person months in each type of analysis.

b. SNAP Entry Among the At-Risk Populations

We calculate the monthly entry rates using months 3 to 55 of the SIPP panel period so a given sample member may contribute up to 53 months of data to the calculation of the rate.[23] The wave-based entry rates use Waves 2 to 14 (months 5 to 53) of the data, and the annual rates use years 2 to 5 (months 10 to 46).

The monthly SNAP entry rate ranges from 0.5 percent for all individuals to 1.2 percent for those whose income dipped below the poverty level at some point during the analysis period (Table II.1). This suggests that for every 1,000 individuals not receiving SNAP benefits at the beginning of the month, about 5 enter during the month. When we restrict the population under consideration to those whose income was under 300 percent of poverty at some point in the analysis period, approximately 7 people in 1,000 will enter during the month.[24] If we restrict the population even further, to those whose incomes were under poverty at some point in the period, approximately 12 in 1,000 will enter in the month.

Monthly entry rates may appear low because they refer to entry in a given month, rather than entry over a period of time. The wave-based entry rate of 2.6 percent for individuals with income under 300 percent of poverty suggests that approximately 26 out of every 1,000 of these nonparticipants will enter the program in the next four-month wave. Similarly, the annual rate of 6.2 percent implies that 62 out of every 1,000 nonparticipants with income under 300 percent of poverty who are not participating at the end of one year will participate at some point in the next year.

When we restrict the at-risk population to those with income under 100 percent of poverty at some time during the analysis period, we find that the monthly, wave-based, and annual entry

[23] We begin examining the monthly entry rates in month 3 because we require that a person have a two-month spell of nonparticipation before they could be considered at risk for entering the program. We end in month 55 because we also require that a person have a two-month participation spell to be considered an entrant. In some of the analyses detailed later in the report, we begin in later months so that we can look for events that trigger entry during a period prior to the sample month.

[24] About 76 percent of the population had their income dip below 300 percent of poverty for at least one month in the panel period. Thus, results for the entire population are very similar to results for this slightly restricted population.

rates were all substantially larger than the rates for those under 300 percent of poverty. Approximately 45 out of every 1,000 who were not participating at the beginning of the wave will enter during the wave, and approximately 105 out of every 1,000 who were not participating at the beginning of the year will enter during the year.

Table II.1 SNAP Entry Rates for Alternate At-Risk Populations, 2008 SIPP Panel

	At-Risk Population		
Data Period	All Individuals	Family Income <300% of Poverty	Family Income <100% of Poverty
Percentage			
Monthly	0.5	0.7	1.2
Wave-based	2.0	2.6	4.5
Annual	4.7	6.2	10.5
Sample Size (Person months)			
Monthly	2,037,370	1,502,002	384,524
Wave-based	500,347	369,020	168,974
Annual	77,623	57,381	26,318

Universe: Individuals not receiving SNAP benefits for at least two months; under poverty thresholds at some point during panel period. SNAP spells can begin in panel months 3–55 for monthly rates, 5–53 for wave-based rates, and 10–46 for annual rates.

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

c. Changes in SNAP Entry Over Time Among the At-Risk Populations

Entry rates have increased fairly substantially from the mid-2000s to the 2008 to 2012 period covered in this study for all at-risk populations that we examined (Table II.2). The monthly entry rate increased from 0.5 to 0.7 percent for individuals with income under 300 percent of poverty and from 1.1 to 1.2 for individuals with income under 100 percent of poverty. There were also increases in the wave-based entry rate from 2.0 to 2.6 percent and in the annual entry rate from 4.2 to 6.2 percent for individuals with income under 300 percent of poverty. The annual rate increased by 1.7 percentage points for all individuals, and by 2.2 percentage points for individuals with income under 100 percent of poverty.

Table II.2 SNAP Entry Rates for Alternate At-Risk Populations Over Time

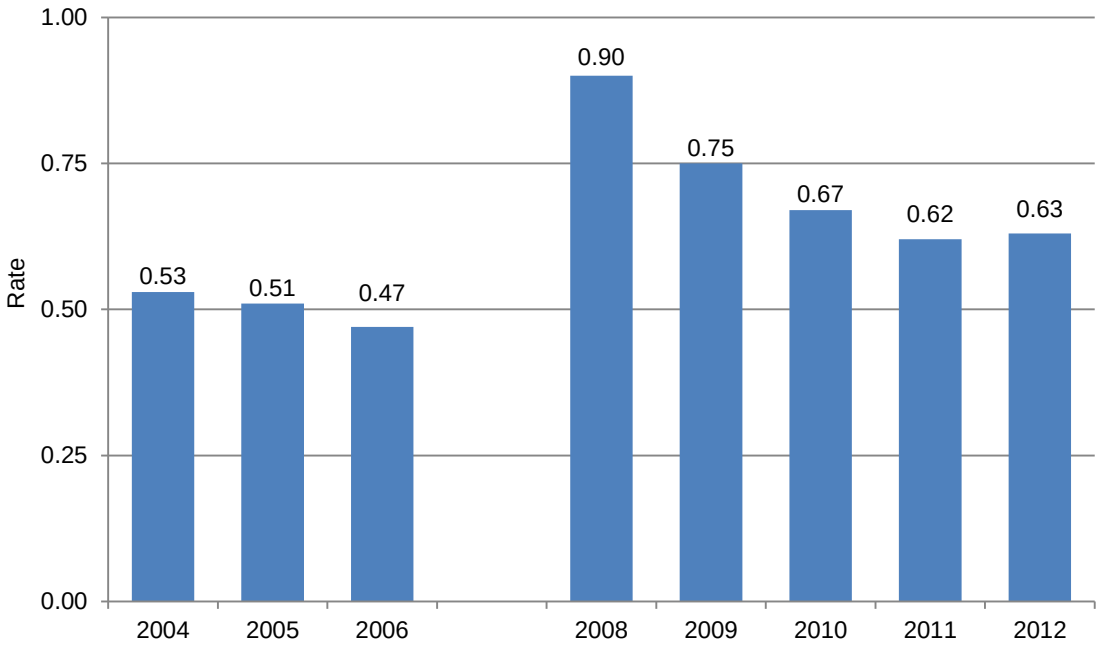
	Monthly Entry Rate				Wave-Based Entry Rate					Annual Entry Rate			
Subgroup	Early 1990s	Early 2000s	Mid-2000s	2008–2012	Mid-1980s	Early 1990s	Early 2000s	Mid-2000s	2008–2012	Early 1990s	Early 2000s	Mid-2000s	2008–2012
All individuals	0.3	0.4	0.4	0.5	NA	NA	1.4	1.4	2.0	2.6	3.3	3.0	4.7
Individuals with income under 300 percent of poverty	NA	0.4	0.5	0.7	2.0	2.4	1.8	2.0	2.6	NA	4.1	4.2	6.2
Individuals with income under 100 percent of poverty	NA	0.9	1.1	1.2	NA	NA	3.4	4.1	4.5	NA	7.9	8.3	10.5

Universe: Individuals not receiving SNAP benefits for at least two months; under poverty thresholds at some point during panel period. For each time period shown, SNAP spells can begin in panel months 3 or after for monthly rates, 5 or after for wave-based rates, and 10 or after for annual rates. Final month that a spell can begin varies, depending on the SIPP panel length.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008-2012; Mabli et al. (2011a) for the mid-2000s; Cody et al. (2007) for the early 2000s; Gleason et al. (1998) for the early 1990s; Burstein (1993) for the mid-1980s.

We also examine changes in SNAP entry by estimating average monthly entry rates and replacement rates over time within the panel period and across the 2004 and 2008 SIPP panels. The average monthly entry rate decreased from 0.53 in 2004 to 0.47 percent in 2006, mirroring the decrease in national unemployment over the same period. It then increased to 0.90 percent in late 2008 and remained around 0.75 percent through 2009 in the economic downturn that followed the Great Recession (Figure II.1). During the same period, legislation from the American Recovery and Reinvestment Act (ARRA) raised benefits. The average monthly entry rate then dropped modestly to 0.67 percent in 2010 before falling further in 2011. Mirroring the decrease in the unemployment rate over the 2010 to 2012 period, both the number of new entrants and the number of individuals at risk of entering decreased from 2009 to 2012 (Table II.3). The decrease over this period in the entry rate, though, indicates a faster decline in the size of the group of entrants than of the at risk group. Still, both the numbers of new entrants and at-risk individuals were higher in 2012 (1.2 million and 189 million, respectively) than in the mid-2000s (850,000 and 182 million, respectively).

Figure II.1 Average Monthly Entry Rates, by Year



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006.

Note: All averages are over 12 calendar months except 2006 (January to May) and 2008 (October to December).

Table II.3 Average Monthly SNAP Entry and Replacement Rates by Year, 2004 and 2008 SIPP Panels

	Individuals Entering SNAP (Number)	At-Risk Individuals in Previous Month (Number)	Monthly Entry Rate	SNAP Participants in Previous Month (Number)	Replacement Rate
2008 Panel					
Average 2008 (October–December)	1,839,316	203,348,246	0.90	25,734,758	7.2
Average 2009 (January–December)	1,489,188	198,009,508	0.75	30,537,711	4.9
Average 2010 (January–December)	1,288,346	192,581,107	0.67	35,284,519	3.7
Average 2011 (January–December)	1,186,253	190,355,116	0.62	37,334,496	3.2
Average 2012 (January–December)	1,194,379	189,630,772	0.63	38,232,755	3.1
Average 2008–2012	1,321,881	193,273,780	0.68	34,781,922	3.9
2004 Panel					
Average 2004 (June–December)	971,886	183,940,880	0.53	21,816,640	4.5
Average 2005 (January–December)	937,793	182,393,744	0.51	22,849,719	4.1
Average 2006 (January–May [a])	849,617	182,148,427	0.47	23,096,961	3.7
Average 2004–2006	929,367	182,793,884	0.51	22,599,913	4.1

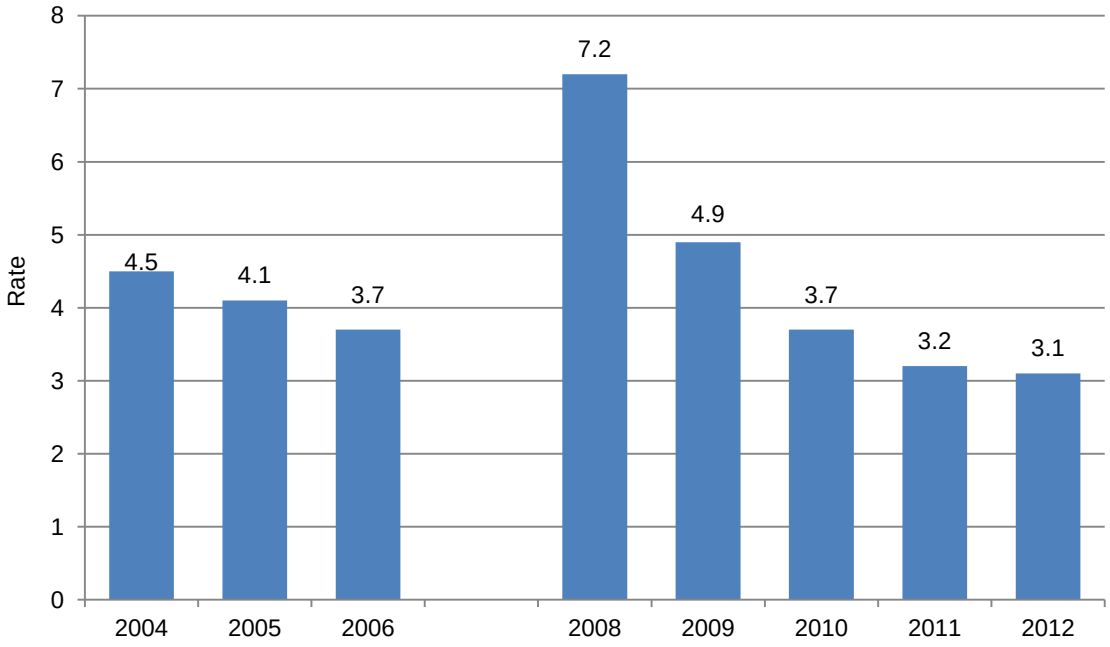
Universe: Individuals at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period) or receiving SNAP.

Sources: Decision Demographics tabulations of the 2004 and 2008 SIPP Panels.

Note: [a] May 2006 is the last month common to all four rotation groups within the wave for the 2004 SIPP Panel.

The replacement rate measures the number of new SNAP entrants in a month divided by the number of participants in the previous month's caseload. Like the entry rate, the average monthly replacement rate decreased steadily each year from 2004 to 2006 (Figure II.2), dropping to 3.7 percent in 2006. The decreasing trend in the replacement rate in these years reflects the decrease in the average monthly number of new entrants and the increase in the average monthly number of participants each year (Table II.3). However, in October through December 2008, the replacement rate increased to 7.2 percent, reflecting the high increase in the entry rate. In 2009, the replacement rate dropped back down to 4.9 percent. However, it was still higher than it had been in 2006 as the number of SNAP participants increased from 23 million in 2006 to over 30 million in 2009. The replacement rate continued to decrease to 3.1 by 2012.

Figure II.2 Average Monthly Replacement Rates, by Year



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006.

Note: All averages are over 12 calendar months except 2006 (January to May) and 2008 (October to December).

Extending the analysis farther back in time, Cody et al. (2005) estimated replacement rates throughout the 1990s, but only by panel periods and not by year. The study found that replacement rates varied from 3.8 percent to 5.3 percent. In the early 2000s (Cody et al., 2007), the replacement rates ranged from 5.0 percent to 5.7 percent. Thus, we observe that the replacement rate in 2012 (3.1 percent) is lower than we have seen in the other recent study periods. As we will see in section B, this is due to participants staying on the program longer after entering the program. The relatively small replacement rate can also be explained by the large growth over time in the size of the caseload (the denominator of the replacement rate).

d. SNAP Entry among Subgroups

Prior studies of SNAP participation and SNAP dynamics have found each to vary substantially according to characteristics such as age, income, and citizenship (Mabli and Ferrerosa 2010; Mabli et al., 2009; Cody et al., 2007; Leftin 2010; Gleason et al., 1998). In the previous section, we discussed how entry rates increase as the at-risk population under consideration is restricted by income; we now limit most of our analysis to one at-risk population—those with monthly income under 300 percent of poverty at some point during the analysis period. As in the previous section, our analysis sample consisted of person-month records, so each person in the SIPP data contributed a record to the sample for each month he or she did not participate in SNAP. This allowed us to capture entries across all months of the SIPP panel, giving us an average entry rate.

Before we examine the entry rates among subgroups of the population, we first consider the characteristics of (1) the full at-risk population and (2) those at-risk individuals who enter SNAP as of the reference month (Table II.4). For this analysis, we include the three previously described at-risk definitions—all individuals, those with income under 300 percent of poverty, and those with income under 100 percent of poverty. We focus mainly on differences between SNAP entrants and the at-risk population defined as those with monthly income under 300 percent of poverty at some point during the analysis period, unless otherwise noted.

SNAP entrants are more likely than the general at-risk population to have previously received SNAP benefits, reside in families with children, have a disability, or reside in families with TANF, SSI, or unemployment compensation. In particular, we find that, while 13 percent of at-risk individuals with income below 300 percent of poverty at some point in the analysis period had received SNAP benefits in the past, 51 percent of at-risk individuals who entered SNAP in this period had previously received them. About 70 percent of entrants were in families with children, compared with only about half of at-risk individuals. Although only 10 percent of entrants were nonelderly disabled adults, this is disproportionately high relative to the number of nonelderly disabled adults in the at-risk population (4 percent). As such, a higher percentage of new entrants lived in families receiving SSI (17 percent) than of the at-risk population (5 percent). Additionally, 5 percent of entrants were living in families with TANF, compared with 0.5 percent of individuals in the at-risk group, and 9 percent of entrants were living in families with unemployment compensation, compared with 5 percent of individuals in the at-risk group. Entrants were less often elderly; only 8 percent of entrants were elderly, compared with 20 percent of those at risk.

The characteristics of the at-risk individual’s neighborhood also differ for entrants compared with at-risk individuals with income below 300 percent of poverty at some point in the panel period. In measuring these characteristics, we defined "neighborhood" to be the census tract in which the individual resides. Three sets of complementary subgroups and their definitions follow, with more detail in Appendix B:

- **Individuals living in high poverty neighborhood vs. Individuals not living in high poverty neighborhood.** This is defined according to whether the census tract in which the individual lived has higher than the median poverty rate.
- **Individuals living in low-income neighborhood vs. Individuals not living in low-income neighborhood.** This is defined according to whether the census tract in which the individual lived has a median income below 200 percent of federal poverty thresholds.
- **Individuals living in high SNAP participation neighborhood vs. Individuals not living in high SNAP participation neighborhood.** This is defined according to whether the census tract in which the individual lived has higher than the median percentage of individuals participating in SNAP.

Twenty-six percent of at-risk individuals lived in neighborhoods classified as high poverty and 48 percent of those who enter SNAP lived in high poverty neighborhoods. Similar percentages were found for individuals living in low-income neighborhoods and those living in high SNAP participation neighborhoods.

Entrants did not differ substantially from the total at-risk population across State SNAP policy measures. For example, 72 percent of entrants and 72 percent of at-risk individuals lived in States that offered broad-based categorical eligibility at the time of entry.

Table II.4 Characteristics of Alternate At-Risk Populations and SNAP Entrants, 2008 SIPP Panel

Subgroup	At-Risk Individuals	For at Least One Month in 2008 Panel: At-Risk Individuals with Income <300% of Poverty	For at Least One Month in 2008 Panel: At-Risk Individuals with Income <100% of Poverty	SNAP Entrants
All Individuals	100.0%	100.0%	100.0%	100.0%
SNAP Benefit Receipt				
Never received SNAP benefits (age 18 and older)	90.0	87.4	82.9	49.1
Previously received SNAP benefits (age 18 and older)	10.0	12.6	17.1	50.9
Family Composition				
Individuals in families with children	48.1	49.8	54.0	69.8
Adults in families with children and one adult	2.1	2.5	3.5	5.9
Children in families with children and one adult	3.0	3.6	5.2	10.2
Adults in families with children and multiple adults	2.6	3.1	4.0	9.2
Children in families with children and multiple adults	1.4	1.7	2.2	6.2
Adults in families with children and a married head	21.7	21.4	21.1	19.7
Children in families with children and a married head	17.2	17.2	17.6	18.3
Children in child-only families	0.2	0.2	0.4	0.3

Table continues

Table II.4, *continued*

Subgroup	At-Risk Individuals	For at Least One Month in 2008 Panel: At-Risk Individuals with Income <300% of Poverty	For at Least One Month in 2008 Panel: At-Risk Individuals with Income <100% of Poverty	SNAP Entrants
Family Composition, *continued*				
Individuals in families without children	51.9	50.2	46.0	30.2
Individuals in families with elderly members	24.4	23.8	15.1	11.3
Elderly members living alone	5.4	6.1	4.4	2.0
Elderly members living with other elderly individuals	9.7	8.7	3.9	1.6
Elderly members living with nonelderly individuals	9.0	8.5	6.2	7.5
Individuals in families with disabled members	2.8	3.4	4.0	6.8
Individuals in families without any elderly or disabled members	24.7	23.0	26.9	12.1
Age and Disability				
Nonelderly disabled adults	3.1	3.7	4.5	9.7
Nonelderly nondisabled childless adults	29.5	27.5	30.0	15.0
Age				
Children (under age 18)	21.8	22.7	25.4	34.9
Nonelderly adults (age 18 - 59)	57.9	57.2	62.3	56.8
Elderly adults (age 60 and over)	20.3	20.1	12.3	8.3
Sex				
Male (age 18 and over)	49.1	48.5	49.0	43.6
Female (age 18 and over)	50.9	51.5	51.0	56.4
Race/Ethnicity [a]				
White, Non-Hispanic	69.1	65.7	60.6	43.0
African American, Non-Hispanic	9.7	10.9	11.7	22.4
Hispanic, all races	14.2	16.9	20.6	28.1
Asian, Non-Hispanic	4.1	3.5	3.8	2.1
Other, Non-Hispanic	2.9	2.9	3.2	4.5
Education				
Individuals in families with high school graduates	94.7	93.0	89.9	85.2
Individuals in families with no high school graduates	5.3	7.0	10.1	14.8

Table continues

Table II.4, *continued*

Subgroup	At-Risk Individuals	For at Least One Month in 2008 Panel: At-Risk Individuals with Income <300% of Poverty	For at Least One Month in 2008 Panel: At-Risk Individuals with Income <100% of Poverty	SNAP Entrants
Citizenship				
Citizen	94.2	93.2	90.5	91.3
Noncitizen	5.8	6.8	9.5	8.7
Citizen children living with noncitizen adults in the family	2.7	3.2	4.4	7.4
Adults in families with citizen adults and citizen children	24.2	24.5	24.6	30.4
Children in families with citizen adults and citizen children	19.9	20.5	21.7	29.5
Adults in families with noncitizen adults and citizen children	1.6	1.9	2.9	4.0
Children in families with noncitizen adults and citizen children	1.4	1.7	2.7	4.7
Presence of Income				
Individuals in families with no income	1.6	2.2	4.5	6.6
Individuals in families with income	98.4	97.8	95.5	93.4
Presence of Earnings				
Individuals in families with earnings	81.2	78.1	76.2	69.3
Individuals in families without earnings	18.8	21.9	23.8	30.7
Presence of TANF				
Individuals in families with TANF	0.4	0.5	0.8	4.7
Individuals in families without TANF	99.6	99.5	99.2	95.3
Other Income				
Individuals in families with Social Security income	25.1	26.4	18.0	26.5
Individuals in families without Social Security income	74.9	73.6	82.0	73.5
Individuals in families with SSI	3.7	4.8	5.8	16.7
Individuals in families without SSI	96.3	95.2	94.2	83.3
Individuals in families with unemployment compensation	4.3	5.2	5.9	9.1
Individuals in families with no unemployment compensation	95.7	94.8	94.1	90.9
Mortgage Foreclosure Status (during study period)				
Individuals in housing units affected by foreclosure event	4.7	5.5	6.5	7.1
Individuals not in housing units affected by foreclosure event	95.3	94.5	93.5	92.9

Table continues

Table II.4, *continued*

Subgroup	At-Risk Individuals	For at Least One Month in 2008 Panel: At-Risk Individuals with Income <300% of Poverty	For at Least One Month in 2008 Panel: At-Risk Individuals with Income <100% of Poverty	SNAP Entrants
Characteristics of Individual's Neighborhood [b]				
Individuals living in high poverty neighborhood [c]	21.9	25.9	29.9	48.4
Individuals not living in high poverty neighborhood [c]	78.1	74.1	70.1	51.6
Individuals living in low-income neighborhood [d]	21.9	26.3	31.0	49.4
Individuals not living in low-income neighborhood [d]	78.1	73.7	69.0	50.6
Individuals living in high SNAP participation neighborhood	20.6	24.2	26.9	46.1
Individuals not living in high SNAP participation neighborhood	79.4	75.8	73.1	53.9
Geographic Access to Food [e]				
Individuals in low food access census tracts	44.0	42.1	41.1	38.4
Individuals not in low food access census tracts	56.0	57.9	58.9	61.6
Individuals in low-income census tracts with low food access	10.7	12.1	13.3	20.3
Individuals not in low-income/low-food access tracts	89.3	87.9	86.7	79.7
SNAP Policy Variables				
Vehicle/Categorical Eligibility Rules				
Individuals in States:				
Offering broad-based categorical eligibility	72.0	71.7	71.5	71.5
Excluding all or most vehicles	23.2	23.3	23.6	24.1
Excluding one or fewer vehicles for SNAP unit [f]	4.8	4.9	4.9	4.2
Average Certification Period				
Individuals in States with average certification periods:				
Under 10 months	24.7	24.9	25.1	25.8
Between 10 and 12.9 months	40.0	40.7	41.9	40.3
At least 13 months	35.3	34.4	33.0	34.0
Total Federal and State Outlays for SNAP Outreach				
Individuals in States with:				
Fiscal year federal outlays of $0	16.5	17.1	17.2	19.4
Fiscal year federal outlays between $1 and $500,000	23.7	23.4	23.4	21.8
Fiscal year outlays greater than $500,000	59.8	59.5	59.4	58.8
Sample Size: Person months	2,039,418	1,503,646	687,545	9,509
Sample Size: Total ever at-risk persons ever in category [g]	42,396	32,023	15,732	

Universe: Individuals at risk (not receiving SNAP benefits for at least two months; under poverty thresholds at some point during panel period) and new SNAP entrants. SNAP spells can begin in panel months 3-55 for monthly rates.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA "Characteristics of SNAP Households" reports, FY 2009-2012.

Notes: Subgroup characteristics as of reference month.

Gender is limited to adults age 18 and over. Data on previous receipt of SNAP benefits is only available for adults. We compute the entry rates for male and female adults because we do not expect entry rates to vary for male and female children.

[a] Categories are race *alone*; respondents who reported multiple races are in the Other, Non-Hispanic category.

[b] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[c] "High poverty" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[d] "Low-income" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[e] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[f] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets.

[g] The distributions are estimated based on person months. To assist the reader, we also provide the number of persons ever at risk (not receiving SNAP benefits for at least two months) in each of the income categories.

Where we see large differences between the characteristics of the at-risk population and the entrants, such as the previous receipt of SNAP benefits, we also expect to see large differences in entry rates (Table II.5). Among at-risk individuals who previously had not received SNAP benefits at any time in their adult lives, only about 3 in 1,000 entered the program in a given month; over the course of a year, about 39 in 1,000 entered. The entry rate among those who previously had received SNAP benefits was much higher—about 23 in 1,000 in a given month and 188 in 1,000 in a given year. At-risk individuals in families with children entered at a rate of about 10 in 1,000 per month (83 in 1,000 per year), while those without children entered at a rate of about 4 in 1,000 per month (42 in 1,000 per year).

Entry rates were also higher than average for individuals in families with disabled members, with SSI, with TANF, and with unemployment compensation. While the annual entry rate for all at-risk individuals was 6 percent, the rate for at-risk nonelderly disabled individuals was 16 percent. Individuals in families with SSI were about four times as likely to enter each year, with 20 percent entering per year versus 6 percent per year for individuals in families without SSI. The differential is much larger for individuals in families with TANF (43 percent entered per year) and those in families without TANF (6 percent entered per year).[25] Among at-risk individuals in families with unemployment compensation, about 9 percent entered, relative to 6 percent of individuals in families with any income.

We also examine entry rates by age, race and ethnicity, and education. Consistent with prior studies, age was negatively correlated with SNAP entry—about 29 in 1,000 at-risk adults over

[25] Table II.4 indicates that some categories, including "Individuals in families with TANF", have small sample sizes. Care must be taken in drawing conclusions for individuals in these categories.

age 60 entered each year, compared to 63 in 1,000 age 18 to 59 and 88 in 1,000 under age 18. The annual entry rate among non-Hispanic African American individuals was three times the entry rate among non-Hispanic white individuals, while the entry rate among Hispanic individuals was more than twice as high as the entry rate among non-Hispanic white individuals. The annual entry rate among individuals in families in which no one has a high school degree was more than double the entry rate among individuals in families with at least one high school graduate.

Individuals affected by mortgage foreclosure had higher entry rates than those not affected by foreclosure.[26] We found that 9 percent of those living in housing units foreclosed upon during the panel period entered SNAP in an average panel year, compared with 6 percent of those who did not live in a foreclosed property.

Entry rates were higher than average for individuals living in high poverty neighborhoods, individuals living in low-income neighborhoods, and individuals living in high SNAP participation neighborhoods. For example, 11 percent of at-risk individuals living in low-income neighborhoods entered SNAP in a panel year, on average, compared with 5 percent of those not living in low-income neighborhoods. However, entry rates did not differ much according to whether individuals lived in Census tracts with low food access.[27] About 6 percent of individuals living in low food access Census tracts and 7 percent of individuals not in low food access Census tracts enter on average in a given panel year.[28]

Entry rates also did not vary substantially by measures of differences in State SNAP policy. For example, among at-risk individuals living in States offering broad-based categorical eligibility and among those living in States without broad-based categorical eligibility policies but that exclude all or most vehicles, 7 out of 1,000 entered SNAP in a given month. Of individuals in States excluding one or fewer vehicles per SNAP unit, including those in States that do not exclude any vehicles but have higher vehicle asset limits than the federal minimums, 6 out of 1,000 entered SNAP in a given month. Similarly, monthly entry rates also do not appear

[26] Using an internal Census Bureau mortgage foreclosure data set, we define two complementary subgroups. Individuals in housing units affected by a foreclosure event are those living in housing units that are associated with a list of foreclosure events occurring during the first 40 months of the study period. Sample size did not permit us to limit this analysis to only homeowners. Indeed, about half of individuals who live in foreclosure-affected housing units are not homeowners, but they may also experience disruption and hardship due to the foreclosure.

[27] To assess geographic access to food, we identify low food access Census tracts as those in which a substantial number or share of individuals in the tracts are far from a supermarket. In particular, the measure used evaluates whether a tract has at least 500 people or 33 percent of its population living more than 1 mile in urban areas or more than 10 miles in rural areas from the nearest supermarket, supercenter, or large grocery store. We define a low-income census tract with low food access as a low food access tract where the tract is also considered low-income according to the Department of Treasury's New Markets Tax Credit Program. These census tracts are those where the poverty rate is 20 percent or greater; the median family income is less than or equal to 80 percent of the statewide median family income; or the tract is in a metropolitan area that has a median family income less than or equal to 80 percent of the metropolitan area's median family income.

[28] Although there were differences in entry rates for individuals according to whether they lived in low-income tracts with low food access, the findings from considering separate measures of income and food access suggest that this reflects the income level of the tract and not the level of food access.

to vary much by the average SNAP certification period in the State or by the amount of the individual's State outreach outlays.[29]

Table II.5 Monthly, Wave-Based, and Annual SNAP Entry Rates by Subgroup, 2008 SIPP Panel

	Entry Rates		
Subgroup	Monthly	Wave-Based	Annual
All Individuals	0.7	2.6	6.2
SNAP Benefit Receipt			
Never received SNAP benefits (age 18 and older)	0.3	1.3	3.9
Previously received SNAP benefits (age 18 and older)	2.3	9.0	18.8
Family Composition			
Individuals in families with children	1.0	3.7	8.3
Adults in families with children and one adult	1.6	6.1	12.1
Children in families with children and one adult	1.9	7.2	12.8
Adults in families with children and multiple adults	2.0	7.8	15.5
Children in families with children and multiple adults	2.5	9.4	17.8
Adults in families with children and a married head	0.6	2.4	6.2
Children in families with children and a married head	0.7	2.8	7.1
Children in child-only families	1.1	3.7	8.1
Individuals in families without children	0.4	1.6	4.2
Individuals in families with elderly members	0.3	1.2	3.2
Elderly members living alone	0.2	0.9	2.1
Elderly members living with other elderly individuals	0.1	0.5	1.7
Elderly members living with nonelderly individuals	0.6	2.3	5.9
Individuals in families with disabled members	1.4	5.4	12.9
Individuals in families without any elderly or disabled members	0.3	1.4	3.8
Age and Disability			
Nonelderly disabled adults	1.8	6.8	15.7
Nonelderly nondisabled childless adults	0.4	1.4	4.0
Age			
Children (under age 18)	1.0	4.0	8.8
Nonelderly adults (age 18 - 59)	0.7	2.6	6.3
Elderly adults (age 60 and over)	0.3	1.1	2.9
Sex			
Male (age 18 and over)	0.5	2.0	5.0
Female (age 18 and over)	0.6	2.4	5.9

Table continues

[29] In the tables for this report, we used the following categories of State outreach fiscal year outlay amounts: $0, $1 to $500,000, and more than $500,000. These categories do not control for the size of the State's at-risk population. As a sensitivity test, we estimated entry rates by State per capita outreach amounts ($0, up to $1 dollar per person, and at least $1 per person), and the results were similar.

Table II.5, *continued*

Subgroup	Entry Rates		
	Monthly	Wave-Based	Annual
Race/Ethnicity [a]			
White, Non-Hispanic	0.4	1.7	4.1
African American, Non-Hispanic	1.4	5.3	12.2
Hispanic, all races	1.1	4.5	10.4
Asian, Non-Hispanic	0.4	1.5	4.2
Other, Non-Hispanic	1.0	4.1	9.7
Education			
Individuals in families with high school graduates	0.6	2.4	5.7
Individuals in families with no high school graduates	1.5	5.7	12.6
Citizenship			
Citizen	0.7	2.6	6.1
Noncitizen	0.9	3.5	8.0
Citizen children living with noncitizen adults in the family	1.6	6.1	13.9
Adults in families with citizen adults and citizen children	0.8	3.3	7.5
Children in families with citizen adults and citizen children	1.0	3.8	8.3
Adults in families with noncitizen adults and citizen children	1.5	5.8	13.5
Children in families with noncitizen adults and citizen children	1.9	7.4	16.1
Presence of Income			
Individuals in families with no income	2.1	6.9	12.7
Individuals in families with income	0.6	2.5	6.1
Presence of Earnings			
Individuals in families with earnings	0.6	2.4	5.9
Individuals in families without earnings	1.0	3.5	7.5
Presence of TANF			
Individuals in families with TANF	5.9	22.3	42.6
Individuals in families without TANF	0.6	2.5	6.1
Other Income			
Individuals in families with Social Security income	0.7	2.7	6.4
Individuals in families without Social Security income	0.7	2.6	6.2
Individuals in families with SSI	2.4	9.3	20.4
Individuals in families without SSI	0.6	2.3	5.5
Individuals in families with unemployment compensation	1.2	4.3	8.9
Individuals in families with no unemployment compensation	0.6	2.5	6.1
Mortgage Foreclosure Status (during study period)			
Individuals in housing units affected by foreclosure event	0.9	3.4	9.0
Individuals not in housing units affected by foreclosure event	0.7	2.6	6.1

Table continues

Table II.5, *continued*

Subgroup	Entry Rates		
	Monthly	Wave-Based	Annual
Characteristics of Individual's Neighborhood [b]			
Individuals living in high poverty neighborhood [c]	1.3	4.9	11.1
Individuals not living in high poverty neighborhood [c]	0.5	1.8	4.6
Individuals living in low-income neighborhood [d]	1.3	5.0	11.3
Individuals not living in low-income neighborhood [d]	0.5	1.8	4.5
Individuals living in high SNAP participation neighborhood	1.3	5.0	11.3
Individuals not living in high SNAP participation neighborhood	0.5	1.9	4.6
Geographic Access to Food [e]			
Individuals in low food access census tracts	0.6	2.4	5.7
Individuals not in low food access census tracts	0.7	2.8	6.7
Individuals in low-income census tracts with low food access	1.1	4.4	10.1
Individuals not in low-income/low-food access tracts	0.6	2.4	5.8
SNAP Policy Variables			
Vehicle/Categorical Eligibility Rules			
Individuals in States:			
Offering broad-based categorical eligibility	0.7	2.6	6.4
Excluding all or most vehicles	0.7	2.7	6.1
Excluding one or fewer vehicles for SNAP unit [f]	0.6	2.4	5.3
Average Certification Period			
Individuals in States with average certification periods:			
Under 10 months	0.7	2.7	6.3
Between 10 and 12.9 months	0.7	2.6	6.2
At least 13 months	0.7	2.6	6.3
Total Federal and State Outlays for SNAP Outreach			
Individuals in States with:			
Fiscal year federal outlays of $0	0.8	2.9	6.7
Fiscal year federal outlays between $1 and $500,000	0.6	2.5	6.0
Fiscal year outlays greater than $500,000	0.7	2.6	6.1
Sample Size: Person months	1,502,002	369,020	57,381

Universe: Person months of those at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period). SNAP spells can begin in panel months 3-55 for monthly rates, 5-53 for wave-based rates, and 10-46 for annual rates.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA "Characteristics of SNAP Households" reports, FY 2009-2012.

Notes: Subgroup characteristics as of panel month 2 for monthly estimates, panel month 4 for wave-based estimates, and panel month 9 for annual estimates.

Gender is limited to adults age 18 and over. Data on previous receipt of SNAP benefits is only available for adults. We compute the entry rates for male and female adults because we do not expect entry rates to vary for male and female children.

[a] Categories are race *alone*; respondents who reported multiple races are in the Other, Non-Hispanic category.

[b] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[c] "High poverty" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[d] "Low-income" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[e] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[f] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets

An alternate approach to understanding entry into SNAP is to examine the age at which adults first enter the program. Table II.6 presents estimates of the ages at which a cohort of adults initially enter SNAP (if they enter at all).[30] We limit this analysis to adults because the history of SNAP receipt is not available for children. The cumulative entry rate in the first column shows that 10 percent of adults participated in SNAP between ages 18 and 30. Overall, we estimate that 41 percent of these adults would participate in SNAP at some point in their adult lives. The cumulative entry rate among entrants shown in the second column suggests that 12 percent of all new entrants would have started participating between the ages of 18 and 20 and nearly half (44 percent) by the time they were age 30. We also infer that 21 percent of adult entrants (sum of the last three rows in the third column) would have entered for the first time after age 50.

[30] The estimates in Table II.6 are based on a cross section of individuals as of month 4 of the SIPP panel period. For this sample, we examine whether they had ever received SNAP benefits and, if they had, calculate the age at which they first entered the program, using data from the Wave 1 Topical Module and restricted-use SIPP data available at the Census Bureau. We then used this information to construct a "life table" for an artificial cohort of individuals (see Section B of this chapter for a description of the life table methodology). For every possible age between 18 and 80, this life table estimates yearly initial entry rates by calculating the percentage of the sample entering SNAP for the first time at that age, among those in the sample who were at least that old and who had not entered the program at a younger age. These yearly initial entry rates are then translated to cumulative initial entry rates among the full sample and among sample members who ultimately entered the program. One important assumption implicit in this methodology is that all individuals in the artificial cohort live to at least age 71. Another required assumption is that there is a stationarity over time in initial entry rates, since we are using information from a cross section of individuals to infer what would happen to a single cohort.

Table II.6 Age at Which Adults First Enter SNAP, 2008 SIPP Panel

Age	Cumulative Entry Rate	Cumulative Entry Rate Among SNAP Entrants	Percentage of Initial SNAP Entrants
18 to 20	2.6	11.7	11.7
21 to 30	10.0	43.6	31.9
31 to 40	15.6	64.0	20.4
41 to 50	20.8	79.3	15.2
51 to 60	25.7	89.4	10.1
61 to 70	30.4	95.2	5.8
Older than 70	41.4	100.0	4.8

Universe: Person months of those at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period), age 18 and older in panel month 4 (and assumes all individuals will live to be at least 71). SNAP spells can begin in panel months 3-55.
Source: Decision Demographics tabulations of the 2008 SIPP Panel.

2. Entry Trigger Events

Prior studies of SNAP dynamics have provided evidence that individuals typically enter SNAP in response to a change in their life circumstances—for example, a loss of income or the addition of a family member. Although we cannot directly identify the direct cause of a person's entry, we can examine his or her family income and the employment status and composition of the family immediately preceding entry. Observed changes can help policymakers understand the events that may have led that person to enter the program (that is, the entry trigger events), and help identify points of intervention to help reduce the need for people to enter.

a. Methods

To examine entry trigger events, we define SNAP entry as participation in SNAP in a given month after at least two consecutive months of nonparticipation. To ensure that the period prior to entry will be long enough to observe possible entry trigger events, we change our analysis period. When we examine potential entry trigger events over a four-month window immediately preceding an entry, we limit our sample to months 5 to 54 among entries and months 2 to 50 among triggers. We define a trigger event as having occurred in the window if it changed across any two consecutive months. When we examine potential entry trigger events over an eight-month window immediately preceding an entry, we limit our sample to months 9 to 54 among entries and months 2 to 46 among triggers.

We define our entry trigger events based on previous research (Mabli et al., 2011a; Cody et al., 2007; Gleason et al., 1998; and Burstein 1993). Specifically, we include the following trigger events:

1. **Recently unemployed family member:** We distinguish between whether the recently unemployed family member was the respondent or another family member.

2. **Decrease in family income:** We distinguish between whether the decrease in family income was a result of a 10 percent or more reduction in earnings, a decrease in TANF income, or a 10 percent or more reduction in other income.[31]
3. **Change in family composition:** We distinguish between whether the change in family composition arose due to a pregnancy or new infant in the family, a new non-infant dependent in the family, a new separation or divorce, or another family composition change.[32]

b. Distribution of Entry Trigger Events in the 2008 Panel

In Table II.7, we present the primary results of the entry trigger analysis. The first column shows the percentage of the at-risk population that experienced each trigger event *at some point during the sample.*[33] In the second column, we look forward four months from the time of the trigger event and indicate the percentage of those experiencing the trigger event that entered SNAP within those four months. In the third column, we look backward four months from SNAP entry to find the percentage of entrants who experienced the trigger event prior to entry. Similarly, the fourth and fifth columns provide the percentage entering within eight months of the trigger event and the percentage of entrants who experienced the trigger event in the eight months prior to entry, respectively. By looking forward from the trigger, the "trigger-centered" view identifies how often a trigger leads to entry. But this measure alone does not provide enough information because a trigger event that does not occur often but usually leads to entry when it does occur only helps us identify the trigger events for a small percentage of entrants. By looking backward from the entry for the occurrences of trigger events, we develop a clearer picture of the impact that each trigger event has on entry into SNAP.

Although the identified trigger events play key roles in SNAP entry, with 54 percent of all entries preceded within four months by at least one of these trigger events, 47 percent of entries occur without an obvious recent change in circumstances. It could be that the entrants waited longer than four months to enter (67 percent of entries occur within eight months of a trigger) or were enticed to enter because of outreach programs or changes in policy that simplified

[31] If we observe a decrease in income during any month of the trigger window, it is considered a trigger event, regardless of what happened to income in other months of the trigger window. Thus, if a sample member experienced a 10 percent decrease in family income in one month and gained the income back in a subsequent month, it is still considered a trigger event. On the other hand, if a sample member experienced a series of 5 percent decreases in family income in consecutive months during the trigger window, this is not considered a trigger event.

[32] This category includes cases that change composition as defined by the groups listed in Table II.4: individuals (adults or children) in families with children and one adult; individuals in families with children and a married head; individuals in families with children and multiple adults (not married head); children in child-only families; individuals in families with elderly members; individuals in families with no elderly members but with disabled members; and individuals in families without any disabled or elderly members. For example, if a cohabiting couple with children marries, the individuals would change from "individuals in families with children and multiple adults" to "individuals in families with children and a married head." If a 17-year-old in a family with children and one adult turns 18, the individuals would change from "individuals in families with children and one adult" to "individuals in families with children and multiple adults."

[33] Entry rates among groups with small percentages experiencing the event in the panel period are less reliable (for example, those experiencing a decrease in TANF income and those experiencing no trigger event).

participation. There could also be trigger events not covered here, including onset of illness or medical condition and termination of unreported income from another family member in a different dwelling unit.

Among those who experienced a trigger, the most common events were related to decreases in family income. Among those who entered SNAP, 30 percent experienced a decrease in family earnings of 10 percent or more, and 23 percent experienced a loss in other family income (aside from earnings and TANF) during the prior four months. The most likely reason why a decrease in family income was the most common trigger event among SNAP entrants is that loss of income was highly common among the at-risk population at some point during the panel. In this at-risk population, 80 percent experienced a decrease in family earnings of at least 10 percent at some point during the analysis period, and 81 percent experienced a decrease in other types of family income. Looking at how many of the at-risk individuals entered the program (the second column), one sees that that only 3 percent of those who experienced a loss of earnings entered within four months and 2 percent of those who experienced a loss of other income entered within four months.

Prior studies of SNAP dynamics have found that triggers that do not occur as often in the at-risk population are more predictive of SNAP entry. That remains true in the current study for several triggers. For example, many at-risk individuals experienced a decreased in earnings, but a smaller percentage of these individuals subsequently entered SNAP (3 percent), whereas few at-risk individuals experienced a decrease in TANF income, but a much larger percentage of these individuals (18 percent) subsequently entered SNAP. Similarly, only 10 percent of the at-risk population experienced a pregnancy or birth in the family at least once during the analysis period, but, looking forward, 4 percent of the pregnancies and births were associated with entry into SNAP within four months. Separations and divorces in the family occurred less often and were associated with an entry within four months in 5 percent of the cases where they occurred.

In addition to examining the four-month period prior to entry, we examine the eight-month period prior to entry. We know that some events may not lead to immediate or near-term entry into SNAP. For example, for the first few months after a job loss, a family may be able to survive by drawing down assets. If, however, they are unable to replace the income over time, they may ultimately decide to enter SNAP. In this case the job loss would still be the trigger to entry, but would not be observed immediately preceding the entry.

The eight-month window increased the percentage of SNAP entries preceded by a trigger event, from 54 percent to 67 percent. It also increased the percentage entering SNAP of the at-risk population who experienced a trigger event: 3 percent entered within four months of any trigger and 5 percent entered within eight months.

One difficulty in studying entry rates based on triggers is that triggers can, and often do, occur together. For example, the birth of a child may lead a parent to stay home to care for the child, leading to a loss of income. In fact, Table II.7 indicates that 22 percent of entrants experienced multiple events in the four months prior to their entry, so over 40 percent of the 54

percent of entrants that experienced at least one trigger event in the previous four months actually experienced more than one trigger event. In the eight months prior to their SNAP entry, 38 percent experienced multiple events.

Table II.7 Frequency and Rate of SNAP Entry Following Specific Entry Trigger Events, 2008 SIPP Panel

Trigger Event (Not Mutually Exclusive)	Percentage of At-Risk Group Experiencing Event at Some Point in Panel	Percentage of People Experiencing an Event who Entered SNAP within 4 Months of Experiencing the Event	Percentage of SNAP Entrants who Experienced the Event in Previous 4 Months	Percentage of People Experiencing an Event who Entered SNAP within 8 Months of Experiencing the Event	Percentage of SNAP Entrants who Experienced the Event in Previous 8 Months
Change in Family Composition					
Pregnant/New infant in family	9.8	4.3	1.5	10.6	4.2
New dependent (non-infant) in family	17.4	7.2	5.2	12.1	8.2
Newly separated or divorced	5.1	5.3	1.0	9.0	1.8
Other composition change	23.6	4.4	4.8	7.4	7.6
Recently Unemployed Family Member					
Self	22.6	4.9	5.9	8.1	9.4
Other family member	35.7	4.8	10.5	8.4	16.4
Decrease in Family Income					
Earnings (10% or more)	79.8	3.4	30.2	5.9	43.5
TANF	1.9	17.5	1.5	27.0	2.0
Other income (10% or more)	81.0	2.2	23.2	4.0	35.7
Trigger Events					
Experienced no trigger events	6.6	NA	46.5	NA	32.6
Experienced any one trigger event	14.2	NA	31.3	NA	29.8
Experienced multiple events	79.1	NA	22.2	NA	37.5
Experienced any trigger event	93.4	3.1	53.5	5.4	67.4
Sample Size (Person months)	32,848	216,561	8,460	200,043	7,624

Universe: All individuals at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period). Percent experiencing event at some point: individual level; Percent entering within specified number of months of experiencing event: person month level; Percent of entrants: individuals entering SNAP.

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Notes: Reference months: SNAP entries (4-month window): panel months 5-54, SNAP entries (8-month window): panel months 9-54; triggers (4-month window): panel months 2-50, triggers (8-month window): panel months 2-46.

In Table II.8, we again examine how often some of these same trigger events precede SNAP entry by four and eight months, but we order the trigger events to make each row mutually exclusive. We first identify the entries that were preceded by the unemployment of a family member. Next, we identify the entries that were not preceded by the unemployment of a family member, but were preceded by a decrease in family income (earnings, TANF, or other income). Finally, we identify entries that were not preceded by the unemployment or income decreases, but were preceded by a family composition change. We see that 16 percent of entrants experienced the unemployment of a family member in the four months prior to entry, and another 21 percent experienced a decrease in earnings that was not through unemployment.

Table II.8 Rate of SNAP Entry Trigger Events, Mutually Exclusive Categories, 2008 SIPP Panel

Trigger Event (Mutually Exclusive Order)	Percentage of At-Risk Group Experiencing Event at Some Point in Panel	Percentage of SNAP Entrants who Experienced the Event in Previous 4 Months	Percentage of SNAP Entrants who Experienced the Event in Previous 8 Months
Recently Unemployed Family Member (either self or other)	48.4	15.5	23.8
No Unemployment, Decrease in Family Income			
Decrease in earnings (10% or more)	33.8	20.6	26.4
Decrease in TANF, no decrease in earnings	0.2	0.9	0.7
Decrease in other income (10% or more)	10.2	12.3	12.7
No Unemployment, no Decrease in Income, Change in Family Composition			
Pregnant/New infant in family	0.2	0.7	0.9
New dependent (non-infant) in family	0.2	1.7	1.3
Newly separated or divorced	0.1	0.2	0.1
Other composition change	0.3	1.6	1.4
Sample Size (Person months)	32,848	8,460	7,624

Universe: Person months at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period).

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Notes: Reference months: SNAP entries (4-month window): panel months 5-54, SNAP entries (8-month window): panel months 9-54.

In Table II.9, we combine the triggers into three categories (unemployment, income decrease, and change in family composition) and examine the overlap for entrants. That is, we look at the percentage of the sample that experienced a change in each type of event and the percentages of the sample that experienced a change in each pair of events, such as changes in family composition and employment or changes in unemployment and income.

We see that 45 percent of entrants experienced a decrease in family income of at least 10 percent in the four months prior to entry, but it was accompanied by the unemployment of someone in the family for only 11 percent of entrants. When we increase the window to eight months, we find that 60 percent of entrants experienced a decrease in family income, and this was accompanied by the unemployment of someone in the family for 20 percent of entrants and by a change in family composition for 14 percent of entrants. Additionally, we find, as expected, that entrants with a recently unemployed family member within the previous four months (16 percent of all entrants) generally also experience a decrease in family income of 10 percent or more (11 percent of all entrants). Likewise, entrants who experienced a change in family composition in the previous four months (12 percent of all entrants) more often than not also experienced a decrease in family income of 10 percent or more (7 percent of all entrants).

Table II.9 Overlap in SNAP Entry Trigger Events, 2008 SIPP Panel

Trigger Event (Mutually Exclusive Order)	Percentage of SNAP Entrants who Experienced the Event in Previous 4 Months	Percentage of SNAP Entrants who Experienced the Event in Previous 8 Months
Recently Unemployed Family Member	15.5	23.8
Experiencing additional decrease in family income (10% or more)	11.4	19.8
Experiencing change in family composition	2.7	6.2
Decrease in Family Income (10% or more)	45.1	59.6
With recently unemployed family member	11.4	19.8
Experiencing change in family composition	7.0	13.9
Change in Family Composition	11.8	18.4
With recently unemployed family member	2.7	6.2
Experiencing additional decrease in family income (10% or more)	7.0	13.9

Universe: Person months at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period).

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Notes: Reference months: SNAP entries (4-month window): panel months 5-54, SNAP entries (8-month window): panel months 9-54.

The final method we use to examine entry triggers into SNAP is to look at the triggers in the context of how often they occur in the family. For example, if changes in family composition are common in a household, is that trigger event less likely to lead to SNAP entry than if it is an uncommon event? The descriptive evidence in Table II.10, which presents the entry rates according to the deviation of the trigger event from the family's usual circumstances, shows that this is largely not the case. We find that monthly entry rates among those who experienced a family composition change in the previous four months were higher for those who had experienced multiple composition changes in the past 24 months than for those with just one composition change. We also find that, among those experiencing a decrease in earnings of at least 10 percent in the previous four months, the highest entry rates were among the individuals with family earnings that fluctuated less often (1 or 2 times) in the previous 24 months than among the individuals with at least 3 fluctuations. On the other hand, more fluctuations are associated with higher entry rates for individuals with at least a 10 percent decrease in other (non-TANF or earnings) income.

Table II.10 Monthly SNAP Entry Rates by Trigger Event and Degree of Deviation from Usual Circumstances, 2008 SIPP Panel

Trigger Event	Percentage of SNAP Entrants with Event	Percentage of At-Risk Sample with Event	SNAP Entry Rate with Event
Change in Family Composition in Previous 4 Months (Sample Size)	24	484	
In previous 24 months, family experienced			
One composition change	44.6	58.7	3.7
More than one composition change	55.4	41.3	6.5
Unemployed Family Member in Previous 4 Months (Sample Size)	68	1,935	
Individual unemployed in previous 24 months			
1-6 months	49.0	46.6	3.9
7-12 months	16.6	28.9	2.1
13-24 months	34.4	24.5	5.1
Individual's unemployment spells in previous 24 months			
1 spell	60.7	54.6	4.1
2 spells	31.4	32.9	3.5
3 or more spells	7.9	12.5	2.3
At Least a 10 Percent Decrease in Earnings in Previous 4 Months (Sample Size)	67	2,689	
Number of times family earnings increased or decreased by more than one standard deviation in previous 24 months			
1 fluctuation	12.2	8.1	3.4
2 fluctuations	31.7	23.0	3.2
3 or more fluctuations	56.1	68.9	1.9

Table continues

Table II.10, *continued*

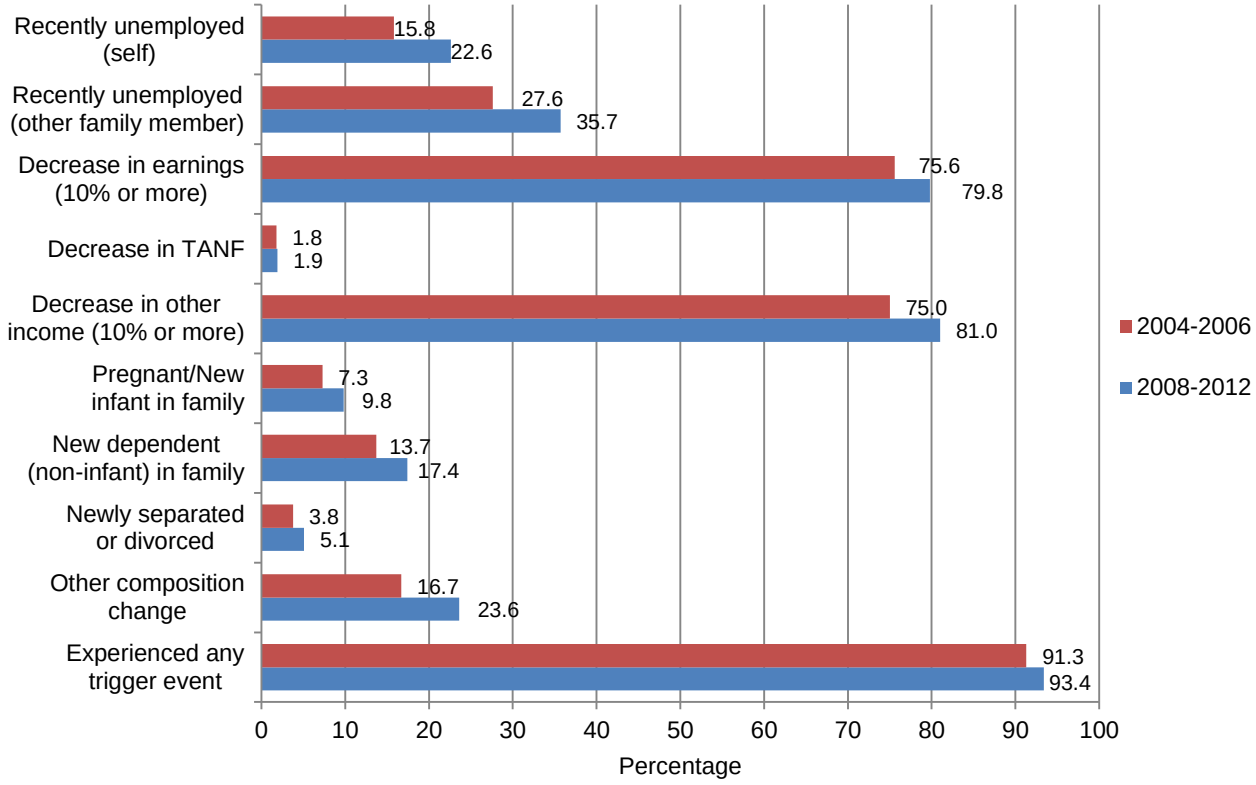
Trigger Event	Percentage of SNAP Entrants with Event	Percentage of At-Risk Sample with Event	SNAP Entry Rate with Event
Entry Month's Earnings as Percentage of Average Earnings in Previous 24 Months			
0 to under 50%	28.1	19.3	3.4
50 to under 100%	32.0	31.3	2.4
100% or more	39.8	49.4	1.9
At Least a 10 Percent Decrease in Other Income in Previous 4 Months (Sample Size)	54	2,926	
Number of times family earnings increased or decreased by more than one standard deviation in previous 24 months			
1 fluctuation	7.6	12.7	1.1
2 fluctuations	39.5	40.8	1.8
3 or more fluctuations	52.9	46.5	2.1

Universe: Person months at risk (not receiving SNAP benefits for at least 2 months and income <300% of poverty at some point during panel period).
Source: Decision Demographics tabulations of the 2008 SIPP Panel.
Notes: Reference months: panel months 1-24; 4-month window: panel months 21-24.

c. Changes in the Distribution of Entry Trigger Events from the Mid-2000s to the 2008 to 2012 SIPP Panel Period

There have been changes from the mid-2000s to the 2008 to 2012 time period in the occurrence of SNAP entry trigger events, the rates of entry following them, and the percentage of SNAP entrants who experienced the event in the past four months. A higher proportion of at-risk individuals in SIPP panels experienced trigger events between 2008 and 2012 than between 2004 and 2006. For example, the percentage of at-risk individuals experiencing any trigger event at some point in the panel increased from 91.3 to 93.4 percent from the mid-2000s to the 2008 to 2012 time period (Figure II.3). In particular, there was a 7 percentage point increase in the percentage of individuals who became unemployed themselves (rising from 16 percent in the earlier panel to 23 percent in the current panel), and an 8 percentage point increase in the percentage of individuals who were in families with recently unemployed members other than themselves (rising from 28 percent in the earlier panel to 36 percent in the current panel). Similarly, 81 percent of at-risk individuals in the most recent panel saw a 10 percent or more decrease in other non-earnings, non-TANF income, relative to 75 percent in the previous panel. Additionally, trigger events in the 2008 panel could be explained, in part, by the wider length of the more recent panel period, allowing more time for at-risk individuals to experience trigger events. However, the Great Recession may also have had an effect, particularly on the number encountering unemployment.

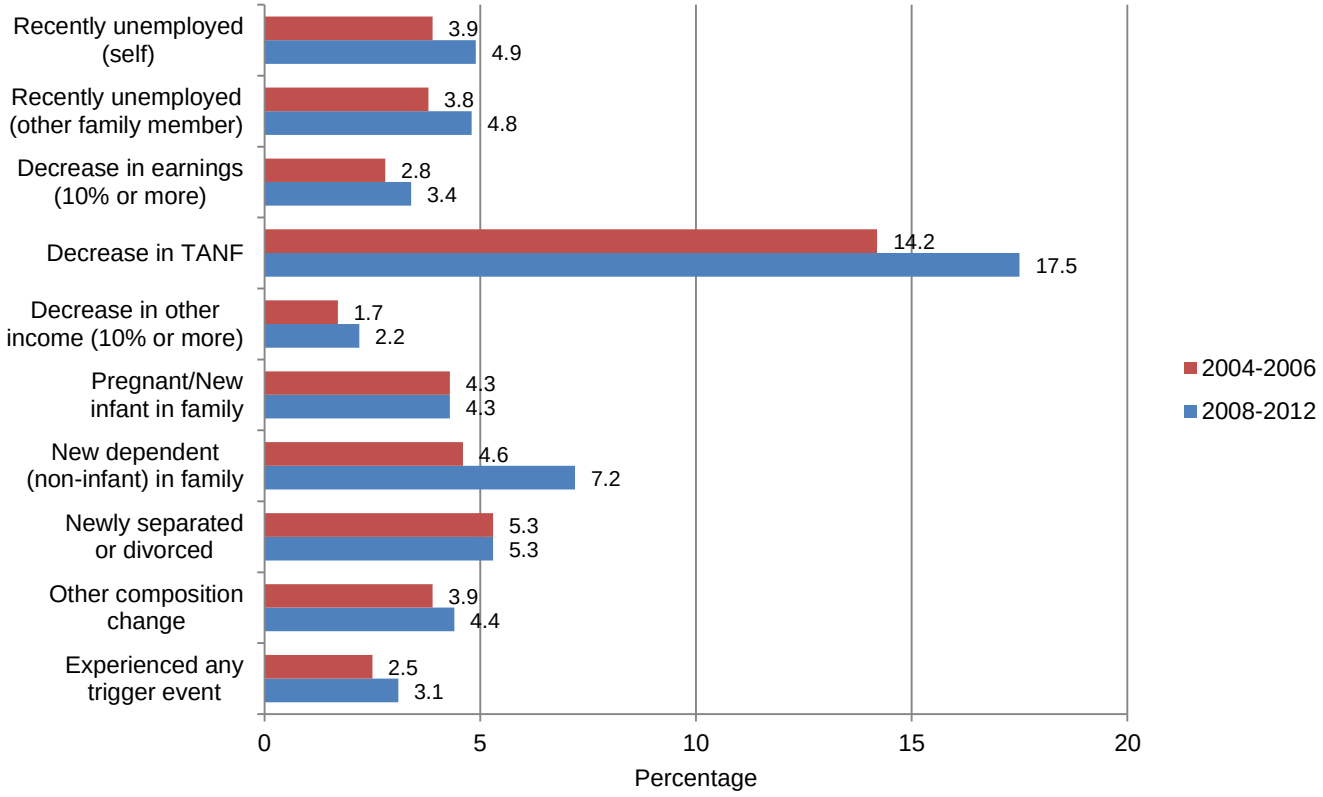
Figure II.3 Percentage of At-Risk Group Experiencing Event, Comparison Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006.

The percentage of individuals with trigger events who entered SNAP within four months of experiencing the event also increased in 2008 to 2012, relative to 2004 to 2006 (Figure II.4). Among those who experienced any trigger event, the entry rate increased from 2.5 percent to 3.1 percent. The largest percentage point increases in entry rates occurred for individuals in families with a decrease in TANF income and for individuals with new non-infant dependents in the family.

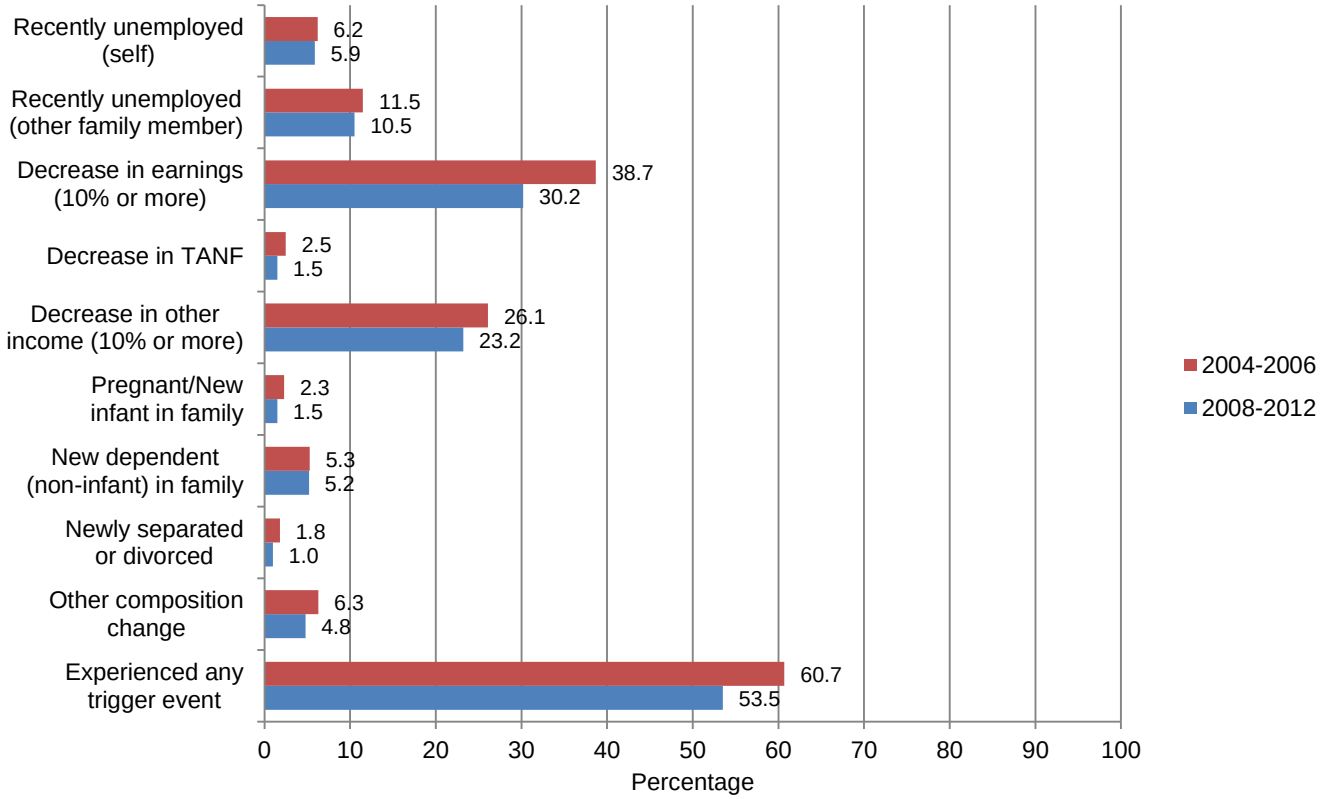
Figure II.4 Percentage of At-Risk Group Who Entered SNAP within Four Months of Experiencing Event, Comparison Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006.

Despite the increase in the percentage of individuals who are in families experiencing trigger events and the increase in entry rates among those individuals, the proportion of the SNAP caseload whose entry was preceded by a trigger event within the previous four months decreased from 61 percent in the 2004 to 2006 time period to 54 percent in the 2008 to 2012 time period (Figure II.5). In particular, the percentage of SNAP entrants who had experienced a 10 percent or more decrease in earnings in the previous four months fell from 39 percent from 2004 to 2006 to 30 percent from 2008 to 2012. As discussed in Section II.2.b, among other factors, it is possible that entrants waited longer than four months to enter after experiencing a trigger event or that other types of trigger events that are not being captured on our list might be becoming more common.

Figure II.5 Percentage of SNAP Entrants Who Experienced Event in Previous Four Months, Comparison Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006.

3. Entry Rates Before and After Implementation of American Recovery and Reinvestment Act

ARRA took effect on April 1, 2009. This legislation increased the maximum SNAP benefit from 100.0 percent to 113.6 percent of the June 2008 Thrifty Food Plan. For a family of four in the contiguous United States, the maximum benefit increased from $588 in March 2009 to $668 in April 2009. As a result, households were eligible for higher SNAP benefit levels at all net income amounts than they had been previously, and thus may have been more likely to enter SNAP after ARRA implementation. ARRA also increased minimum SNAP benefits for the contiguous U.S., Alaska, Hawaii, Guam, and the Virgin Islands to 8 percent of the maximum SNAP benefit and gave States the option to suspend time limits on benefits for nondisabled adults subject to work requirements. In this section, we examine whether the benefit increase stemming from ARRA is associated with increased program enrollment and, in particular, whether the benefit increase may have played a role in the number of entrants at the upper end of the income eligibility spectrum participating in the program.

a. Methods

To assess whether entry rates were higher following the implementation of ARRA than they had been before, we compare average monthly entry rates during a pre-ARRA time period to those from a post-ARRA time period. We use a pre-ARRA time period of October 2008 through March 2009 and a post-ARRA time period of April 2009 through September 2009, mainly to separate out the effect of SNAP policy changes, which often occur at the start of a new fiscal year. For example, provisions in the 2008 Farm Bill that became effective on October 1, 2008, included an increase in the minimum SNAP benefit for one- and two-person households and an increase in the standard deduction, among other changes. We focus on the groups of at-risk individuals shown in Table II.11.

b. Monthly Entry Rates Before and After ARRA Implementation

The average monthly entry rate for at-risk individuals (roughly 8 out of 1,000 at-risk individuals) remained about the same from the six months preceding ARRA to the six months following the implementation of ARRA (Table II.11), though the rates before and after ARRA implementation varied by subgroup. In particular, individuals with family income slightly above poverty entered at a noticeably higher rate (20 out of 1,000) after ARRA implementation than before implementation (17 out of 1,000), indicating the possibility of the ARRA SNAP benefit increases affecting the decision to enter into SNAP. However, the increase could have also been due to the worsening economy and/or changes in other program policies. This pattern of increased entry for individuals in families with income between 100 to 130 percent of poverty holds for individuals who had previously received SNAP benefits, those in families with children, those in families with children and one adult, those in families with elderly or disabled members, and those who are nonelderly nondisabled childless adults. For most other poverty

groupings and in most subgroups, the entry rate declined modestly after ARRA implementation.[34]

Entry rates before and after ARRA implementation varied for other subgroups as well. Entry rates declined for individuals who had never received SNAP benefits, those in families with children, and those in families with children and one adult. However, the entry rate increased for nonelderly nondisabled childless adults, perhaps because the State option to waive time limits on benefits for those subject to work requirements made the program more accessible for this subgroup.

Table II.11 Average Monthly Entry Rates for Those at Risk Before and After ARRA Implementation by Family Poverty Status, 2008 SIPP Panel

Subgroup	Average Monthly Entry Rate in Months Preceding ARRA (October 2008–March 2009)	Average Monthly Entry Rate in Months Following ARRA (April 2009–September 2009)
All Individuals by Family Poverty Status	0.8	0.8
Under 50 percent of poverty	2.8	2.4
50 to under 100 percent of poverty	3.4	3.1
100 to 130 percent of poverty	1.7	2.0
More than 130 to under 200 percent of poverty	0.8	0.7
200 or more percent of poverty	0.3	0.2
Individuals Who Had Never Received SNAP Benefits, by Family Poverty Status	0.5	0.4
Under 50 percent of poverty	1.4	1.3
50 to under 100 percent of poverty	2.1	1.3
100 to 130 percent of poverty	1.1	1.1
More than 130 to under 200 percent of poverty	0.5	0.4
200 or more percent of poverty	0.2	0.2
Individuals Who Had Previously Received SNAP Benefits, by Family Poverty Status	2.6	2.6
Under 50 percent of poverty	8.5	6.2
50 to under 100 percent of poverty	5.5	6.5
100 to 130 percent of poverty	3.2	3.8
More than 130 to under 200 percent of poverty	2.1	2.4
200 or more percent of poverty	1.0	0.8

Table continues

[34] The other family poverty groupings we looked at in this table were (1) income under 50 percent of poverty; (2) income between 50 to 100 percent of poverty; (3) income between 130 and 200 percent of poverty; and (4) income of 200 percent of poverty or more.

Table II.11, *continued*

Subgroup	Average Monthly Entry Rate in Months Preceding ARRA (October 2008–March 2009)	Average Monthly Entry Rate in Months Following ARRA (April 2009–September 2009)
Individuals in Families with Children, by Family Poverty Status	1.2	1.1
Under 50 percent of poverty	4.0	3.1
50 to under 100 percent of poverty	4.7	4.3
100 to 130 percent of poverty	2.4	2.7
More than 130 to under 200 percent of poverty	1.2	1.0
200 or more percent of poverty	0.4	0.3
Individuals in Families with Children and One Adult, by Family Poverty Status	2.5	2.1
Under 50 percent of poverty	6.8	3.7
50 to under 100 percent of poverty	8.5	5.3
100 to 130 percent of poverty	2.8	5.1
More than 130 to under 200 percent of poverty	1.3	1.0
200 or more percent of poverty	0.2	0.4
Individuals in Families with Elderly or Disabled Members, by Family Poverty Status	0.5	0.5
Under 50 percent of poverty	2.1	1.7
50 to under 100 percent of poverty	2.1	1.6
100 to 130 percent of poverty	0.8	0.9
More than 130 to under 200 percent of poverty	0.5	0.5
200 or more percent of poverty	0.2	0.2
Nonelderly Nondisabled Childless Adults, by Family Poverty Status	0.3	0.4
Under 50 percent of poverty	1.2	1.3
50 to under 100 percent of poverty	1.4	1.3
100 to 130 percent of poverty	0.8	0.9
More than 130 to under 200 percent of poverty	0.3	0.4
200 or more percent of poverty	0.1	0.2

Universe: Person months at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period).

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

B. Length of SNAP Participation Spells

Having examined patterns of SNAP entry and the triggers that lead to entry, we turn to the length of stay in the program. We address the following questions:

- How long are participation spells for recent entrants? What is the median time on SNAP after program entry? How does spell length vary among different SNAP subgroups?
- How long are participation spells for participants when viewed at a specific point in time (such as a cross-section of participants receiving benefits in the same month)?
- How do the answers to the above research questions compare to the findings in the studies for earlier periods? Specifically, were new SNAP spells longer in the 2008 panel than in previous Dynamics studies due to the weakened economy?
- To what extent can the lengths of SNAP participation spells be attributed to new sources of employment? How quickly after finding new employment do recent SNAP entrants leave the program? Is this different for SNAP participants who have been on the program longer? Do newly employed participants retain benefits, perhaps due to uncertainty in new employment?
- Did the benefit increase stemming from ARRA seem to play a role in increased spell lengths?

We examine the length of participation spells by using survival or "life table" analysis to estimate the rate at which individuals ended their participation spell in each month following program entry. Our analysis uses two different samples of participants—an entry cohort sample and a cross-sectional sample. The entry cohort sample includes all individuals who began a spell of SNAP participation during a given calendar period, in this case, within the SIPP panel period. This allows us to partially answer the first question above, concerning how long the new entrants will participate. The cross-sectional sample of SNAP participation includes all individuals receiving benefits at a given point in time, regardless of when their participation began, and allows us to answer the second and third questions.

1. Entry Cohort Analysis

a. Sample and Methods

The entry cohort analysis uses a sample from the 2008 panel in which each observation represents a single participation spell of an individual. We limit our sample to spells that began in month 3 (December 2008) or later, which eliminates spells on SNAP that were already in progress when the analysis period began (referred to as "left-censored" spells). We also allow sample members to contribute more than one spell to the analysis. In other words, we count both entries and re-entries in this analysis.

For each spell on SNAP, we are able to observe the length of the spell during the panel period, and we know whether the spell was still in progress at the end of the study period (that is, whether the spell was "right-censored"). We also identify characteristics of the individuals

during the month prior to the start of the spell for our subgroup analysis, similar to those used in the SNAP entry subgroup analysis.

The 2008 SIPP panel contains a total of 13,481 SNAP spells from 9,489 individuals. Most of these individuals (about 68 percent) contributed only one spell to the data set.[35] About 28 percent of spells are left-censored, including 13 percent that ended within the panel period and 15 percent that are both left- and right-censored (that is, the SNAP spell started before the analysis period and continued at least to the end of the period). Another 1 percent of spells are not left-censored, but began before month 3 or after month 54; including these spells would not give us the number of months we need to establish at least two months of nonparticipation before we record an entry or at least two months of participation before we record an exit. The remaining 70 percent of spells that form our entry cohort are not left-censored, including 43 percent that are neither left- nor right-censored and 27 percent that are right-censored.

To estimate spell length, we construct life tables. Life tables allow us to use information we have about the length of a spell, while ignoring information we do not have. For example, if an individual participated for the last 12 months of the sample, and thus has a right-censored spell, we use only the fact that the individual did not exit the program after any of his or her first 11 months on the program. We then ignore this person beyond month 12 of the life table. We note that because the samples on which the spell lengths are based decline as the duration increases, the estimates of the hazard rates generally become less precise as duration rises.

Similarly, an individual who participated for 25 months and dies while on the program has a right-censored spell, and we use only the fact that the individual did not exit the program after any of his or her first 24 months on the program.

In our life tables we consider participation spells by month. For each month, we show the weighted estimates of survivor rates, hazard rates, and cumulative exit rates. The survivor rate is the unconditional probability that a spell remains in progress more than a given number of months. That is, it measures the percentage of individuals that have not changed their participation status by a given month or time period. The hazard rate is the probability that a SNAP spell ends in a particular month, given that it has lasted at least until the beginning of that month. In other words, it is the rate at which individuals stop participating in a given month or time period, expressed as a percentage. Finally, the cumulative exit rate is the unconditional probability that a spell ends within a given number of months. That is, it tells us the cumulative percentage of the entry cohort sample that exited SNAP after one month, two months, three months, and so on. The survivor and cumulative exit rates total 100 percent.

For our analysis, we focus primarily on two summary measures from the life table: the cumulative exit probabilities and the median spell length. The cumulative exit probabilities measure the proportion of participants who exit SNAP within a given number of months; we

[35] This percentage is noticeably lower than the percentage of individuals that contributed only one spell to the 2004-2006 data set (79 percent). This is because the panel length is longer, allowing individuals who exit SNAP a greater period of time during which to re-enter.

focus on 4, 12, and 24 months. In the month that the cumulative exit probability reaches 50 percent, we have the ***median spell length***—half of all spells are shorter and half of all spells are longer. We provide these summary measures for all participants and key subgroups.

b. Lengths of SNAP Participation in the 2008 Panel and Comparisons Over Time

Table II.12 indicates that about half of SNAP participants who entered any time after month 3 of the panel (December 2008) exited within the next year, and most exited within two years. The median spell length for these participants was approximately 12 months, with 26 percent of spells ending within four months and 52 percent ending within a year. Within two years, 67 percent of SNAP participation spells ended, indicating that one third of SNAP entrants in the entry cohort sample remained on SNAP for at least two years. Twenty-six percent remained on SNAP for at least three years, and 21 percent participated for at least four years.

Table II.12 SNAP Participation Spell Length: Life Table Analysis of Spell Length for New Entrants, 2008 SIPP Panel

Month	Number of Spells at Beginning of Month	Number In-Sample in Following Month	Number Exiting During Following Month	Survivor Rate	Hazard Rate	Cumulative Exit Rate	Standard Error of Survivor Rate
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1 [a]	70,225,621	70,111,044	0	100.0	0.0	0.0	0.0
2	70,111,044	69,983,896	3,614,120	94.8	5.2	5.2	0.2
3	66,369,776	65,863,740	2,361,729	91.4	3.6	8.6	0.3
4	**63,502,011**	**59,516,442**	**11,348,940**	**74.0**	**19.1**	**26.0**	**0.5**
5	48,167,501	47,548,169	2,617,812	69.9	5.5	30.1	0.5
6	44,930,356	44,637,306	2,068,344	66.7	4.6	33.3	0.5
7	42,568,962	42,363,533	1,049,955	65.0	2.5	35.0	0.5
8	41,313,577	38,605,045	4,225,662	57.9	10.9	42.1	0.5
9	34,379,383	34,115,294	1,345,007	55.6	3.9	44.4	0.5
10	32,770,286	32,560,075	1,026,114	53.9	3.2	46.1	0.5
11	31,533,961	31,413,850	934,342	52.3	3.0	47.7	0.5
12	**30,479,508**	**28,670,003**	**2,247,205**	**48.2**	**7.8**	**51.8**	**0.5**
13	26,422,797	26,305,689	766,769	46.8	2.9	53.2	0.5
14	25,538,920	25,382,404	529,631	45.8	2.1	54.2	0.5
15	24,852,773	24,752,325	524,597	44.8	2.1	55.2	0.5
16	24,227,728	22,921,759	1,512,190	41.9	6.6	58.1	0.5
17	21,409,569	21,272,492	681,444	40.5	3.2	59.5	0.5
18	20,591,048	20,346,459	348,744	39.8	1.7	60.2	0.5
19	19,997,715	19,951,170	240,191	39.4	1.2	60.6	0.5
20	19,710,979	18,218,330	1,226,323	36.7	6.7	63.3	0.4
21	16,992,007	16,817,775	332,509	36.0	2.0	64.0	0.4
22	16,485,265	16,175,631	216,413	35.5	1.3	64.5	0.4
23	15,959,218	15,920,917	159,258	35.1	1.0	64.9	0.4
24	**15,761,659**	**14,405,178**	**885,544**	**33.0**	**6.1**	**67.0**	**0.4**
25	13,519,634	13,429,504	171,063	32.6	1.3	67.4	0.4

Table continues

Table II.12, *continued*

Month	Number of Spells at Beginning of Month	Number In-Sample in Following Month	Number Exiting During Following Month	Survivor Rate	Hazard Rate	Cumulative Exit Rate	Standard Error of Survivor Rate
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
26	13,258,441	13,134,839	302,379	31.8	2.3	68.2	0.4
27	12,832,460	12,709,603	50,959	31.7	0.4	68.3	0.4
28	12,658,643	11,600,114	481,883	30.4	4.2	69.6	0.4
29	11,118,231	10,959,580	338,294	29.4	3.1	70.6	0.4
30	10,621,287	10,478,666	225,966	28.8	2.2	71.2	0.4
31	10,252,699	10,163,210	15,910	28.8	0.2	71.2	0.4
32	10,147,300	9,128,669	354,824	27.6	3.9	72.4	0.3
33	8,773,844	8,654,159	160,572	27.1	1.9	72.9	0.3
34	8,493,587	8,386,438	24,819	27.0	0.3	73.0	0.3
35	8,361,619	8,277,167	52,821	26.9	0.6	73.1	0.3
36	**8,224,346**	**7,175,192**	**265,653**	**25.9**	**3.7**	**74.1**	**0.3**
37	6,909,538	6,762,004	130,968	25.4	1.9	74.6	0.3
38	6,631,037	6,564,582	26,640	25.3	0.4	74.7	0.3
39	6,537,942	6,441,830	8,041	25.2	0.1	74.8	0.3
40	6,433,789	5,422,091	142,276	24.6	2.6	75.4	0.3
41	5,279,815	5,114,420	70,663	24.2	1.4	75.8	0.3
42	5,043,757	4,843,627	90,024	23.8	1.9	76.2	0.3
43	4,753,602	4,672,559	41,184	23.6	0.9	76.4	0.2
44	4,631,375	3,540,665	85,258	23.0	2.4	77.0	0.2
45	3,455,407	3,334,786	94,024	22.4	2.8	77.6	0.2
46	3,240,763	3,198,576	6,706	22.3	0.2	77.7	0.2
47	3,191,869	3,110,114	64,967	21.8	2.1	78.2	0.2
48	**3,045,147**	**2,022,200**	**71,887**	**21.1**	**3.6**	**78.9**	**0.2**
49	1,950,313	1,788,432	42,212	20.6	2.4	79.4	0.1
50	1,746,220	1,642,139	59,440	19.8	3.6	80.2	0.1
51	1,582,699	1,473,678	0	19.8	0.0	80.2	0.1

Universe: Panel members with SNAP spells that begin in month 3 to 54 (members can contribute more than one spell, and spells begin during panel, i.e. no left-censored spells included).

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Notes: [a] We do not observe exits after one month because we fill one-month gaps in nonparticipation.

Column (a) represents the number of SNAP spells that have lasted at least the indicated number of months, regardless of when the spell first started. Column (b) indicates the number of the spells from (a) that we continue to observe in the following month (that is, spells that are not right censored). Column (c) is the number of spells from (b) that exit the SNAP in the following month. The hazard rate (e) is 100*(c)/(b). The cumulative exit rate (f) is sum of the previous row's cumulative exit rate and the product of the current row's hazard rate and previous row's survivor rate, divided by 100. The survivor rate is 100-(f). For example, Month 12 indicates that 30,479,508 spells have lasted at least 12 months or longer. We observe the 13th month for 28,670,003 spells. Of those that we observe, 2,247,205 end after the 12th month. Then the hazard rate is 100*2,247,205/28,670,003 (=7.8). The cumulative exit rate is 47.7+7.8*52.3/100 (=51.8).

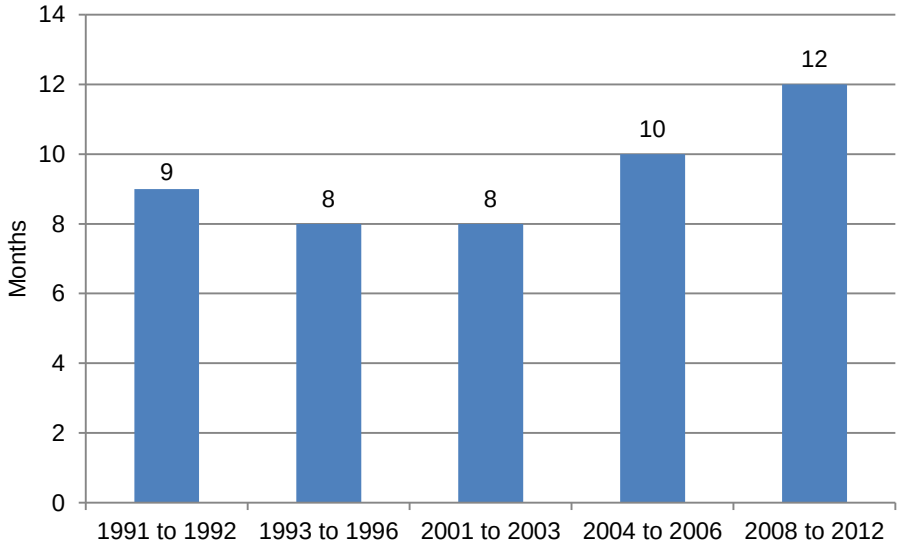
The change in the number of spells from the first row of the table to the last row reflects losses due to both SNAP exits and right censoring. In the higher rows of the table, with the shorter participation spells, more of the loss is due to exits, while in the lower rows of the table, with the longer participation spells, more of the loss is due to right censoring. For example, at six months, column (c) shows that 2.1 million spells end; subtracting column (b) from column (a) shows that 0.3 million spells are right censored and no longer included in the sample. On the other hand, at 24 months, 0.9 million spells end but 1.4 million spells are lost due to right censoring.

Spells of individuals who leave the universe (for example, due to a move to group quarters, exit from the country, or death) before an exit is observed are right-censored and are not incorporated into the exit rate.

Rows appearing in bold type are discussed in the narrative.

These results show a 20 percent increase in the median spell length over that identified in Mabli et al. (2011a) for the mid-2000s (Figure II.6). They found that the median spell length during the mid-2000s was 10 months, and that 58 percent of spells ended within one year. Cody et al. (2007) found that spell lengths were even shorter in the early 2000s; they estimated a median spell length of eight months and found that 61 percent of spells ended within one year. Similarly, Cody et al. (2005) measured spell length during the early to late 1990s and found that the median length was eight months, and that 64 percent of spells ended within a year. The 2008 to 2012 (and also the 2004 to 2006) spell lengths are longer than those in 1991 to 1992 in which the median length was nine months.

Figure II.6 Median Length of SNAP Participation in Entry Cohort Sample, Comparisons Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006; Cody et al. (2007) for 2001–2003; Cody et al. (2005) for 1993–1996; Gleason et al. (1998) for 1991–1992.

The rate at which SNAP participants exit the program decreases as length increases, as can be seen by examining the hazard rates in Table II.12. Analysis of these rates requires caution because seam bias causes them to jump at four-month intervals; however, the rate at these four-month intervals generally decreases over time. For example, the hazard rate falls from 19 percent in month 4 to 11 percent in month 8, 8 percent in month 12, and 7 percent in month 16.

c. Lengths of SNAP Participation, by Subgroup

In Table II.13, we present selected results from subgroup life tables. In particular, we focus on the median participation spell and cumulative exit rates for 4, 12, and 24 months.

There are sharp contrasts in the length of SNAP participation spells among participant subgroups. In particular, we find that median spell lengths in the entry cohort sample were shortest for elderly participants living with nonelderly individuals; nonelderly nondisabled childless adults; and individuals with income greater than 200 percent of poverty in the month prior to the spell start. The median spell length for each of these groups was eight months.

Median spell lengths in the entry cohort sample were longer for individuals with no income or low levels of income than for those with higher income. Those in families with no income had a median spell length of 16 months, the same median spell length as those in families with income under 50 percent of poverty, between 50 to 100 percent of poverty, and between 100 and 130 percent of poverty. Meanwhile, those with income between 130 and 200 percent of poverty had a median length of 10 months, and those with income over 200 percent of poverty had a median length of eight months.

Individuals in families with no high school graduates, nonelderly disabled adults, children in single-parent families, and elderly individuals living alone also had among the longest median spell lengths. We estimated median spell lengths of 17 months for individuals in families with no high school graduates; 19 months for nonelderly disabled adults; 20 months for children in families with only one adult; and greater than 51 months for elderly individuals living alone.[36]

The subgroup analysis also shows that, while children in general have higher than average median spell lengths (15 months), those living with multiple adults had shorter spell lengths than those living with one adult. Children living with a married family head had a median spell length of 12 months and those living with multiple unmarried adults had a median spell length of 16 months. In contrast, children living with one adult had a median spell length of 20 months. Similarly, adults living in families with multiple adults, whether married or not, had shorter spells than adults living in single-adult families with children.

The percentage of individuals on SNAP for at least two years also varied by subgroup. Among elderly entrants living alone, about 62 percent remained on SNAP after two years. At the other end of the spectrum, only 24 percent of individuals in households without any elderly or disabled members, 24 percent of individuals in families with income over 200 percent of poverty in the month prior to the spell start, and 27 percent of individuals in families with unemployment compensation in the month prior to the spell start remained on SNAP after two years.

For other subgroups, median participation spells did not deviate far from the overall median for all individuals. Median participation spells were higher for individuals living in high SNAP participation neighborhoods (14 months) than for individuals not living in high SNAP participation neighborhoods (11 months). However, they did not vary as much between high poverty and non-high poverty neighborhoods, or between low-income and non-low income neighborhoods. Additionally, spell lengths did not vary as much by mortgage foreclosure status,

[36] Spell lengths over 51 months are capped or right-censored because that is the maximum length that can be recorded within our analysis period.

geographic access to food, or by State SNAP policy indicators, such as vehicle and categorical eligibility rules, average certification periods, and total federal and State outlay amounts.

Table II.13 SNAP Participation Spell Length for New Entrants by Subgroup, 2008 SIPP Panel

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
All Individuals	9,482	12	26.0	51.8	67.0	
Family Composition						163.7***
Individuals in families with children	6,463	12	23.8	50.5	66.4	
Adults in families with children and one adult	500	17	15.5	43.9	56.9	
Children in families with children and one adult	876	20	14.6	41.1	54.9	
Adults in families with children and multiple adults	804	9	32.7	59.4	77.9	
Children in families with children and multiple adults	572	16	24.5	45.9	63.5	
Adults in families with children and a married head	1,898	11	27.6	54.5	69.9	
Children in families with children and a married head	1,783	12	23.5	51.3	67.9	
Children in child-only families	30	15	2.5	45.7	81.7	
Individuals in families without children	3,019	11	31.1	54.8	68.4	
Individuals in families with elderly members	1,330	10	34.6	55.7	67.4	
Elderly members living alone	276	>51	14.8	25.9	37.8	
Elderly members living with other elderly individuals	215	20	19.9	41.3	59.7	
Elderly members living with nonelderly individuals	804	8	42.0	67.0	78.8	
Individuals in families with disabled members	654	16	26.2	43.7	56.6	
Individuals in families without any elderly or disabled members	1,035	9	30.6	60.1	75.8	
Age and Disability						122.3***
Nonelderly disabled adults	942	19	19.7	41.1	55.2	
Nonelderly nondisabled childless adults	1,318	8	35.9	63.9	79.0	
Age						37.0***
Children (under age 18)	3,261	15	20.8	47.3	63.4	
Nonelderly adults (age 18 - 59)	5,055	11	28.0	54.5	69.7	
Elderly adults (age 60 and over)	1,166	12	34.3	52.6	63.6	

Table continues

Table II.13, *continued*

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Sex						28.3***
Male (age 18 and over)	2,587	9	32.8	58.9	73.9	
Female (age 18 and over)	3,634	12	25.7	50.7	65.3	
Race/Ethnicity [a]						24.1***
White, Non-Hispanic	4,319	12	24.6	53.2	67.7	
African American, Non-Hispanic	1,977	13	25.8	49.1	63.5	
Hispanic, all races	2,465	12	26.4	51.4	68.2	
Asian, Non-Hispanic	224	13	28.1	47.8	70.9	
Other, Non-Hispanic	497	8	36.5	57.2	68.6	
Education						65.7***
Individuals in families with high school graduates	8,021	12	27.3	53.6	68.1	
Individuals in families with no high school graduates	1,461	17	18.8	41.9	60.8	
Citizenship						
Citizen	8,691	12	25.8	51.9	66.7	
Noncitizen	791	12	27.9	51.5	70.7	
Citizen children living with noncitizen adults in the family	720	14	20.0	47.1	67.3	4.2**
Adults in families with citizen adults and citizen children	2,812	11	26.9	54.8	69.7	58.5***
Children in families with citizen adults and citizen children	2,760	15	21.1	47.4	62.6	
Adults in families with noncitizen adults and citizen children	329	14	27.0	49.7	67.4	
Children in families with noncitizen adults and citizen children	438	16	21.5	48.0	66.3	

Table continues

Table II.13, *continued*

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Individuals by Family Poverty Status						259.2***
Under 50 percent of poverty	1,112	16	19.6	46.4	61.0	
50 to under 100 percent of poverty	2,233	16	20.2	45.3	60.5	
100 to 130 percent of poverty	1,418	16	23.4	47.0	63.4	
More than 130 to under 200 percent of poverty	2,027	10	30.0	56.0	73.5	
200 or more percent of poverty	2,095	8	35.1	63.5	75.7	
Presence of Income						
Individuals in families with no income	602	16	21.6	44.9	61.1	12.1***
Individuals in families with income	8,880	12	26.3	52.3	67.5	
Presence of Earnings						92.2***
Individuals in families with earnings	6,436	11	28.1	55.0	69.9	
Individuals in families without earnings	3,046	16	21.2	44.7	60.7	
Presence of TANF						4.2**
Individuals in families with TANF	412	9	29.8	53.3	67.8	
Individuals in families without TANF	9,070	12	25.8	51.7	67.0	
Other Income						
Individuals in families with Social Security income	2,780	12	30.9	53.6	66.8	35.7***
Individuals in families without Social Security income	6,702	12	24.3	51.2	67.0	
Individuals in families with SSI	1,585	13	28.7	49.2	63.7	
Individuals in families without SSI	7,897	12	25.5	52.3	67.7	
Individuals in families with unemployment compensation	840	9	30.7	57.4	73.4	
Individuals in families with no unemployment compensation	8,642	12	25.5	51.2	66.3	

Table continues

Table II.13, *continued*

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Mortgage Foreclosure Status (during study period)						10.7***
Individuals in housing units affected by foreclosure event	611	12	26.3	54.3	71.7	
Individuals not in housing units affected by foreclosure event	8,871	12	26.0	51.6	66.6	
Characteristics of Individual's Neighborhood [b]						
Individuals living in high poverty neighborhood [c]	4,567	13	26.1	48.9	64.5	24.9***
Individuals not living in high poverty neighborhood [c]	4,571	11	25.9	54.5	69.1	
Individuals living in low-income neighborhood [d]	4,668	13	26.3	49.4	65.4	23.0***
Individuals not living in low-income neighborhood [d]	4,470	12	25.7	54.0	68.3	
Individuals living in high SNAP participation neighborhood	4,577	14	25.0	47.5	62.5	49.0***
Individuals not living in high SNAP participation neighborhood	4,905	11	26.9	55.6	71.0	
Geographic Access to Food [e]						
Individuals in low food access census tracts	3,587	12	24.9	53.1	68.7	13.7***
Individuals not in low food access census tracts	5,554	12	26.6	50.9	65.7	
Individuals in low-income census tracts with low food access	2,031	12	26.6	52.6	67.7	7.2***
Individuals not in low-income/low-food access tracts	7,110	12	25.8	51.5	66.6	
SNAP Policy Variables						
Vehicle/Categorical Eligibility Rules						18.5***
Individuals in States:						
Offering broad-based categorical eligibility	6,556	12	25.1	50.6	66.2	
Excluding all or most vehicles	2,507	11	28.6	55.1	68.7	
Excluding one or fewer vehicles for SNAP unit [f]	412	11	25.5	53.1	69.6	

Table continues

Table II.13, *continued*

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
SNAP Policy Variables, *continued*						
Average Certification Period						7.1**
Individuals in States with average certification periods:						
Under 10 months	2,502	12	25.8	52.4	67.9	
Between 10 and 12.9 months	3,869	12	27.3	52.9	67.8	
At least 13 months	3,111	12	24.6	50.0	65.4	
Total Federal and State Outlays for SNAP Outreach						6.7**
Individuals in States with:						
Fiscal year federal outlays of $0	1,921	12	27.1	52.8	69.7	
Fiscal year federal outlays between $1 and $500,000	2,214	12	27.4	53.9	67.0	
Fiscal year outlays greater than $500,000	5,347	12	25.1	50.6	66.0	

Universe: Panel members with SNAP spells that begin in month 3 to 54 (members can contribute more than one spell, and spells begin during panel, i.e. no left-censored spells included).

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA "Characteristics of SNAP Households" reports, FY 2009-2012.

Notes: Subgroups: Characteristics assigned in month before SNAP spell began.

The log-rank test compares the estimated monthly hazard rate to the expected monthly hazard rate where the expected rate is calculated based on the null hypothesis that the hazard rate is the same for each time period of the subgroup category. We do not reject the null hypothesis that the distributions are the same across categories if the aggregate difference between the estimated and expected hazard rate is small relative to the aggregate variance of the difference. We reject the null hypothesis if the difference is large. Probabilities (Chi-square test): ** represents p≤ 0.05; *** represents p≤ 0.01.

[a] Categories are race *alone*; respondents who reported multiple races are in the Other, Non-Hispanic category.

[b] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[c] "High poverty" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[d] "Low-income" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[e] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[f] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets.

2. Cross-Sectional Analysis

While a cohort analysis provides a wealth of information about those just entering SNAP, it does not inform us about those already participating, so we turn to our cross-sectional sample, which consists of all individuals participating in SNAP in a given month. For this group, we assess (1) how many additional months they will spend in the program; and (2) what the total length of their spell will be. For the first question, we estimate *subsequent* spell lengths, and for the second, we estimate *completed spell lengths.*

a. Sample and Methods

Our cross-sectional sample includes all individuals receiving SNAP benefits in December 2008. It is the month in the second wave of data that all respondents have in common.[37] We then use characteristics of individuals in December 2008 to assign them to subgroups, similar to those we use in the entry and entry cohort duration analyses. The cross-sectional sample consists of SNAP spells. About 52 percent ended within the study period, with the remainder being still active at the end of the study period, or right-censored.

As with the entry cohort analysis, we use life tables to address the relevant questions. For the life table of subsequent spell lengths, December 2008 is treated as month 1 for all cross-sectional sample members. For the life table of completed spell lengths, the first month of the spell is treated as month 1.

b. Subsequent Spell Lengths in the 2008 Panel and Comparisons Over Time

For subsequent spell lengths of our cross-sectional sample, average spells were much longer than in our new entry cohort, even though we only consider the spell duration from December 2008 forward. The median subsequent spell length for the cross-sectional sample was 48 months (Table II.14),[38] compared with a median spell length of only 12 months for individuals in the entry cohort sample. As we have also found in prior studies, spell lengths are much longer in the cross-sectional sample when compared with the entry cohort sample. This is because, in the cross-sectional sample, we miss many short spells that occur within the same panel period—they are likely to end before or to begin after our sample month. Longer spells, however, are more likely to include our sample month. For this reason, the longer spells are more heavily represented in the cross-sectional sample than in the entry cohort sample.

[37] December 2008 is the fifth panel month for those in rotation group 4, the sixth panel month for those in rotation group 3, the seventh panel month for those in rotation group 2, and the eighth panel month for those in rotation group 1.

[38] The cumulative exit rate in month 47 rounds to 50.0 but, unrounded, it is slightly less. Therefore, the median spell length is 48 months.

Table II.14 SNAP Participation Spell Length: Life Table Analysis of Subsequent Spell Length for Cross-Sectional Sample, 2008 SIPP Panel

Month	Number of Spells at Beginning of Month	Number In-Sample in Following Month	Number Exiting During Following Month	Survivor Rate	Hazard Rate	Cumulative Exit Rate	Standard Error of Survivor Rate
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	27,684,803	27,684,803	1,126,474	95.9	4.1	4.1	0.3
2	26,558,329	26,504,728	735,565	93.3	2.8	6.7	0.4
3	25,769,163	25,559,857	1,008,731	89.6	3.9	10.4	0.5
4	24,551,126	24,530,671	567,225	87.5	2.3	12.5	0.5
5	23,963,445	23,935,699	563,539	85.5	2.4	14.5	0.6
6	23,372,160	23,351,699	600,996	83.3	2.6	16.7	0.6
7	22,750,703	22,702,087	491,729	81.5	2.2	18.5	0.6
8	22,210,358	22,206,265	474,877	79.7	2.1	20.3	0.6
9	21,731,388	21,724,953	242,987	78.8	1.1	21.2	0.6
10	21,481,966	21,420,663	306,233	77.7	1.4	22.3	0.7
11	21,114,430	21,102,212	297,274	76.6	1.4	23.4	0.7
12	20,804,938	20,784,128	289,632	75.5	1.4	24.5	0.7
13	20,494,496	20,481,237	285,218	74.5	1.4	25.5	0.7
14	20,196,019	20,155,664	395,540	73.0	2.0	27.0	0.7
15	19,760,124	19,754,304	320,967	71.8	1.6	28.2	0.7
16	19,433,336	19,411,241	125,911	71.4	0.6	28.6	0.7
17	19,285,330	19,275,118	306,097	70.2	1.6	29.8	0.7
18	18,969,020	18,969,020	310,665	69.1	1.6	30.9	0.7
19	18,658,355	18,642,940	272,304	68.1	1.5	31.9	0.7
20	18,370,637	18,355,543	271,032	67.1	1.5	32.9	0.7
21	18,084,511	18,071,835	190,558	66.4	1.1	33.6	0.7
22	17,881,277	17,863,256	283,884	65.3	1.6	34.7	0.8
23	17,579,372	17,566,617	184,331	64.6	1.0	35.4	0.8
24	17,382,286	17,365,258	160,662	64.0	0.9	36.0	0.8
25	17,204,596	17,197,184	274,755	63.0	1.6	37.0	0.8
26	16,922,429	16,922,429	212,553	62.2	1.3	37.8	0.8
27	16,709,876	16,706,304	114,490	61.8	0.7	38.2	0.8
28	16,591,815	16,580,456	158,024	61.2	1.0	38.8	0.8
29	16,422,433	16,418,262	279,390	60.2	1.7	39.8	0.8
30	16,138,872	16,113,385	164,795	59.5	1.0	40.5	0.8
31	15,948,591	15,948,591	51,725	59.3	0.3	40.7	0.8
32	15,896,866	15,880,693	128,804	58.9	0.8	41.1	0.8
33	15,751,889	15,717,241	175,308	58.2	1.1	41.8	0.8
34	15,541,933	15,529,508	181,436	57.5	1.2	42.5	0.8
35	15,348,073	15,323,555	267,709	56.5	1.7	43.5	0.8
36	15,055,846	15,050,865	93,193	56.2	0.6	43.8	0.8
37	14,957,672	14,943,217	145,954	55.6	1.0	44.4	0.8
38	14,797,263	14,789,476	82,949	55.3	0.6	44.7	0.8
39	14,706,527	14,702,566	92,292	55.0	0.6	45.0	0.8
40	14,610,274	14,597,714	135,516	54.5	0.9	45.5	0.8

Table continues

Table II.14, *continued*

Month	Number of Spells at Beginning of Month	Number In-Sample in Following Month	Number Exiting During Following Month	Survivor Rate	Hazard Rate	Cumulative Exit Rate	Standard Error of Survivor Rate
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
41	14,462,197	14,445,409	137,460	53.9	1.0	46.1	0.8
42	14,307,949	14,307,949	81,248	53.6	0.6	46.4	0.8
43	14,226,702	14,226,702	246,543	52.7	1.7	47.3	0.8
44	13,980,159	13,972,701	286,844	51.6	2.1	48.4	0.8
45	13,685,856	13,685,856	199,154	50.9	1.5	49.1	0.8
46	13,486,702	13,482,398	140,600	50.3	1.0	49.7	0.8
47	13,341,799	13,336,913	83,868	50.0	0.6	50.0	0.8
48	**13,253,045**	**13,249,649**	**148,908**	**49.5**	**1.1**	**50.5**	**0.8**
49	13,100,741	9,639,109	60,646	49.1	0.6	50.9	0.8
50	9,578,463	6,352,612	78,827	48.5	1.2	51.5	0.7
51	6,273,785	3,248,412	2,461	48.5	0.1	51.5	0.0

Universe: All SNAP participants in December 2008 (common month of second wave). December 2008 is treated as life table month 1, providing up to 51 observation months.

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Notes: Column (a) represents the number of SNAP spells that have lasted at least the indicated number of months, regardless of when the spell first started. Column (b) indicates the number of the spells from (a) that we continue to observe in the following month (that is, spells that are not right censored). Column (c) is the number of spells from (b) that exit the SNAP in the following month. The hazard rate (e) is 100*(c)/(b). The cumulative exit rate (f) is sum of the previous row's cumulative exit rate and the product of the current row's hazard rate and previous row's survivor rate, divided by 100.

The change in the number of spells from the first row of the table to the last row reflects losses due to both SNAP exits and right censoring. In the top rows of the table, with the shorter participation spells, more of the loss is due to exits, while in the bottom rows of the table, with the longer participation spells, more of the loss is due to right censoring. For example, at six months, column (c) shows that 0.6 million spells end; subtracting column (b) from column (a) shows that just over 20,000 spells are right censored and no longer included in the sample. On the other hand, at 51 months, 2,000 spells end but 3.0 million spells are lost due to right censoring. Spells of individuals who leave the universe (for example, due to a move to group quarters, exit from the country, or death) before an exit is observed are right-censored and are not incorporated into the exit rate.

The cumulative exit rate in month 47 was 49.98 months, which rounds to 50.0; because this is slightly less than 50, the median spell length is 48 months.

Rows appearing in bold type are discussed in the narrative.

We also found that subsequent spell lengths in the cross-sectional sample were longer in the 2008 panel than in the 2004 panel (Table II.15). About 25 percent exited within one year and 36 percent exited within two years in the 2008 panel, versus 31 percent after one year and 47 percent after two years in the 2004 panel. This is to be expected, considering that spell lengths were also longer in the entry cohort sample in the 2008 panel than in the 2004 panel.[39]

Table II.15 Comparison of Cumulative Exit Rates in the 2004 and 2008 SIPP Panel Cross-Sectional Samples

	2004–2006	2008–2012
Cumulative Exit Rate		
After 6 months	19.4	16.7
After 12 months	30.8	24.5
After 18 months	39.8	30.9
After 24 months	46.7	36.0

Sources: Table II.14 from this report; Table II.13 from Mabli et al. (2011a).

c. Subsequent Spell Lengths, by Subgroup

Patterns of subsequent spell lengths among subgroups of the cross-sectional sample (Table II.16) are similar to those for the entry cohort (see Table II.13). In particular, among subgroups that had longer than median spell lengths in the entry cohort, many in the cross-sectional sample had spell lengths that were right-censored at 51 months, the maximum possible length of time that could be measured during the study period. For example, individuals living in poverty, children in single-parent families, elderly people living alone, nonelderly disabled adults, and individuals in families with no high school graduates all had a median spell length that went on longer than the study period (that is, was right-censored in the cross-sectional sample).

Subgroups that had a shorter than average median subsequent spell length include some of the same subgroups described in the entry cohort sample as having a shorter than average cross-sectional median spell length, including individuals with family income over 200 percent of poverty in the month prior to the subsequent spell (17 months), and nonelderly nondisabled childless adults (18 months). In addition, individuals in families with earnings in the month prior to the start of the spell had a shorter than average median subsequent spell length (29 months), and subsequent SNAP spells were shorter for noncitizens (a median of 35 months) than for citizens (a median of 50 months).

Elderly individuals living with no other family members or with only other elderly family members have longer median subsequent participation spells than all other subgroups we examine. Only 8 percent of elderly individuals living with no other family members ended their

[39] In the 2004 panel, the median subsequent spell length was right-censored at 27 months. That is, after 27 months, when the study period ended, the cumulative exit rate had not yet reached 50 percent. Therefore, we are not able to directly compare the median subsequent spell length in the 2004 panel with that in the 2008 panel.

participation spell within two years of December 2008. In contrast, over half (55 percent) of individuals in families without any children or elderly or disabled members exited within 24 months or less; about 21 percent exited within four months. Thus, there are a higher proportion of individuals in families without children, elderly, or disabled members exiting within four months than there are elderly individuals living with no other family members or with only other elderly family members exiting within 24 months of December 2008.

Table II.16 Subsequent SNAP Participation Spell Length for Cross-Sectional Sample by Subgroup, 2008 SIPP Panel

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
All Individuals	3,984	48	12.5	24.5	36.0	
Family Composition						164.0***
Individuals in families with children	2,895	44	12.7	25.6	37.5	
Adults in families with children and one adult	390	>51	8.5	16.8	26.9	
Children in families with children and one adult	771	>51	8.4	17.3	27.2	
Adults in families with children and multiple adults	280	34	16.6	31.3	46.0	
Children in families with children and multiple adults	274	36	15.1	25.2	41.0	
Adults in families with children and a married head	581	35	15.4	32.3	44.8	
Children in families with children and a married head	590	29	16.3	35.3	47.0	
Children in child-only families [a]	—	—	—	—	—	
Individuals in families without children	1,089	>51	11.7	21.0	31.2	
Individuals in families with elderly members	550	>51	10.0	17.3	23.3	
Elderly members living alone	227	>51	1.5	4.8	8.2	
Elderly members living with other elderly individuals	105	>51	14.1	24.3	29.2	
Elderly members living with nonelderly individuals	210	>51	15.8	25.1	34.5	
Individuals in families with disabled members	356	>51	7.9	15.7	25.5	
Individuals in families without any elderly or disabled members	183	20	21.0	36.3	55.3	
Age and Disability						87.1***
Nonelderly disabled adults	619	>51	8.6	14.7	23.4	
Nonelderly nondisabled childless adults	208	18	24.1	41.9	56.9	
Age						71.9***
Children (under age 18)	1,644	44	12.2	24.6	36.3	
Nonelderly adults (age 18 - 59)	1,805	45	13.7	26.3	39.1	
Elderly adults (age 60 and over)	535	>51	7.8	14.6	18.7	

Table continues

Table II.16, *continued*

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Sex						22.3***
Male (age 18 and over)	787	35	16.4	30.7	43.6	
Female (age 18 and over)	1,553	>51	10.7	20.9	31.5	
Race/Ethnicity [b]						
White, Non-Hispanic	1,665	45	12.4	24.9	35.3	
African American, Non-Hispanic	1,087	50	12.9	22.4	34.3	
Hispanic, all races	932	48	11.5	26.0	39.0	
Asian, Non-Hispanic	88	>51	7.6	18.3	28.5	
Other, Non-Hispanic	212	38	17.8	28.2	39.6	
Education						50.1***
Individuals in families with high school graduates	3,002	44	14.1	26.6	37.8	
Individuals in families with no high school graduates	982	>51	7.1	17.3	29.8	
Citizenship						
Citizen	3,688	50	12.4	24.5	35.5	7.8***
Noncitizen	296	35	13.2	24.7	42.5	
Citizen children living with noncitizen adults in the family	247	29	16.5	32.6	47.6	
Adults in families with citizen adults and citizen children	1,099	48	13.9	27.7	38.9	
Children in families with citizen adults and citizen children	1,443	45	12.3	24.6	35.2	
Adults in families with noncitizen adults and citizen children	109	37	9.4	19.1	37.1	
Children in families with noncitizen adults and citizen children	161	32	11.6	26.0	43.3	
Individuals by Family Poverty Status						166.7***
Under 50 percent of poverty	778	>51	6.7	15.0	27.8	
50 to under 100 percent of poverty	1,370	>51	11.9	20.7	31.2	
100 to 130 percent of poverty	586	50	11.5	26.4	36.6	
More than 130 to under 200 percent of poverty	569	29	18.5	35.1	45.3	
200 or more percent of poverty	394	17	21.3	42.5	57.1	

Table continues

Table II.16, *continued*

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Presence of Income						
Individuals in families with no income	287	>51	9.5	20.2	33.4	44.6***
Individuals in families with income	3,697	46	12.7	24.8	36.2	
Presence of Earnings						166.1***
Individuals in families with earnings	2,090	29	16.2	32.1	46.3	
Individuals in families without earnings	1,894	>51	8.1	15.5	23.9	
Presence of TANF						
Individuals in families with TANF	444	>51	6.6	15.3	24.8	
Individuals in families without TANF	3,540	46	13.3	25.8	37.6	
Other Income						
Individuals in families with Social Security income	1,179	>51	11.8	20.5	28.0	
Individuals in families without Social Security income	2,805	43	12.7	25.9	38.9	
Individuals in families with SSI	987	>51	11.8	20.2	28.4	
Individuals in families without SSI	2,997	44	12.7	25.7	38.2	
Individuals in families with unemployment compensation	202	33	19.9	38.4	46.1	41.3***
Individuals in families with no unemployment compensation	3,782	48	12.0	23.6	35.4	
Mortgage Foreclosure Status (during study period)						21.3***
Individuals in housing units affected by foreclosure event	181	29	17.3	32.8	47.9	
Individuals not in housing units affected by foreclosure event	3,803	48	12.2	24.1	35.4	
Characteristics of Individual's Neighborhood [c]						
Individuals living in high poverty neighborhood [d]	2,215	>51	11.4	22.0	33.2	10.7***
Individuals not living in high poverty neighborhood [d]	1,547	44	13.8	27.8	38.6	
Individuals living in low-income neighborhood [e]	2,217	50	11.7	22.6	34.7	7.9***
Individuals not living in low-income neighborhood [e]	1,545	46	13.5	27.0	36.5	

Table continues

Table II.16, *continued*

Subgroup	Sample Size	Median Participation Spell (Months)	Cumulative Exit Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Characteristics of Individual's Neighborhood, *continued*						
Individuals living in high SNAP participation neighborhood	2,288	>51	11.1	20.9	32.4	53.6***
Individuals not living in high SNAP participation neighborhood	1,696	35	14.1	29.0	40.5	
Geographic Access to Food [f]						
Individuals in low food access census tracts	1,453	39	13.7	27.1	40.2	32.2***
Individuals not in low food access census tracts	2,309	>51	11.7	22.9	32.7	
Individuals in low-income census tracts with low food access	924	44	12.6	24.5	37.3	5.6**
Individuals not in low-income/low-food access tracts	2,838	>51	12.4	24.5	35.0	
SNAP Policy Variables						
Vehicle/Categorical Eligibility Rules						13.0***
Individuals in States:						
Offering broad-based categorical eligibility	1,893	>51	12.4	22.9	33.7	
Excluding all or most vehicles	1,833	42	13.0	26.5	38.8	
Excluding one or fewer vehicles for SNAP unit [g]	258	>51	10.0	22.7	34.4	
Average Certification Period						11.2***
Individuals in States with average certification periods:						
Under 10 months	1,124	>51	7.9	19.6	32.6	
Between 10 and 12.9 months	1,824	43	14.1	26.6	38.9	
At least 13 months	1,036	>51	14.4	25.8	34.6	
Total Federal and State Outlays for SNAP Outreach						7.8**
Individuals in States with:						
Fiscal year federal outlays of $0	1,228	41	13.4	27.7	41.5	
Fiscal year federal outlays between $1 and $500,000	773	40	13.0	26.3	38.6	
Fiscal year outlays greater than $500,000	1,983	>51	11.8	22.1	32.1	

Universe: All SNAP participants in December 2008 (common month of second wave). December 2008 is treated as life table month 1, providing up to 51 observation months.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA "Characteristics of SNAP Households" reports, FY 2009-2012.

Notes: Subgroups: Characteristics assigned in month before SNAP spell began.

The log-rank test compares the estimated monthly hazard rate to the expected monthly hazard rate where the expected rate is calculated based on the null hypothesis that the hazard rate is the same for each time period of the subgroup category. We do not reject the null hypothesis that the distributions are the same across categories if the aggregate difference between the estimated and expected hazard rate is small relative to the aggregate variance of the difference. We reject the null hypothesis if the difference is large. Probabilities: ** represents p≤ 0.05; *** represents p≤ 0.01, Chi-square test.

[a] Data suppressed for this subgroup because sample size is less than 10.

[b] Categories are race *alone*; respondents who reported multiple races are in the Other, Non-Hispanic category.

[c] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[d] "High poverty" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[e] "Low-income" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[f] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[g] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets.

d. Completed Spell Lengths in the 2008 Panel and Comparisons Over Time

We also measured the completed lengths of participation spells (by looking back prior to December 2008 for the start of the spell, and forward to the end of the spell or the end of the study period for the subsequent receipt) for the cross-sectional sample of participants. Completed spell lengths in the cross-sectional sample tended to be quite long. Only 6 percent of participants in December 2008 had a completed spell length of six months or less, 14 percent had spells that lasted for one year or less, and 23 percent had spells that lasted two years or less (Table II.17). About half of the cross section of SNAP participants exited the program within eight years (50 percent). The first 25 percent to exit do so within three years; however, an additional five years pass before another 25 percent have exited. The completed spell lengths in the cross-sectional sample are slightly longer in the 2008 SIPP panel than in the 2004 panel (seven years).

Table II.17 SNAP Participation Spell Length: Life Table Analysis of Completed Spell Length for Cross-Sectional Sample, 2008 SIPP Panel

Years	Number of Spells at Beginning of Month	Number In-Sample in Following Month	Number Exiting During Following Month	Survivor Rate	Hazard Rate	Cumulative Exit Rate
	(a)	(b)	(c)	(d)	(e)	(f)
0.5	**27,460,022**	**27,299,461**	**1,759,055**	**93.6**	**6.4**	**6.4**
1.0	**25,540,406**	**25,402,301**	**1,982,002**	**86.3**	**7.8**	**13.7**
1.5	23,420,298	23,335,203	1,386,133	81.1	5.9	18.9
2.0	**21,949,069**	**21,894,701**	**1,097,360**	**77.1**	**5.0**	**22.9**
3.0	20,797,341	20,701,151	1,674,292	70.8	8.1	29.2
4.0	19,026,859	18,922,156	1,533,752	65.1	8.1	34.9
5.0	17,388,403	13,432,412	1,001,186	60.2	7.5	39.8
6.0	12,431,226	10,198,220	718,803	56.0	7.0	44.0
7.0	9,479,418	8,089,468	606,589	51.8	7.5	48.2
8.0	**7,482,879**	**6,743,503**	**291,869**	**49.6**	**4.3**	**50.4**

Universe: All SNAP participants in spells underway in December 2008 (common month of second wave). Spell start month can precede panel month 1; spells can be completed in panel months 1-53.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel.

Notes: Column (a) represents the number of SNAP spells that have lasted at least the indicated number of months, regardless of when the spell first started. Column (b) indicates the number of the spells from (a) that we continue to observe in the following month (that is, spells that are not right censored). Column (c) is the number of spells from (b) that exit the SNAP in the following month. The hazard rate (e) is 100*(c)/(b). The cumulative exit rate (f) is sum of the previous row's cumulative exit rate and the product of the current row's hazard rate and previous row's survivor rate, divided by 100.

The change in the number of spells from the first row of the table to the last row reflects losses due to both SNAP exits and right censoring. In the top rows of the table, with the shorter participation spells, more of the loss is due to exits, while in the bottom rows of the table, with the longer participation spells, more of the loss is due to right censoring. For example, at 1 year, column (c) shows that 2.0 million spells end; subtracting column (b) from column (a) shows that 0.1 million spells are right censored and no longer included in

the sample. On the other hand, at 7 years, 0.6 million spells end but 1.4 million spells are lost due to right censoring. Spells of individuals who leave the universe (for example, due to a move to group quarters, exit from the country, or death) before an exit is observed are right-censored and are not incorporated into the exit rate.

Rows appearing in bold type are discussed in the narrative.

The estimates of the median completed spell lengths of 8 years in the 2008 SIPP panel and 7 years in the 2004 SIPP panel cross-sectional sample are longer than the medians found for the mid-1990s and early 2000s (Cody et al., 2005; Cody et al., 2007), which were 4.5 years and 4 years, respectively (Table II.18).[40] However, the medians in the recent panels are closer to the Gleason et al. (1998) findings for the early 1990s of 8 years. Figure II.7 shows the cumulative exit rates for each of the timeframes—the cross-sectional sample from 2008 closely resembles the 1991 sample for shorter spells, and both the 1991 and 2004 samples for the longer spells.

Table II.18 Historic Comparison of Spell Lengths and Exit Rates for Completed Spells for Cross-Sectional Samples, 1991 through 2008 SIPP Panels

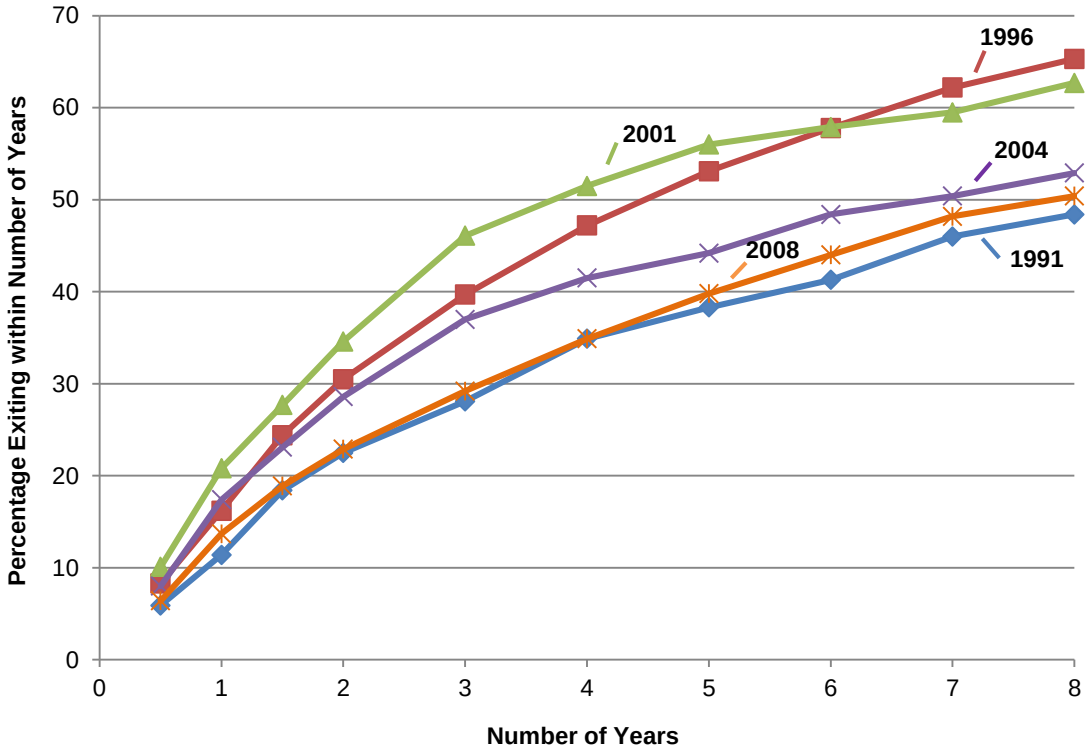
	1991–1993	1993–1996	1996–1999	2001–2003	2004–2006	2008–2012
Median Spell Length (Months)	>96	54	54	48	84	96
Cumulative Exit Rate						
6 Months or less	5.9	NA	8.3	10.1	8.0	6.4
12 Months or less	11.4	NA	16.2	20.8	17.4	13.7
24 Months or less	18.4	NA	30.5	27.7	28.6	22.9

Universe: All SNAP participants in spells underway in common month of second wave. Spell start month can precede panel month 1.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008-2012; Mabli et al. (2011a) for 2004–2006; Cody et al. (2007) for 2001–2003; Cody et al. (2005) for 1993–1999, Gleason et al. (1998) for 1991–1993.

[40] The recipiency history topical module survey instrument underwent several modifications between 2001 and 2004, including changes in question wording and ordering. Though this may have had an effect on comparisons over time, the direction of the effect is unclear. These changes are discussed in Appendix A.

Figure II.7 Cumulative Exit Rates for Cross-Sectional Sample, Comparison Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008-2012; Mabli et al. (2011a) for 2004; Cody et al. (2007) for 2001; Cody et al. (2005) for 1996; Gleason et al. (1998) for 1991.

Note: The labels next to each line indicate the SIPP panel years of the data.

e. Completed Spell Lengths, by Subgroup

Not surprisingly, individuals in families without any children, elderly, or disabled members had among the shortest completed spell lengths (Table II.19). Many of these individuals are subject to work requirements, and some were subject to time limits, although States had the option to waive time limits for all participants after the ARRA SNAP provisions took effect in April 2009. About 14 percent exited within six months and over one-quarter (26 percent) exited within one year. Similarly, 29 percent of individuals with income at or above 200 percent of poverty and 31 percent of individuals in families with unemployment compensation exited within one year. In contrast, only 17 percent of elderly individuals with no other persons in their family exited within eight years.

Completed spell lengths tended to be shorter for individuals in housing units affected by mortgage foreclosures during the study period. Nearly half (48 percent) of units affected by foreclosure events exited SNAP within three years (though only an additional one percent exit within five years), while just over a quarter of unaffected units (28 percent) exited SNAP within that time and 39 percent exited within five years.

The length of completed spells also varied by neighborhood characteristics. Individuals living in high poverty neighborhoods had a three-year cumulative exit rate of 25 percent, while those living in a relatively low poverty neighborhoods had a three-year cumulative exit rate of 33 percent. The findings were similar for low-income neighborhoods versus relatively higher income neighborhoods and for high SNAP participation neighborhoods versus lower SNAP participation neighborhoods. These findings indicate that individuals in struggling neighborhoods tend to stay on SNAP longer than other participants.

Table II.19 Completed Length of SNAP Spells for the Cross-Sectional Sample by Subgroup, 2008 SIPP Panel

Subgroup	Sample Size	Cumulative Exit Rates: 0.5 Yrs. or Less	1 Yr. or Less	1.5 Yrs. or Less	2 Yrs. or Less	3 Yrs. or Less	4 Yrs. or Less	5 Yrs. or Less	6 Yrs. or Less	7 Yrs. or Less	8 Yrs. or Less
All Individuals	3,959	6.4	13.7	18.9	22.9	29.2	34.9	39.8	44.0	48.2	50.4
Family Composition											
Individuals in families with children	2,870	6.3	13.9	19.3	23.5	30.4	36.0	41.3	45.8	50.7	53.1
Adults in families with children and one adult	390	3.4	8.7	12.5	16.0	21.5	26.9	31.4	33.9	38.2	39.4
Children in families with children and one adult	760	2.6	6.2	9.4	12.7	19.1	25.4	31.7	37.5	43.5	44.7
Adults in families with children and multiple adults	280	11.6	16.8	22.2	29.7	34.7	39.6	46.5	49.0	55.4	58.6
Children in families with children and multiple adults	266	8.1	10.8	15.7	24.3	30.1	38.3	45.1	51.8	55.8	58.3
Adults in families with children and a married head	581	7.6	21.0	28.9	32.6	41.3	46.2	50.2	53.8	57.7	59.5
Children in families with children and a married head	584	8.8	22.6	30.3	32.7	40.5	45.2	49.0	53.8	58.3	62.9
Children in child-only families [a]	—	—	—	—	—	—	—	—	—	—	—
Individuals in families without children	1,089	7.0	13.2	17.4	21.1	25.3	31.4	34.9	38.4	40.5	42.5
Individuals in families with elderly members	550	5.5	10.2	13.2	15.2	19.0	23.6	26.5	30.1	32.0	33.0
Elderly members living alone	227	0.0	1.4	2.8	3.3	4.5	9.1	9.5	13.9	15.5	17.2
Elderly members living with other elderly individuals	105	5.2	12.5	16.9	20.4	25.3	27.2	33.7	36.5	38.2	38.2
Elderly members living with nonelderly individuals	210	9.9	16.5	19.9	23.7	29.5	35.6	39.7	43.4	45.9	46.8
Individuals in families with disabled members	356	4.4	8.9	10.9	14.7	18.1	24.4	26.4	30.9	34.0	35.6
Individuals in families without any elderly or disabled members	183	14.0	25.7	36.0	42.9	49.1	58.0	66.7	68.4	69.5	75.8

Table continues

Table II.19, *continued*

Subgroup	Sample Size	Cumulative Exit Rates									
		0.5 Yrs. or Less	1 Yr. or Less	1.5 Yrs. or Less	2 Yrs. or Less	3 Yrs. or Less	4 Yrs. or Less	5 Yrs. or Less	6 Yrs. or Less	7 Yrs. or Less	8 Yrs. or Less
Age and Disability											
Nonelderly disabled adults	619	3.4	8.1	10.0	12.4	16.6	20.9	24.5	28.3	31.9	34.2
Nonelderly nondisabled childless adults	208	15.0	28.8	37.8	46.4	51.6	62.2	68.3	73.9	73.9	76.1
Age											
Children (under age 18)	1,619	5.6	12.4	17.4	21.3	28.3	34.4	40.0	45.6	50.7	53.3
Nonelderly adults (age 18 - 59)	1,805	7.7	16.1	21.9	26.6	32.9	38.8	43.6	46.8	50.6	52.9
Elderly adults (age 60 and over)	535	4.1	7.7	10.2	11.7	14.0	17.3	19.6	22.8	25.4	26.1
Sex											
Male (age 18 and over)	787	10.0	20.2	26.2	31.3	37.6	44.0	48.6	53.3	56.1	58.9
Female (age 18 and over)	1,553	5.5	11.7	16.6	20.3	25.6	30.6	34.7	37.2	41.1	42.7
Race/Ethnicity [b]											
White, Non-Hispanic	1,658	5.9	14.1	18.8	22.0	30.2	36.4	41.5	44.9	49.6	52.1
African American, Non-Hispanic	1,077	6.0	10.8	15.4	21.0	25.5	31.3	36.4	41.5	43.9	46.5
Hispanic, all races	927	6.8	15.7	21.7	25.7	31.2	36.7	41.6	46.4	51.6	53.2
Asian, Non-Hispanic	88	4.5	9.6	15.3	20.2	21.9	24.2	24.8	27.4	31.1	31.1
Other, Non-Hispanic	209	12.5	20.1	27.5	29.1	35.4	40.4	42.3	45.6	54.1	55.3
Education											
Individuals in families with high school graduates	2,980	7.2	14.9	21.0	25.1	31.5	37.1	42.2	47.0	51.8	54.2
Individuals in families with no high school graduates	979	4.0	9.8	12.0	15.8	21.5	27.6	31.7	34.3	37.0	38.9

Table continues

Table II.19, *continued*

Subgroup	Sample Size	Cumulative Exit Rates									
		0.5 Yrs. or Less	1 Yr. or Less	1.5 Yrs. or Less	2 Yrs. or Less	3 Yrs. or Less	4 Yrs. or Less	5 Yrs. or Less	6 Yrs. or Less	7 Yrs. or Less	8 Yrs. or Less
Citizenship											
Citizen	3,663	6.4	13.8	18.9	22.7	28.5	34.2	38.9	42.9	46.8	49.2
Noncitizen	296	6.7	13.5	18.6	26.4	37.5	43.5	51.5	59.4	67.7	68.3
Citizen children living with noncitizen adults in the family	244	9.2	19.0	28.5	31.8	39.9	48.0	51.4	54.6	59.8	63.1
Adults in families with citizen adults and citizen children	1,099	7.3	16.2	22.4	26.8	32.9	37.6	42.2	44.9	49.3	51.3
Children in families with citizen adults and citizen children	1,420	5.4	12.2	17.7	21.0	27.5	33.0	38.4	44.0	48.6	51.1
Adults in families with noncitizen adults and citizen children	109	6.6	14.4	16.8	19.0	30.2	40.4	49.1	55.6	62.2	63.9
Children in families with noncitizen adults and citizen children	159	8.2	17.4	18.7	22.9	32.2	43.5	51.9	58.8	66.0	70.6
Individuals by Family Poverty Status											
Under 50 percent of poverty	772	4.1	7.6	10.5	14.9	21.0	27.6	33.0	37.0	41.3	43.2
50 to under 100 percent of poverty	1,359	4.7	11.4	16.2	19.4	25.2	29.3	31.9	35.9	41.0	43.8
100 to 130 percent of poverty	586	6.6	16.1	21.0	23.6	29.3	37.1	43.2	46.8	51.0	51.8
More than 130 to under 200 percent of poverty	566	8.8	16.4	26.1	31.1	38.5	46.2	52.7	58.9	61.2	64.4
200 or more percent of poverty	393	14.3	28.6	32.6	39.2	47.9	51.7	58.3	63.1	66.8	67.3
Presence of Income											
Individuals in families with no income	283	5.7	11.7	18.3	23.1	27.2	33.3	39.7	42.4	45.5	50.4
Individuals in families with income	3,676	6.5	13.9	18.9	22.9	29.3	35.0	39.8	44.1	48.4	50.5
Presence of Earnings											
Individuals in families with earnings	2,074	8.7	19.0	26.3	30.9	39.0	44.9	49.8	53.4	58.4	60.5
Individuals in families without earnings	1,885	3.9	7.7	10.3	13.7	17.8	23.4	28.1	33.1	36.3	38.8

Table continues

Table II.19, *continued*

Subgroup	Sample Size	Cumulative Exit Rates									
		0.5 Yrs. or Less	1 Yr. or Less	1.5 Yrs. or Less	2 Yrs. or Less	3 Yrs. or Less	4 Yrs. or Less	5 Yrs. or Less	6 Yrs. or Less	7 Yrs. or Less	8 Yrs. or Less
Presence of TANF											
Individuals in families with TANF	439	3.9	6.7	9.0	12.6	18.1	23.9	34.1	41.8	47.4	48.6
Individuals in families without TANF	3,520	6.8	14.7	20.3	24.4	30.7	36.5	40.6	44.3	48.4	50.7
Other Income											
Individuals in families with Social Security income	1,177	5.6	9.1	12.6	17.0	23.1	27.4	31.7	35.6	39.1	41.8
Individuals in families without Social Security income	2,782	6.8	15.5	21.2	25.1	31.4	37.7	42.7	47.1	51.6	53.7
Individuals in families with SSI	985	5.5	8.5	11.5	14.0	19.3	23.7	28.5	34.1	36.4	38.8
Individuals in families without SSI	2,974	6.7	15.3	21.1	25.6	32.1	38.2	43.2	46.9	52.0	54.3
Individuals in families with unemployment compensation	201	15.1	30.9	35.6	43.6	49.2	50.7	54.1	59.0	62.2	62.2
Individuals in families with no unemployment compensation	3,758	5.9	12.7	17.9	21.7	28.0	34.0	38.9	43.1	47.4	49.7
Mortgage Foreclosure Status (during study period)											
Individuals in housing units affected by foreclosure event	180	11.0	19.6	30.0	35.2	47.8	48.9	48.9	51.0	51.8	55.2
Individuals not in housing units affected by foreclosure event	3,779	6.2	13.5	18.3	22.3	28.3	34.2	39.3	43.6	48.0	50.2
Characteristics of Individual's Neighborhood [c]											
Individuals living in high poverty neighborhood [d]	2,198	5.7	11.0	15.8	20.4	25.4	31.9	36.6	40.9	45.0	47.0
Individuals not living in high poverty neighborhood [d]	1,539	7.2	17.5	22.5	25.8	33.1	38.2	43.0	47.3	51.5	54.1

Table continues

Table II.19, *continued*

Subgroup	Sample Size	Cumulative Exit Rates: 0.5 Yrs. or Less	1 Yr. or Less	1.5 Yrs. or Less	2 Yrs. or Less	3 Yrs. or Less	4 Yrs. or Less	5 Yrs. or Less	6 Yrs. or Less	7 Yrs. or Less	8 Yrs. or Less
Characteristics of Individual's Neighborhood, *continued*											
Individuals living in low-income neighborhood [e]	2,201	5.9	12.3	17.2	21.5	26.2	33.3	37.7	42.7	46.3	48.3
Individuals not living in low-income neighborhood [e]	1,536	6.8	15.7	20.5	24.3	32.0	36.3	41.6	44.8	49.7	52.3
Individuals living in high SNAP participation neighborhood	2,268	5.6	10.8	15.5	19.4	24.2	30.4	34.8	39.7	43.6	45.7
Individuals not living in high SNAP participation neighborhood	1,691	7.4	17.4	23.1	27.3	35.3	40.5	46.0	49.4	54.0	56.4
Geographic Access to Food [f]											
Individuals in low food access census tracts	1,444	6.4	14.9	20.6	25.1	31.6	38.7	44.2	47.7	53.0	55.8
Individuals not in low food access census tracts	2,293	6.2	13.1	17.5	21.2	26.9	32.1	36.4	41.1	44.4	46.3
Individuals in low-income census tracts with low food access	918	5.0	10.0	16.4	21.9	25.9	35.6	41.1	44.0	49.1	52.1
Individuals not in low-income/low-food access tracts	2,819	6.7	14.9	19.3	22.9	29.5	34.3	38.8	43.6	47.3	49.4
SNAP Policy Variables											
Vehicle/Categorical Eligibility Rules											
Individuals in States:											
Offering broad-based categorical eligibility	1,882	6.3	12.6	17.6	21.2	27.4	32.4	36.4	40.2	44.7	47.1
Excluding all or most vehicles	1,820	6.7	15.1	20.8	25.3	31.8	38.5	44.2	48.6	52.2	53.9
Excluding one or fewer vehicles for SNAP unit [g]	257	5.9	13.2	15.1	20.3	25.0	30.3	36.0	41.7	47.6	52.1

Table continues

Table II.19, *continued*

Subgroup	Sample Size	Cumulative Exit Rates: 0.5 Yrs. or Less	1 Yr. or Less	1.5 Yrs. or Less	2 Yrs. or Less	3 Yrs. or Less	4 Yrs. or Less	5 Yrs. or Less	6 Yrs. or Less	7 Yrs. or Less	8 Yrs. or Less
SNAP Policy Variables, *continued*											
Average Certification Period											
Individuals in States with average certification periods:											
Under 10 months	1,113	4.2	10.8	15.7	20.2	27.4	33.7	37.3	41.0	43.8	46.2
Between 10 and 12.9 months	1,816	6.5	13.6	19.5	23.4	29.8	36.0	42.8	46.6	51.3	52.9
At least 13 months	1,030	8.6	17.0	21.0	24.9	29.9	34.4	37.1	42.7	47.4	50.6
Total Federal and State Outlays for SNAP Outreach											
Individuals in States with:	1,219	6.1	16.4	22.7	27.1	32.9	39.8	44.3	47.5	52.0	53.8
Fiscal year federal outlays of $0	772	9.6	18.2	23.8	26.8	34.2	39.2	42.2	47.7	52.0	53.6
Fiscal year federal outlays between $1 and $500,000	1,968	5.5	10.8	15.1	19.4	25.4	30.8	36.5	40.9	44.8	47.5
Fiscal year outlays greater than $500,000	1,113	4.2	10.8	15.7	20.2	27.4	33.7	37.3	41.0	43.8	46.2

Universe: All SNAP participants in spells underway in December 2008 (common month of second wave). Spell start month can precede panel month 1; spells can be completed in panel months 1-53.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA "Characteristics of SNAP Households" reports, FY 2009-2012.

Notes: [a] Data suppressed for this subgroup because sample size is less than 10.

[b] Categories are race *alone*; respondents who reported multiple races are in the Other, Non-Hispanic category.

[c] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[d] "High poverty" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[e] "Low-income" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[f] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[g] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets.

3. SNAP Spell Length and Employment

Given the severity of the recession at the start of the 2008 study period, FNS was interested in assessing the extent to which the lengths of SNAP spells can be attributed to new sources of employment. We addressed this question by first considering employment as an exit trigger event (exit triggers are discussed further in Section C), and assessing how quickly after finding new employment recent SNAP entrants leave the program. We limit our universe to individuals who were unemployed when entering SNAP and transitioned from unemployment to employment after entering SNAP.[41] Among these individuals, we estimate the percentage that exited SNAP before finding employment, the percentage that exited during the same month in which the individual became employed, and the percentages that exited SNAP within 12 months (Table II.20). We also estimate the percentage that remained on SNAP more than 12 months after finding a job and calculate median total SNAP spell lengths for these groups of individuals.

We found that 33 percent of individuals who were unemployed at the start of the SNAP spell left the program before they found employment. These individuals tended to have short SNAP spell lengths (approximately 4 months). About 21 percent left during the month in which they found a job, 29 percent exited within a year, and 18 percent did not exit within a year or did not find employment and had not exited SNAP by the end of the panel period.

Table II.20 Length of Time that Unemployed SNAP Entrants Remain on SNAP After Finding Employment, and Median SNAP Spell Length, 2008 SIPP Panel

Subgroup	Sample Size (Spells)	Percentage	Median SNAP Spell Length (Months)
All Individuals	8,843		12
Unemployed at Start of SNAP Spell	250	100.0	14
Exited SNAP before finding job	83	32.5	4
Exited SNAP upon finding job	51	21.1	>51
Exited SNAP within 1-12 months of finding job	68	28.8	9
Did not exit SNAP within 12 months after finding job	48	17.6	>51

Universe: Individuals who transitioned from unemployment to employment after entering SNAP.
Source: Decision Demographics tabulations of the 2008 SIPP Panel.

[41] As in prior Dynamics studies, we categorize an individual as being unemployed based on the employment status recode variable and the usual hours worked per week recode variables. Unemployed individuals consists of those with employment status recodes of "With a job at least 1 but not all weeks, some weeks on layoff, or looking for work", "No job all month, on layoff or looking for work all weeks.", or "No job all month, at least one but not all weeks on layoff or looking for work". Also included as unemployed are individuals that reported that they were absent without pay from a job all weeks in month due to layoff.

Next, we estimated SNAP spell lengths for individuals who were unemployed when entering SNAP by how long it took the individual to find a job. We calculated median spell lengths and 4-month, 12-month, and 24-month exit rates for those who found a job within 6 months, within one year, within 2 years, and who did not find a job within two years (Table II.21). We excluded spells that began before the start of the panel, but include multiple spells for individuals who entered SNAP multiple times during the panel while unemployed. We also looked at the behavior of individuals in families with at least one member who was unemployed at the start of the SNAP spell.

SNAP spell length generally did not vary by how long it took an individual who was unemployed at the start of the SNAP spell to find a job, except among those who took at least two years to find a job after entering. The median spell length was about 12 months for individuals who found a job within six months of entering SNAP, within 7 to 12 months of entering SNAP, and within 13 to 24 months of entering SNAP. In fact, as we observed in Table II.20, it appears that some individuals who had not found employment within a year of entering SNAP left the program before finding employment. When extending the analysis to individuals in families with an unemployed member at the start of SNAP spell, we find that this group remained on SNAP slightly longer when the unemployed person found a job within six months than when the unemployed person found employment within seven months to two years.

Table II.21 Median SNAP Spell Length for Unemployed Individuals and for Individuals in Families with Unemployed Members by Number of Months until Finding a Job, 2008 SIPP Panel

Subgroup	Sample Size (Spells)	Median SNAP Spell Length (Months)	Cumulative Exit Rates		
			4 months or less	12 months or less	24 months or less
All Individuals	8,843	12	26.2	51.8	67.2
Unemployed at Start of SNAP Spell	250	14	24.0	47.5	61.0
Found job 0-6 months after start of SNAP spell	106	12	21.3	50.7	70.5
Found job 7-12 months after start of SNAP spell	29	11	37.7	58.8	58.8
Found job 13-24 months after start of SNAP spell	50	12	32.8	53.3	65.3
Did not find job within 24 months after start of SNAP spell	65	>51	15.7	35.2	47.8
In Families with an Unemployed Member at Start of SNAP Spell	882	14	23.5	47.7	60.4
At least one unemployed member found job 0-6 months after start of SNAP spell	416	12	22.5	50.3	67.8
At least one unemployed member found job 7-12 months after start of SNAP spell	78	11	29.3	56.1	67.0
At least one unemployed member found job 13-24 months after start of SNAP spell	170	10	31.0	54.8	62.8
No unemployed member found job within 24 months after start of SNAP spell	218	>51	17.6	36.8	48.0

Universe: Panel members, unemployed (or with unemployed family members) upon entering SNAP, with SNAP spells that begin in month 3 to 54 (members can contribute more than one spell, and spells begin during panel, i.e. no left-censored spells included).

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Note: For families with multiple unemployed members, the number of months until finding a job is calculated for the first person in the family to find a job.

To assess whether individuals with multiple spells of unemployment tend to have longer median SNAP spell lengths, we compared median SNAP spell lengths and cumulative SNAP exit rates for individuals who had only one unemployment spell within the previous 24 months to those who had multiple unemployment spells within the previous 24 months (Table II.22).[42] For this table, we only included panel members with SNAP spells that begin in months 24 through 54, so that we could review two full years of their employment history before SNAP entry. As we did in Table II.21, we excluded spells that began before the start of the panel, but included multiple spells for individuals who entered SNAP multiple times during the panel while being unemployed. We also looked at the behavior of both individuals who were unemployed at the start of the SNAP spell and those in families with at least one unemployed member.

Experiencing multiple fluctuations in employment, compared with a single fluctuation, was usually not associated with the unemployed individual's SNAP spell length. Individuals with a single spell of unemployment within the previous 24 months had the same average SNAP spell length (12 months) as those with multiple spells of unemployment, and the same held true for individuals with unemployed family members. Furthermore, close to the same percentage exited within four months, within 12 months, and within 24 months across those with a single spell of unemployment and those with multiple spells of unemployment.[43]

[42] We also looked into tabulating each of these two groups by whether they found employment within one year, two years, or more than two years after the start of their SNAP spell. However, sample sizes were too small to generate any meaningful results.

[43] In each of Tables II.20, II.21, and II.22, caution should be taken when interpreting results with small sample sizes.

Table II.22 Median SNAP Spell Length by Number of Unemployment Spells, 2008 SIPP Panel

Subgroup	Sample Size (Spells)	Median SNAP Spell Length (Months)	Cumulative Exit Rates		
			4 months or less	12 months or less	24 months or less
All Individuals	5,300	12	26.8	53.4	68.4
Individual's Unemployment Spells in Previous 24 Months					
1 or more spells	651	12	28.9	52.1	66.9
1 spell	468	12	29.4	52.2	67.9
2 or more spells	183	12	27.7	51.6	64.0
Unemployment Spells in the Individual's Family in Previous 24 Months					
1 or more spells	1,395	12	30.0	52.2	66.9
1 spell	965	12	30.3	52.5	65.8
2 or more spells	430	12	29.1	51.6	69.5

Universe: Panel members with SNAP spells that begin in month 24 to 54 (members can contribute more than one spell, and spells begin during panel, i.e. no left-censored spells included).

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Note: For families with multiple unemployed members, we count the number of unemployment spells for the family member with the most unemployment spells.

4. Spell Lengths Before and After Implementation of ARRA

Similar to our analysis of monthly entry rates before and after the implementation of ARRA in April, 2009, we also assessed differences in spell lengths for new SNAP entrants in the periods immediately before and after the implementation of ARRA (Table II.23). We defined these periods as October 2008 through March 2009, and April 2009 through September 2009, respectively. Because the pre-ARRA period is limited to six months, we limited entrants in the post-ARRA period to those who spent six or fewer months on SNAP. We limited the table universe to individuals who entered and exited within each of those six month period. We found some evidence that the length of spells under six months may have been shorter before ARRA implementation than after implementation. A higher percentage of individuals entering in the six months prior to the implementation of ARRA exited within two months (37 percent) compared with the percentage exiting within two months among those entering in the six months following ARRA implementation (24 percent). Ninety percent of these short spells occurring shortly before ARRA implementation were four months or less, compared with 85 percent of those occurring just after ARRA implementation.

Table II.23 Spell Lengths for SNAP Participants Before and After ARRA Implementation, 2008 SIPP Panel

	Pre-ARRA Participants (October 2008–March 2009)		Post-ARRA Participants (April 2009–September 2009)	
Spell Length (Months)	Number	Cumulative Percentage	Number	Cumulative Percentage
2	603,405	36.9	446,125	24.1
3	187,686	48.4	278,177	39.1
4	673,521	89.6	833,498	84.2
5	110,692	96.4	276,893	99.1
6	59,070	100.0	16,240	100.0
Total New Spells	1,634,374		1,850,934	

Universe: Panel members with SNAP spells that begin and end during the specified 6-month period. Members can contribute more than one spell.
Source: Decision Demographics tabulations of the 2008 SIPP Panel.

C. Exiting SNAP

Our analysis of SNAP spell lengths tells us how long individuals stay in SNAP before they exit. We now turn to examining the life events that might lead to their exit in order to estimate how many individuals leave SNAP in the period covered by the 2008 SIPP panel for reasons that are not related to improved financial circumstances or reduced need as measured in the SIPP. To answer this question, we will determine (1) what types of events most often precede a SNAP exit; (2) how often an exit is preceded by an observed trigger event; and (3) whether trigger events differ with characteristics of the participants.

As with entry trigger events, we cannot directly identify the reason individuals stop receiving SNAP benefits, but we can examine their life circumstances (and changes in their life circumstance) immediately around the time they leave the program to try to understand more about why they exited. In this analysis, we use SIPP data on SNAP participants' circumstances to define a set of trigger events that are analogous to the entry trigger events discussed in Section A. We then examine the extent to which these exit trigger events precede SNAP exits. Individuals exiting SNAP who did not encounter an increase in earnings or other income and did not experience a change in family size are assumed to have exited SNAP for reasons that are not related to improved financial circumstances or reduced need.

1. Methods

We choose our exit and entry triggers in much the same way, primarily based on the triggers found relevant in prior studies. We define exits only for the at-risk population, which consists of all individuals who participated in SNAP for the previous two months. We examine SNAP exits in sample months 5 through 54 of the SIPP panel period, using trigger events in months 2 to 51,

and allow individuals to contribute more than one observation to the data set.[44] We define exiting SNAP as not receiving SNAP benefits in the sample month or the following month.[45]

We look for exit trigger events that occurred during the sample month or any of the three previous months. Unlike the definitions used for entry trigger events, we shift the window to include the sample month, because some participants may exit SNAP in the same month that their circumstances change. In entry, the circumstances may need to have changed for a person to become eligible, but they may exit knowing that circumstances are about to change (for example, that he or she is starting a new job the following week).

We use the following trigger events in this analysis:

- Increase in family earnings (10 percent or more)
- Increase in other family income (10 percent or more)
- Departure of family member without income[46]
- Departure of family member with income
- New adult family member
- New child family member

2. Characteristics of SNAP Exiters, and Exit Rates by Characteristic in the 2008 Panel

Before turning to exit trigger events, we take a broader look at the characteristics of SNAP exiters, and exit rates by characteristics. Generally, SNAP exiters had similar characteristics to the full SNAP population. We find that most SNAP participants who exited the program during the panel period were in families without children (Table II.24). About 60 percent were nonelderly adults, 86 percent were in families with high school graduates, 76 percent were in families with earnings, 58 percent were not living in low-income neighborhoods, and 55 percent were in areas with low rates of SNAP participation. Additionally, more than half of those exiting SNAP were in families with income above 130 percent of poverty. At the other end of the spectrum, only 2 percent of exiters were in families with TANF, 5 percent were in families with unemployment compensation, and only 6 percent were in families with no income.

Monthly exit rates were higher for some groups than for others. For example, nearly 3 percent of individuals in families with children exited each month, compared with almost 4 percent of individuals with families without children. Those in families without elderly or disabled members exited more frequently (at a rate of about 7 percent) than those in families with elderly members (3 percent) or disabled members (2 percent). In particular, elderly individuals living without any other family members exited at the very low rate of 1 percent.

[44] An exit in month 5 is defined as participating in SNAP in month 4 and not participating in month 5. Thus, while exits are defined in months 5 to 54, they are based on participation data from months 4 to 53.

[45] Because of our practice of closing up both one-month gaps in participation and one-month spells, a true exit must consist of two months of participation followed by two months of nonparticipation.

[46] "Departures" from a household are measured by comparing household composition from month to month. Reasons for departure are not specified within this measure, but they could include moving to a different household, going overseas to serve in the armed forces, leaving a household and the SIPP panel for reasons unknown, or death.

Monthly exit rates also varied by income level and presence of earnings. About 5 percent of individuals in families with income between 130 and 200 percent of poverty and 6 percent of those with income over 200 percent of poverty exited each month, compared with only 1 percent of those in families with income under 50 percent of poverty and 2 percent of those in families with income between 50 and 100 percent of poverty. Those in families with earnings exited at a rate of 4 percent, compared with 2 percent for those without earnings.

Table II.24 Characteristics of SNAP Exiters, and Exit Rates by Characteristic, 2008 SIPP Panel

Subgroup	Percentage of All SNAP Exiters	Exit Rate
Total: All Person Months	100.0	2.9
SNAP Benefit Receipt		
Previously received SNAP benefits (age 18 and older)	70.1	3.5
Family Composition		
Individuals in families with children	67.3	2.7
Adults in families with children and one adult	6.1	1.9
Children in families with children and one adult	9.2	1.5
Adults in families with children and multiple adults	9.6	3.5
Children in families with children and multiple adults	4.6	1.8
Adults in families with children and a married head	19.9	3.7
Children in families with children and a married head	17.5	3.3
Children in child-only families	0.3	4.1
Individuals in families without children	32.7	3.5
Individuals in families with elderly members	11.8	2.9
Elderly members living alone	1.6	1.1
Elderly members living with other elderly individuals	1.8	2.6
Elderly members living with nonelderly individuals	8.0	4.6
Individuals in families with disabled members	6.7	2.2
Individuals in families without any elderly or disabled members	14.2	6.5
Age and Disability		
Nonelderly disabled adults	9.0	1.7
Nonelderly nondisabled childless adults	17.7	7.0
Age		
Children (under age 18)	31.7	2.3
Nonelderly adults (age 18 - 59)	59.9	3.5
Elderly adults (age 60 and over)	8.5	2.4
Sex		
Male (age 18 and older)	30.9	4.2
Female (age 18 and older)	37.4	2.9

Table continues

Table II.24, *continued*

Subgroup	Percentage of All SNAP Exiters	Exit Rate
Race/Ethnicity [a]		
White, Non-Hispanic	43.3	3.1
African American, Non-Hispanic	21.6	2.3
Hispanic, all races	28.3	3.2
Asian, Non-Hispanic	2.0	2.9
Other, Non-Hispanic	4.8	3.4
Education		
Individuals in families with high school graduates	86.2	3.2
Individuals in families with no high school graduates	13.8	1.9
Citizenship		
Citizen	90.8	2.8
Noncitizen	9.2	3.7
Citizen children living with noncitizen adults in the family	6.9	3.0
Adults in families with citizen adults and citizen children	31.3	3.1
Children in families with citizen adults and citizen children	26.6	2.2
Adults in families with noncitizen adults and citizen children	3.9	3.4
Children in families with noncitizen adults and citizen children	4.4	2.9
200 or more percent of poverty	25.0	6.3
Individuals by Family Poverty Status		
Under 50 percent of poverty	9.1	1.4
50 to under 100 percent of poverty	19.9	1.7
100 to 130 percent of poverty	12.3	2.5
More than 130 to under 200 percent of poverty	28.2	5.2
200 or more percent of poverty	25.0	6.3
Presence of Income		
Individuals in families with no income	5.5	2.4
Individuals in families with income	94.5	2.9
Presence of Earnings		
Individuals in families with earnings	75.7	3.9
Individuals in families without earnings	24.3	1.6
Presence of TANF		
Individuals in families with TANF	1.5	0.4
Individuals in families without TANF	98.5	3.2

Table continues

Table II.24, *continued*

Subgroup	Percentage of All SNAP Exiters	Exit Rate
Other Income		
Individuals in families with Social Security income	27.1	2.7
Individuals in families without Social Security income	72.9	3.0
Individuals in families with SSI	16.8	2.1
Individuals in families without SSI	83.2	3.2
Individuals in families with unemployment compensation	4.9	2.0
Individuals in families with no unemployment compensation	95.1	3.0
Mortgage Foreclosure Status (during study period)		
Individuals in housing units affected by foreclosure event	7.4	4.0
Individuals not in housing units affected by foreclosure event	92.6	2.8
Characteristics of Individual's Neighborhood [b]		
Individuals living in high poverty neighborhood [c]	47.3	2.6
Individuals not living in high poverty neighborhood [c]	48.6	3.2
Individuals living in low-income neighborhood [d]	47.4	3.1
Individuals not living in low-income neighborhood [d]	57.7	2.6
Individuals residing in areas with high rates of SNAP participation	45.0	2.4
Individuals residing in areas with low rates of SNAP participation	55.0	3.5
Geographic Access to Food [e]		
Individuals in low food access census tracts	38.3	3.1
Individuals not in low food access census tracts	57.6	2.7
Individuals in low-income census tracts with low food access	21.2	3.0
Individuals not in low-income/low-food access tracts	74.7	2.9
SNAP Policy Variables		
Vehicle/Categorical Eligibility Rules		
Individuals in States:		
Offering broad-based categorical eligibility	76.0	2.9
Excluding all or most vehicles	20.8	3.0
Excluding one or fewer vehicles for SNAP unit [f]	3.2	2.8
Average Certification Period		
Individuals in States with average certification periods:		
Under 10 months	25.6	2.9
Between 10 and 12.9 months	41.9	3.2
At least 13 months	32.5	2.6

Table continues

Table II.24, *continued*

Subgroup	Percentage of All SNAP Exiters	Exit Rate
SNAP Policy Variables, *continued*		
Total Federal and State Outlays for SNAP Outreach		
Individuals in States with:		
Fiscal year federal outlays of $0	17.5	3.0
Fiscal year federal outlays between $1 and $500,000	21.7	2.9
Fiscal year outlays greater than $500,000	60.8	2.9
Sample Size — Total person months	1,443,354	

Universe: All SNAP participants in spells underway between September 2008 and November 2012.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA "Characteristics of SNAP Households" reports, FY 2009-2012.

Notes: [a] Categories are race *alone*; respondents who reported multiple races are in the Other, Non-Hispanic category.

[b] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[c] "High poverty" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[d] "Low-income" neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[e] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[f] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets.

3. Distribution of Exit Trigger Events Among All SNAP Participants in the 2008 Panel

The most common exit trigger events were increases in family income (excluding earnings) and increases in earnings, with about two-thirds of the sample experiencing each event at some time during the panel (Table II.25). An increase in earnings within the previous four months was more commonly associated with an exit than an increase in other income. Of those experiencing an earnings increase, 19 percent exited within four months; 14 percent of those with an increase in other income exited within the 4-month window.

Family composition changes were less common than increases in income, but the triggers still led to similar exit rates among SNAP participants. Fifty-two percent of SNAP participants had a family member with income exit, whereas 55 percent of SNAP participants had a family member without income exit. In each case, close to 20 percent of the participants who experienced a decrease in family size left within four months of the decrease.

Twenty-nine percent of SNAP exiters did not experience a trigger event related to improved financial circumstances or reduced need, as measured by changes in income and family composition. The remaining 71 percent of SNAP exiters experienced at least one trigger event within the four-month window, with 37 percent experiencing multiple events. Mirroring the incidence of the trigger events among SNAP participants, SNAP exiters were most likely to have experienced an increase in earnings (39 percent) relative to other trigger events.

Table II.25 Exit Rates by Frequency of SNAP Exit Trigger Events, 2008 SIPP Panel

Trigger Event	Percentage of SNAP Participants who Experienced the Event during the Panel	Percentage of Individuals who Experienced the Trigger and then Exited SNAP within 4-Month Window	Percentage of Individuals Exiting SNAP who Experienced the Trigger within Previous 4 Months
Increase in Income			
Earnings	66.1	19.2	38.9
Other income	67.3	14.3	29.3
Change in Family Composition			
Family Size Decreases			
Member without income leaves	54.7	19.4	23.7
Member with income leaves	52.3	19.7	22.7
Family Size Increases			
New child	17.3	14.0	3.3
New adult	24.3	15.4	5.8
Other	4.4	14.6	1.1
Distribution of Trigger Events			
Experienced no trigger events	10.2	NA	28.8
Experienced any single trigger event	16.5	NA	33.7
Experienced multiple events	73.3	NA	37.4
Experienced any trigger event	89.8	17.4	71.2
Leaves the Sample [a]	2.4	100.0	3.0
Sample Size	9,336	242,291	7,358

Universe: All individuals at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period). Percent experiencing event at some point: individual level; Percent exiting within specified number of months of experiencing event: person month level; Percent of exiters: individuals exiting SNAP.

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

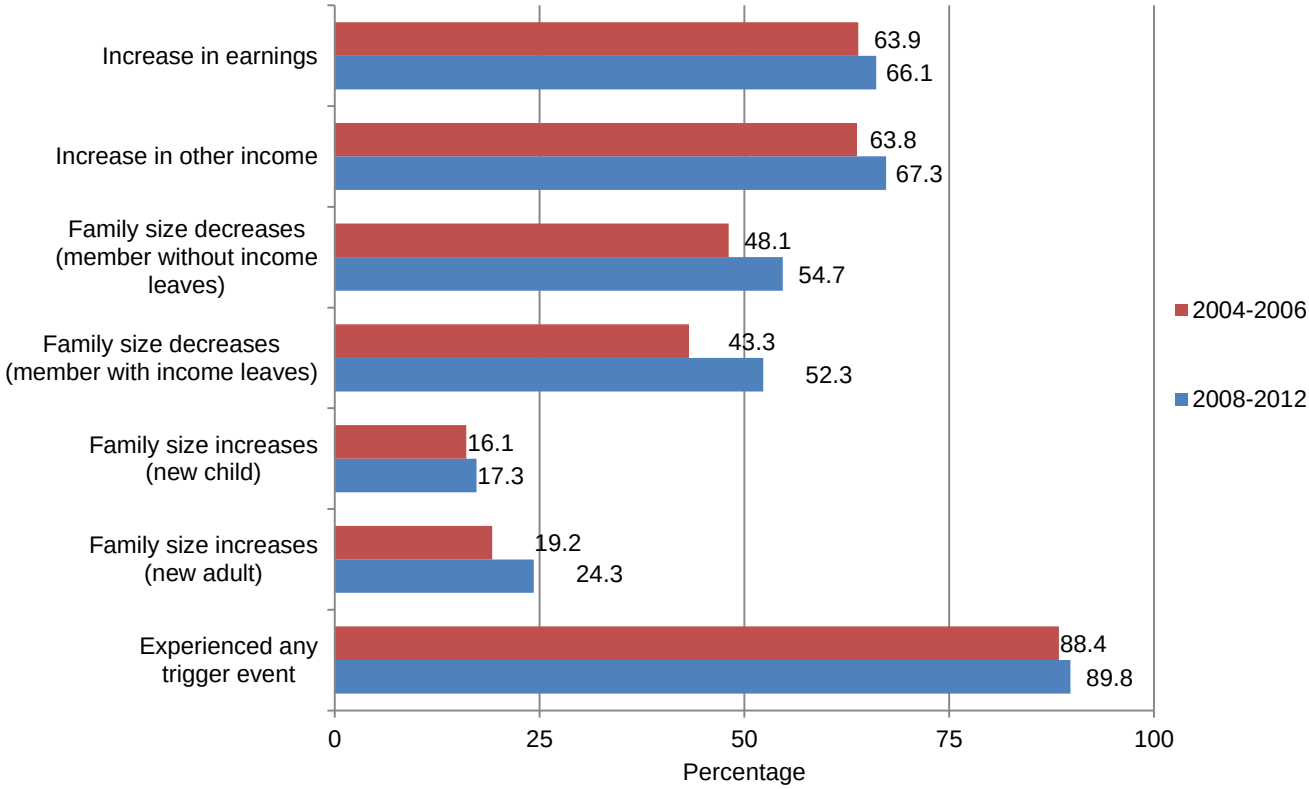
Notes: Reference months: SNAP entries (4-month window): panel months 5-54, triggers (4-month window): panel months 2-51.

[a] Individuals who die, are institutionalized, enter the armed forces and live in army barracks, or leave the country are removed from the SIPP sample. We assume that any one of these reasons would also lead to SNAP exit and assign the sample exit as the exit trigger.

4. Changes in the Distribution of Exit Trigger Events Among All SNAP Participants from 2004 to 2006 to 2008 to 2012

A slightly higher percentage of SNAP participants experienced exit trigger events in the 2008 SIPP panel (covering 2008 to 2012) than in the 2004 SIPP panel (covering 2004 to 2006). As discussed previously, this is likely due to the longer period of the 2008 SIPP panel relative to earlier panels. About 90 percent of participants experienced any trigger event during the 2008 panel, up from 88 percent during the 2004 panel (Figure II.8). The percentage of participants who experienced an increase in earnings grew by about 2 percentage points, and the percentage that experienced an increase in other income increased by nearly 4 percentage points. The prevalence of family size decreases changed by an even larger amount from the 2004 panel to the 2008 panel. In particular, 43 percent of families saw a member with income leave in the 2004 panel, compared with 52 percent in the 2008 panel.

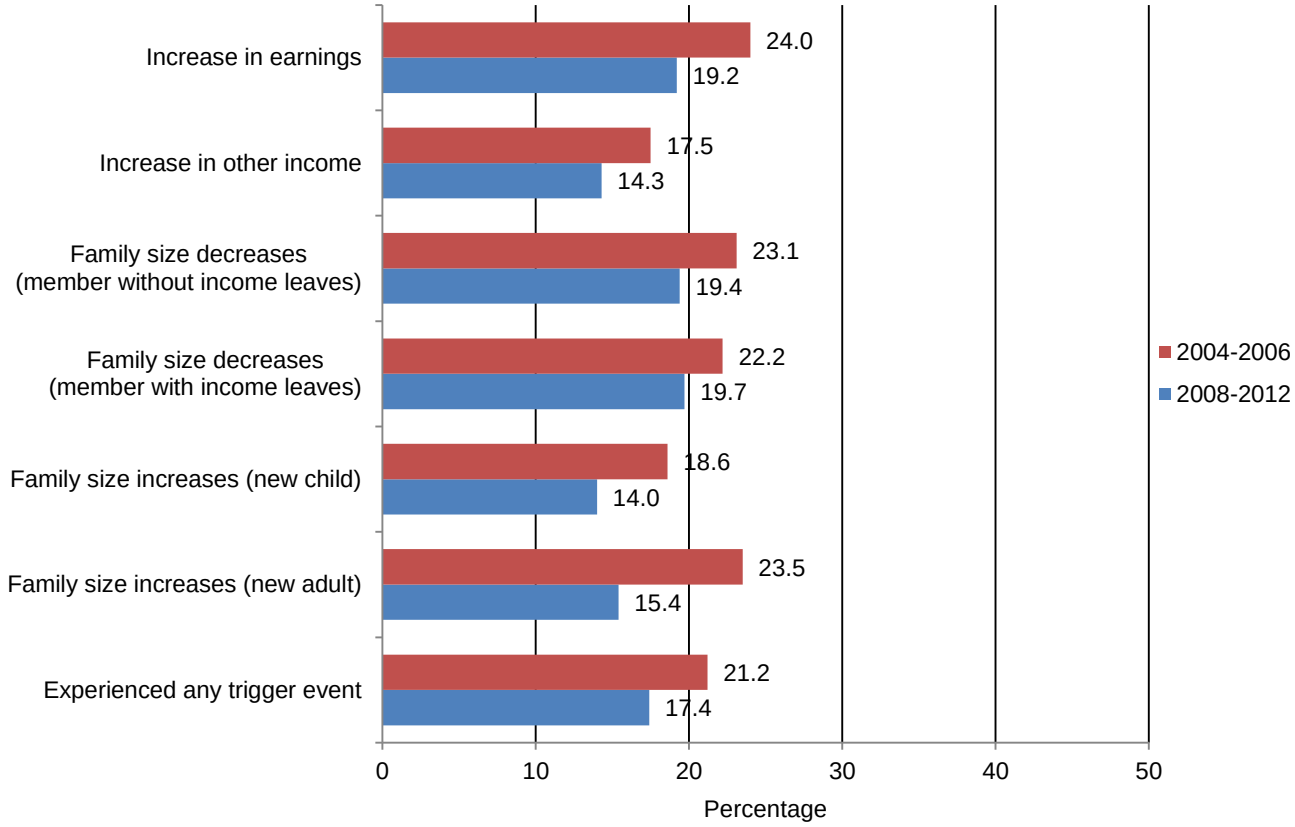
Figure II.8 Percentage of SNAP Participants Experiencing Event, Comparison Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006.

Despite these events becoming more common among SNAP participants, the percentages of SNAP participants experiencing the trigger event who exited within four months decreased from the 2004 panel for every type of trigger (Figure II.9). One possible explanation is that the ARRA benefit increase may have kept these participants eligible for benefits even after the trigger event (for example, an increase in income) took place.

Figure II.9 Percentage of SNAP Participants Who Exited SNAP within Four Months of Experiencing Event, Comparison Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006.

5. Distribution of Exit Trigger Events among Subgroups in the 2008 Panel

Exit rates for individuals experiencing trigger events differed based on the participants' characteristics in the month before the spell began (Table II.26). Eighteen percent of SNAP participants in families with children that experience an increase in earnings exit the program within four months, compared to 25 percent of participants in families without children. Not surprisingly, there is also a differential by income, with nearly 13 percent of participants with income under 50 percent of poverty exiting SNAP within four months of experiencing an increase in earnings, compared to 31 percent of participants with income between 130 and 200 percent of poverty and 27 percent of participants with income above 200 percent of poverty—with the comparison to poverty measured prior to the increase.

Changes in family size (in either direction) are more strongly associated with SNAP exit for participants in families with income greater than 130 percent of poverty, relative to individuals in families with lower income. For example, 25 percent of individuals in families with income over 200 percent of poverty exited SNAP following an increase in family size, and 39 percent exited following a decrease in family size, relative to only 9 percent and 19 percent, respectively, among those in families with income under 50 percent of poverty with an increase or decrease in family size. Additionally, the probability of exiting SNAP following a decrease in family size increases with participants' age, from 23 percent for children to 31 percent for nonelderly adults and 38 percent for elderly adults. Decreases in family size can stem from an individual leaving a family household to live elsewhere, or even from the death of a family member, but the analysis does not differentiate these events—it only senses a net negative change in family size. There is also a striking gender differential, with 41 percent of adult males exiting SNAP after experiencing a decrease in family size, compared to 27 percent of adult females.

Subgroups that have higher-than-average exit rates following one type of trigger event tend to have higher percentages of exits for other types of trigger events. For example, the percentage of individuals in units affected by foreclosure who had experienced an increase in earnings and exited SNAP was nearly 8 percentage points higher than the percentage of individuals in units not affected by foreclosure who had experienced an increase in earnings and exited SNAP; and the percentage affected by foreclosure who had experienced an increase in family size and exited SNAP was 8 percentage points higher than that for the corresponding group not affected by foreclosure.

These subgroups also tend to have higher monthly exit rates overall than the average exit rate for all individuals on SNAP. For example, individuals in housing units affected by mortgage foreclosure events had monthly exit rates of 4 percent on average, compared with an overall SNAP monthly exit rate of nearly 3 percent.

Table II.26 also allows us to compare exit rates for individuals who experienced a trigger event related to improved financial circumstances or reduced need, as measured by changes in income and family composition, to those for individuals who did not. Overall, exit rates were larger for individuals who experienced a trigger event (18 percent) compared with those who did not (11 percent). The difference in the exit rates for those experiencing a trigger event compared to those who did not was about 10 percentage points larger for individuals in families without children, which could indicate that these families may be relatively more responsive to improved financial circumstances than are people in families with children. The difference in the exit rates for those experiencing a trigger event compared to those who did not was also larger for elderly individuals and those with Social Security income, a group that heavily overlaps with elderly individuals.

Table II.26 Frequency of SNAP Exit Trigger Events by Subgroup, 2008 SIPP Panel

Subgroup	Percentage of Individuals Exiting SNAP within 4 Months of the Trigger Event by the Trigger Event (Not Mutually Exclusive)					
	No Trigger Event	Increase in Earnings	Increase in Other Income	Increase in Family Size	Decrease in Family Size	Any Trigger
All Individuals	11.1	19.2	14.3	15.4	28.5	17.6
Family Composition						
Individuals in families with children	10.8	18.0	13.6	15.2	27.0	16.5
Adults in families with children and one adult	7.1	13.1	9.8	12.7	17.0	11.2
Children in families with children and one adult	7.0	11.6	9.1	12.1	23.0	10.4
Adults in families with children and multiple adults	15.4	20.0	15.1	18.5	26.6	19.2
Children in families with children and multiple adults	11.1	13.8	10.2	16.4	21.1	13.2
Adults in families with children and a married head	13.6	22.8	18.5	17.1	35.7	21.9
Children in families with children and a married head	12.6	21.2	16.1	16.1	25.3	18.9
Children in child-only families	14.3	36.0	14.5	8.6	0.0	35.9
Individuals in families without children	12.0	25.0	17.1	16.2	36.7	22.4
Individuals in families with elderly members	10.3	21.7	16.5	13.9	36.6	21.4
Elderly members living alone	3.3	12.1	4.6	10.1	0.0	6.2
Elderly members living with other elderly individuals	9.7	19.4	14.0	6.2	19.5	18.0
Elderly members living with nonelderly individuals	17.1	23.0	22.5	17.0	37.7	25.9
Individuals in families with disabled members	8.3	19.4	13.4	17.3	33.1	17.5
Individuals in families without any elderly or disabled members	20.7	29.4	23.4	16.7	42.3	27.4
Age and Disability						
Nonelderly disabled adults	7.2	13.9	10.6	10.0	18.7	13.2
Nonelderly nondisabled childless adults	23.2	31.0	28.4	21.3	50.5	30.8
Age						
Children (under age 18)	9.8	16.4	12.2	14.3	23.1	14.7
Nonelderly adults (age 18 - 59)	12.8	21.7	16.3	16.3	31.0	20.0
Elderly adults (age 60 and over)	8.6	17.3	13.6	15.0	37.7	19.1

Table continues

Table II.26, *continued*

Subgroup	Percentage of Individuals Exiting SNAP within 4 Months of the Trigger Event by the Trigger Event (Not Mutually Exclusive)					
	No Trigger Event	Increase in Earnings	Increase in Other Income	Increase in Family Size	Decrease in Family Size	Any Trigger
Sex						
Male (age 18 and over)	15.0	26.3	19.6	18.4	41.0	24.7
Female (age 18 and over)	10.3	18.5	14.0	15.3	27.3	17.1
Race/Ethnicity [a]						
White, Non-Hispanic	11.7	20.4	15.8	17.7	29.5	18.8
African American, Non-Hispanic	9.6	16.8	10.2	10.4	20.2	13.9
Hispanic, all races	12.0	19.1	15.9	15.0	29.3	18.4
Asian, Non-Hispanic	9.6	22.2	12.9	16.3	55.6	20.5
Other, Non-Hispanic	12.0	19.0	16.5	21.6	46.9	21.0
Education						
Individuals in families with high school graduates	12.2	20.7	15.5	15.8	28.9	19.0
Individuals in families with no high school graduates	7.3	11.6	9.4	13.9	22.4	10.9
Citizenship						
Citizen	11.0	19.1	14.2	15.6	28.1	17.4
Noncitizen	13.4	20.0	16.3	13.3	33.2	19.9
Citizen children living with noncitizen adults in the family	13.0	17.0	13.2	20.1	24.4	16.0
Adults in families with citizen adults and citizen children	11.9	20.2	15.1	15.7	30.5	18.6
Children in families with citizen adults and citizen children	9.5	16.8	12.4	13.9	22.4	14.8
Adults in families with noncitizen adults and citizen children	12.8	17.1	17.2	12.4	29.9	17.9
Children in families with noncitizen adults and citizen children	12.2	14.2	11.9	18.8	32.2	14.1

Table continues

Table II.26, *continued*

Subgroup	Percentage of Individuals Exiting SNAP within 4 Months of the Trigger Event by the Trigger Event (Not Mutually Exclusive)					
	No Trigger Event	Increase in Earnings	Increase in Other Income	Increase in Family Size	Decrease in Family Size	Any Trigger
Individuals by Family Poverty Status						
Under 50 percent of poverty	6.5	12.5	8.9	8.7	19.1	10.7
50 to under 100 percent of poverty	7.8	17.3	12.6	16.3	21.6	15.4
100 to 130 percent of poverty	10.4	21.9	15.9	9.2	32.0	19.6
More than 130 to under 200 percent of poverty	17.4	30.7	21.9	24.0	30.4	26.7
200 or more percent of poverty	21.5	27.4	23.6	25.3	38.6	27.8
Presence of Income						
Individuals in families with no income	8.9	16.1	7.4	10.9	26.6	13.0
Individuals in families with income	11.3	19.5	14.9	16.0	28.6	18.0
Presence of Earnings						
Individuals in families with earnings	14.3	20.3	18.1	17.6	31.1	20.2
Individuals in families without earnings	7.3	16.7	9.6	12.9	21.1	13.3
Presence of TANF						
Individuals in families with TANF	7.9	10.2	10.5	11.5	21.3	12.1
Individuals in families without TANF	11.5	20.2	14.8	16.1	29.9	18.3
Other Income						
Individuals in families with Social Security income	10.9	19.1	14.8	17.4	29.9	19.0
Individuals in families without Social Security income	11.3	19.2	14.2	14.8	27.7	17.2
Individuals in families with SSI	8.7	17.1	11.0	15.4	26.7	15.3
Individuals in families without SSI	11.9	19.5	15.3	15.4	29.2	18.1
Individuals in families with unemployment compensation	13.8	24.2	16.5	19.4	32.2	21.0
Individuals in families with no unemployment compensation	11.0	18.5	14.1	15.0	28.2	17.2

Table continues

Table II.26, *continued*

Subgroup	Percentage of Individuals Exiting SNAP within 4 Months of the Trigger Event by the Trigger Event (Not Mutually Exclusive)					
	No Trigger Event	Increase in Earnings	Increase in Other Income	Increase in Family Size	Decrease in Family Size	Any Trigger
Mortgage Foreclosure Status (during study period)						
Individuals in housing units affected by foreclosure event	15.0	26.4	20.1	22.8	32.0	25.0
Individuals not in housing units affected by foreclosure event	10.9	18.7	14.0	14.9	28.2	17.1
Characteristics of Individual's Neighborhood [b]						
Individuals living in high poverty neighborhood [c]	9.9	16.7	11.7	13.8	24.4	14.5
Individuals not living in high poverty neighborhood [c]	12.1	21.1	16.9	16.9	31.7	19.7
Individuals living in low-income neighborhood [d]	10.4	17.7	12.3	14.1	24.0	15.2
Individuals not living in low-income neighborhood [d]	11.5	20.0	16.2	16.5	32.4	18.8
Individuals living in high SNAP participation neighborhood	9.5	15.0	10.2	12.6	22.5	13.0
Individuals not living in high SNAP participation neighborhood	13.2	23.3	19.2	18.8	35.4	22.6
Geographic Access to Food [e]						
Individuals in low food access census tracts	11.8	20.7	16.6	18.6	29.3	19.1
Individuals not in low food access census tracts	10.3	17.6	12.6	13.2	27.1	15.5
Individuals in low-income census tracts with low food access	11.4	18.6	14.2	16.8	29.7	17.1
Individuals not in low-income/low-food access tracts	10.7	18.9	14.1	14.8	27.4	16.9
SNAP Policy Variables						
Vehicle/Categorical Eligibility Rules						
Individuals in States:						
Offering broad-based categorical eligibility	10.8	19.2	13.7	15.7	27.0	17.2
Excluding all or most vehicles	12.3	19.5	16.6	15.6	30.9	19.0
Excluding one or fewer vehicles for SNAP unit [f]	10.4	16.6	12.0	8.5	47.3	17.2

Table continues

Table II.26, *continued*

Subgroup	Percentage of Individuals Exiting SNAP within 4 Months of the Trigger Event by the Trigger Event (Not Mutually Exclusive)					
	No Trigger Event	Increase in Earnings	Increase in Other Income	Increase in Family Size	Decrease in Family Size	Any Trigger
SNAP Policy Variables, *continued*						
Average Certification Period						
Individuals in States with average certification periods:						
Under 10 months	11.0	22.0	13.8	15.8	25.1	18.5
Between 10 and 12.9 months	11.9	18.9	15.6	16.3	33.6	18.2
At least 13 months	10.4	17.6	13.3	14.0	25.6	16.2
Total Federal and State Outlays for SNAP Outreach						
Individuals in States with:						
Fiscal year federal outlays of $0	12.0	19.2	15.7	14.7	24.3	18.0
Fiscal year federal outlays between $1 and $500,000	11.5	20.8	13.1	18.8	31.5	18.0
Fiscal year outlays greater than $500,000	10.8	18.6	14.3	14.6	29.0	17.3
Sample Size	21,932	3,458	2,372	420	761	6,354

Universe: All SNAP participants in spells underway in December 2008 (common month of second wave). Spell start month can precede panel month 1; spells can be completed in panel months 1-53.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA “Characteristics of SNAP Households” reports, FY 2009-2012.

Notes: [a] Categories are race *alone*; respondents who reported multiple races are in the Other, Non-Hispanic category.

[b] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[c] "High poverty” neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[d] "Low-income” neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[e] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[f] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets.

D. Re-entry into SNAP

Re-entry is the final stage of SNAP participation dynamics that we examine.[47] In the entry analysis in Section II A, we noted that about half of all adults entering SNAP had prior participation spells as adults. In this section, we focus on all individuals who started a new SNAP spell during the panel period and exited before the end of the panel period. The questions we address are:

- What proportion of participants who exit SNAP return to the program within six months, within a year, or within two years? What is the median time off SNAP between participation spells? How do re-entry patterns vary among different subgroups?
- Do re-entry rates vary by income level?
- How do the answers to the above research questions compare to the findings in the studies for earlier periods?

Once again, we use life tables, but in this case we examine the duration of spells off SNAP following a new spell of participation. An "off spell" is a period of time when a person who has received SNAP is not participating in the program. An off spell begins when a person leaves the program; the somewhat counter-intuitive exit rate from these off spells actually represents ***re-entry*** into SNAP.

1. Sample and Methods

The sample consists of individuals who started a new SNAP spell during the panel period and exited before the end of the panel period. Individuals could contribute more than one observation to the analysis. The data consist of 7,743 off spell observations, contributed by 5,506 unique individuals. Any time off SNAP that began in or after month 4 and before month 55 of the panel is included in the sample—98 percent of off spells began in this time frame. About 48 percent of these off spell observations are right-censored, which simply means that an individual who had left SNAP was still off of the program when the study period ended. As in all of the life tables, we use information we have about the length of an off spell, while ignoring information we do not have. For example, if an individual had a new spell on SNAP, left the program, and stayed off for the last 12 months of the study period, we use only the fact that the individual did not re-enter the program within his or her first 11 months off the program. We then ignore this person beyond month 12 of the re-entry life table. Subgroups for off spells and re-entry rates are determined as of the month before the off spell began.

A challenge in analyzing SNAP re-entry in prior studies was the limited number of months for which an individual is in the SIPP panel. When the panel is shorter, there is less time in

[47] This re-entry analysis overlaps to some extent with the entry analysis presented in Section A, since much of the entry analysis was not limited to those who had never previously received SNAP benefits. The entry analysis used information from some individuals who re-entered SNAP. However, it did not use information regarding when individuals had last exited the program and did not analyze the duration of time to re-entry. In the re-entry analysis in this section, by contrast, we analyze the duration of time between when the individuals exited the program and when (and if) they re-entered.

which to observe an individual exit and re-enter SNAP. The 2008 SIPP panel is almost two years longer than the 2004 panel used in Mabli et al. (2011a), which allows more meaningful conclusions to be drawn from the analysis of re-entry. In addition, our analysis shows that re-entry rates fell off rapidly during the first 24 months of off spells, and even more so within the first 36 months of off spells, suggesting that most SNAP participants who re-entered the program did so within two or three years of exiting.

2. SNAP Re-entry in the 2008 Panel and Comparisons Over Time

As was the case in previous studies, many respondents in our SIPP sample returned to SNAP after exiting. Half of those who exited returned within 16 months, and 59 percent returned within two years (Table II.27). Of those returning within two years, more than half (31 percent) had already returned within six months of their exit. About two thirds (66 percent) returned within three years and 69 percent returned within four years. Of those who ended a participation spell, 47 percent re-entered during their first year off the program and another 12 percent re-entered during the second year.[48]

Table II.27 Re-entry Rates: Life Table Analysis of Off-SNAP Spells, 2008 SIPP Panel

Month	Number of Off Spells at Beginning of Month	Number In-Sample in Following Month	Number Re-entering During Following Month	Survivor Rate	Hazard Rate	Cumulative Re-entry Rate	Standard Error of Survivor Rate
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	55,461,285	55,239,579	0	100.0	0.0	0.0	0.1
2	55,239,579	55,044,801	2,523,279	95.4	4.6	4.6	0.3
3	52,521,522	51,668,944	2,558,749	90.7	5.0	9.3	0.4
4	49,110,195	46,465,548	8,990,841	73.1	19.3	26.9	0.5
5	37,474,707	36,995,946	978,274	71.2	2.6	28.8	0.6
6	**36,017,672**	**35,701,344**	**1,156,995**	**68.9**	**3.2**	**31.1**	**0.6**
7	34,544,349	33,630,662	754,513	67.4	2.2	32.6	0.6
8	32,876,149	30,616,286	3,225,648	60.3	10.5	39.7	0.6
9	27,390,638	27,088,872	645,370	58.8	2.4	41.2	0.6
10	26,443,502	26,077,958	464,367	57.8	1.8	42.2	0.6
11	25,613,591	25,282,582	603,967	56.4	2.4	43.6	0.6
12	**24,678,615**	**23,055,998**	**1,478,190**	**52.8**	**6.4**	**47.2**	**0.6**
13	21,577,808	21,340,846	348,510	51.9	1.6	48.1	0.6
14	20,992,336	20,590,646	362,879	51.0	1.8	49.0	0.6
15	20,227,767	19,902,455	338,656	50.1	1.7	49.9	0.6
16	**19,563,799**	**18,136,018**	**888,535**	**47.7**	**4.9**	**52.3**	**0.5**
17	17,247,483	16,981,066	285,563	46.9	1.7	53.1	0.5
18	16,695,503	16,466,731	344,093	45.9	2.1	54.1	0.5

Table continues

[48] As in the life tables of SNAP spell lengths in Section B, because the samples on which the re-entry rates are based decline as the duration increases, the estimates of the hazard rates become less precise as duration rises.

Table II.27, *continued*

Month	Number of Off Spells at Beginning of Month	Number In-Sample in Following Month	Number Re-entering During Following Month	Survivor Rate	Hazard Rate	Cumulative Re-entry Rate	Standard Error of Survivor Rate
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
19	16,122,637	15,770,357	152,707	45.5	1.0	54.5	0.5
20	15,617,650	14,492,245	718,967	43.2	5.0	56.8	0.5
21	13,773,279	13,541,456	75,382	43.0	0.6	57.0	0.5
22	13,466,075	13,183,973	118,361	42.6	0.9	57.4	0.5
23	13,065,613	12,812,847	127,609	42.1	1.0	57.9	0.5
24	**12,685,238**	**11,599,602**	**365,863**	**40.8**	**3.2**	**59.2**	**0.5**
25	11,233,738	10,973,311	69,804	40.6	0.6	59.4	0.5
26	10,903,508	10,515,705	75,301	40.3	0.7	59.7	0.4
27	10,440,404	10,210,988	88,258	39.9	0.9	60.1	0.4
28	10,122,730	8,846,138	256,433	38.8	2.9	61.2	0.4
29	8,589,705	8,418,476	209,498	37.8	2.5	62.2	0.4
30	8,208,978	7,844,989	83,816	37.4	1.1	62.6	0.4
31	7,761,172	7,563,323	132,475	36.7	1.8	63.3	0.4
32	7,430,848	6,593,787	296,089	35.1	4.5	64.9	0.4
33	6,297,698	6,071,125	37,400	34.9	0.6	65.1	0.4
34	6,033,725	5,844,700	0	34.9	0.0	65.1	0.3
35	5,844,700	5,543,550	83,378	34.3	1.5	65.7	0.3
36	**5,460,172**	**4,636,986**	**57,742**	**33.9**	**1.2**	**66.1**	**0.3**
37	4,579,244	4,404,304	0	33.9	0.0	66.1	0.3
38	4,404,304	4,179,189	0	33.9	0.0	66.1	0.3
39	4,179,189	3,962,245	68,737	33.3	1.7	66.7	0.3
40	3,893,508	3,083,696	59,094	32.7	1.9	67.3	0.2
41	3,024,601	2,942,140	0	32.7	0.0	67.3	0.2
42	2,942,140	2,734,422	5,026	32.6	0.2	67.4	0.2
43	2,729,396	2,567,504	0	32.6	0.0	67.4	0.2
44	2,567,504	1,958,067	78,609	31.3	4.0	68.7	0.2
45	1,879,458	1,752,913	12,624	31.1	0.7	68.9	0.2
46	1,740,289	1,618,313	5,960	31.0	0.4	69.0	0.2
47	1,612,353	1,377,810	0	31.0	0.0	69.0	0.1
48	**1,377,810**	**1,048,079**	**0**	**31.0**	**0.0**	**69.0**	**0.1**
49	1,048,079	914,832	0	31.0	0.0	69.0	0.1
50	914,832	706,772	0	31.0	0.0	69.0	0.1
51	706,772	521,487	9,227	30.4	1.8	69.6	0.0

Universe: Individuals with at least one new SNAP spell that ended during the panel. An “off spell” (the interval between leaving SNAP and rejoining the program) begins in or after panel month 4 and before panel month 55.

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Notes: Column (a) represents the number of off spells that have lasted at least the indicated number of months, regardless of when the spell first started. Column (b) indicates the number of the spells from (a) that we continue to observe in the following month (that is, spells that are not right censored). Column (c) is the number of individual in off spells from (b) that re-enter the SNAP in the following month, thus ending their off spell. The hazard rate (e) is 100*(c)/(b). The cumulative exit rate (f) is sum of the previous row’s

cumulative exit rate and the product of the current row's hazard rate and previous row's survivor rate, divided by 100.

Rows appearing in bold type are discussed in the narrative.

Similarly, Gleason et al. (1998) found that in the early 1990s, 42 percent re-entered in their first year off the program and 11 percent re-entered in their second year; Cody et al. (2007) found that 45 percent re-entered in their first year off and 10 percent re-entered in the second year in the early 2000s; and Mabli et al. (2011a) found in the mid-2000s that 42 percent re-entered in their first year off and 11 percent re-entered in the second year (Figure II.10a). However, the median time to re-entry fell from 20 months in the mid-2000s to 16 months in the 2008 to 2012 time period (Figure II.10b).

Figure II.10a Percentages Re-entering SNAP, Comparisons Over Time

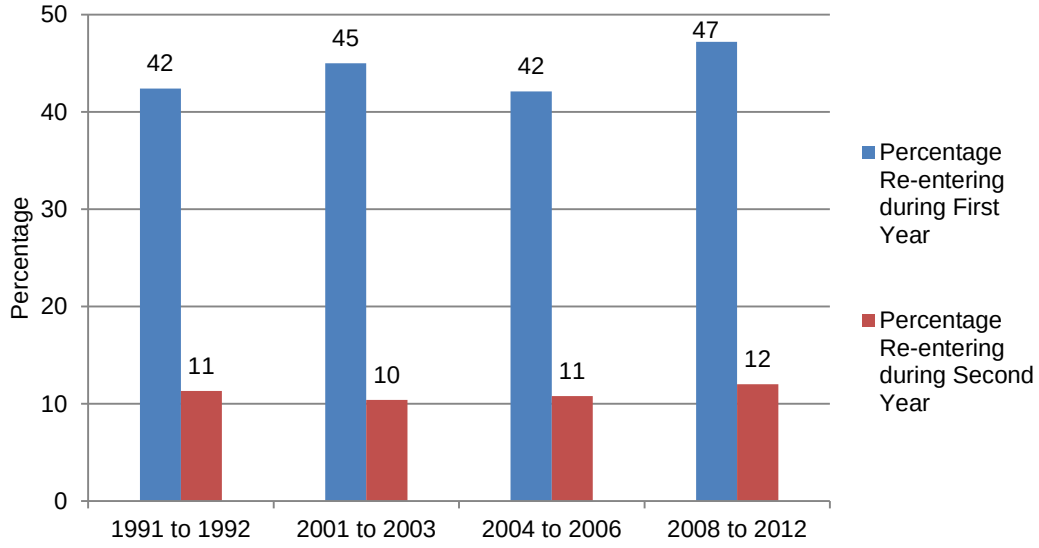
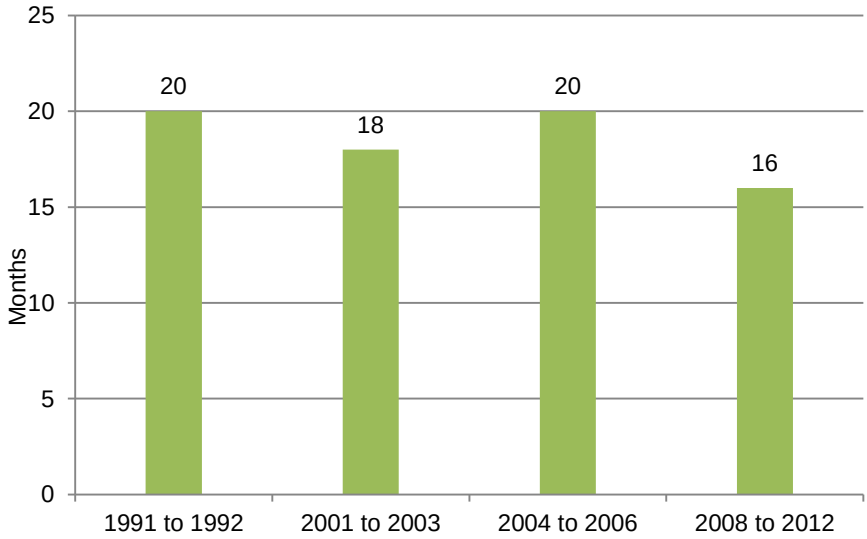


Figure II.10b Median Time to SNAP Re-entry, Comparisons Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006; Cody et al. (2007) for 2001–2003; Gleason et al. (1998) for 1991–1992.

3. SNAP Re-entry, by Subgroup

Individuals who had long participation spells also tend to have had high re-entry rates. In our subgroup analysis for re-entry, we measure the subgroup characteristics based on the original spell that preceded their nonparticipation spell (Table II.28). Among individuals in the poorest families (those with monthly income under 50 percent of poverty in their nonparticipation spell), more than three-fifths (63 percent) re-entered within one year of exiting, and more than three-quarters (78 percent) re-entered within two years of exiting. However, among those who lived in families with income at least two times the poverty line, less than half (46 percent) re-entered within two years. Similarly, we find that individuals in families that had no earners were likely to re-enter SNAP sooner than those in families that had earners.

We also see substantial differences in re-entry rates by age and by family composition. Half of the individuals in families with children re-entered SNAP within 12 months of exiting. In contrast, it took two years for half of the individuals living in families without children to re-enter after exiting. Adults living in families with children and married adults had longer median off-SNAP lengths (20 months) than those in families with children and single adults or multiple unmarried adults (12 months for each group).

The elderly are an exception to the general pattern of longer participation spells being associated with quick re-entry. Although elderly individuals tended to have long participation spells, once they exited the program, they more often did not re-enter compared with nonelderly adults (49 percent re-entered the program within two years, compared to 57 percent of nonelderly adults).[49] It could be that the elderly individuals moved in with other family members who could support them or made other financial arrangements that did not lend to re-entering SNAP. However, this gap between the two year re-entry rates for elderly adults and nonelderly adults is much narrower than it was in the 2004 SIPP panel, where 33 percent of elderly adults re-entered within two years, compared with 49 percent of nonelderly adults (Mabli et al., 2011a).

Re-entry rates also appear to be correlated with neighborhood characteristics and SNAP policies. Sixty-five percent of individuals living in high poverty neighborhoods re-entered within two years, compared with 54 percent of individuals not living in high poverty neighborhoods. Individuals in States that offer neither broad-based categorical eligibility nor an exclusion of all or most vehicles when determining asset eligibility for SNAP had longer spells of nonparticipation before re-entering the program. While half of those exiting SNAP re-entered within 15 months among individuals in States with broad-based categorical eligibility policies, it took 28 months for half of exiters in States that exclude one or fewer vehicles per SNAP unit to re-enter SNAP. There were no substantial differences in the median re-entry rate among States that differ in average SNAP certification period or total federal and State outlays for SNAP outreach.

[49] Some elderly individuals could die after they exit the program. Any individual who exits the program and dies six months later after having never re-entered the program would be counted as not having re-entered for five months in the re-entry life table analysis and then ignored in the analysis thereafter. Whether such a person would have re-entered the program had they lived cannot be measured.

Table II.28 SNAP Re-entry Rates by Subgroup, 2008 SIPP Panel

Subgroup	Sample Size	Median Time to Re-entry (Months)	Cumulative Re-entry Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
All Individuals	7,553	16	26.9	47.2	59.2	
Family Composition						171.1***
Individuals in families with children	5,317	12	29.2	50.9	62.3	
Adults in families with children and one adult	393	12	32.5	54.0	61.0	
Children in families with children and one adult	746	8	39.0	61.1	67.1	
Adults in families with children and multiple adults	750	12	26.7	52.8	67.8	
Children in families with children and multiple adults	505	9	37.1	58.1	70.6	
Adults in families with children and a married head	1,513	20	21.0	41.9	54.2	
Children in families with children and a married head	1,396	12	29.6	50.1	62.7	
Children in child-only families	14	4	51.8	63.5	80.5	
Individuals in families without children	2,236	24	20.9	37.9	51.3	
Individuals in families with elderly members	953	28	20.2	36.2	48.4	
Elderly members living alone	135	21	21.1	29.7	55.8	
Elderly members living with other elderly individuals	150	16	27.1	46.9	53.2	
Elderly members living with nonelderly individuals	641	28	18.5	35.7	46.6	
Individuals in families with disabled members	483	18	23.5	39.4	54.9	
Individuals in families without any elderly or disabled members	800	23	20.3	38.6	51.9	
Age and Disability						29.4***
Nonelderly disabled adults	708	15	28.0	48.2	60.1	
Nonelderly nondisabled childless adults	1,060	31	17.9	34.3	47.0	
Age						119.2***
Children (under age 18)	2,661	11	34.0	54.9	65.6	
Nonelderly adults (age 18 - 59)	4,054	17	23.4	43.8	56.5	
Elderly adults (age 60 and over)	838	26	19.6	36.1	49.1	

Table continues

Table II.28, *continued*

Subgroup	Sample Size	Median Time to Re-entry (Months)	Cumulative Re-entry Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Sex						10.7***
Male (age 18 and over)	2,088	20	22.2	39.9	52.5	
Female (age 18 and over)	2,804	16	23.5	45.5	58.2	
Race/Ethnicity [a]						46.8***
White, Non-Hispanic	3,405	19	23.9	42.2	54.0	
African American, Non-Hispanic	1,585	12	32.2	51.3	64.3	
Hispanic, all races	1,962	12	28.9	51.6	60.9	
Asian, Non-Hispanic	179	16	17.4	42.9	63.9	
Other, Non-Hispanic	422	14	20.6	48.5	67.8	
Education						94.5***
Individuals in families with high school graduates	6,550	16	25.3	45.0	57.4	
Individuals in families with no high school graduates	1,003	8	37.2	61.2	70.5	
Citizenship						
Citizen	6,955	16	26.8	47.1	59.3	
Noncitizen	598	15	27.3	49.0	58.2	
Citizen children living with noncitizen adults in the family	564	8	33.8	58.5	70.2	14.2***
Adults in families with citizen adults and citizen children	2,373	16	24.4	46.2	58.8	13.0***
Children in families with citizen adults and citizen children	2,293	11	33.4	54.1	65.2	
Adults in families with noncitizen adults and citizen children	238	12	24.1	53.2	60.3	
Children in families with noncitizen adults and citizen children	326	8	35.3	59.9	66.6	
Individuals by Family Poverty Status						297.3***
Under 50 percent of poverty	749	8	35.0	62.5	78.2	
50 to under 100 percent of poverty	1,627	8	38.1	60.6	69.9	
100 to 130 percent of poverty	1,074	16	26.6	47.3	59.6	
More than 130 to under 200 percent of poverty	1,895	19	21.1	41.3	53.7	
200 or more percent of poverty	1,841	35	17.8	34.0	45.6	

Table continues

Table II.28, *continued*

Subgroup	Sample Size	Median Time to Re-entry (Months)	Cumulative Re-entry Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Presence of Income						
Individuals in families with no income	368	12	35.2	52.0	67.6	38.3***
Individuals in families with income	7,185	16	26.4	47.0	58.7	
Presence of Earnings						43.1***
Individuals in families with earnings	5,459	17	24.5	44.8	56.1	
Individuals in families without earnings	2,094	12	33.5	54.0	67.6	
Presence of TANF						42.6***
Individuals in families with TANF	461	8	35.5	63.3	75.8	
Individuals in families without TANF	7,092	16	26.2	46.1	58.0	
Other Income						
Individuals in families with Social Security income	2,281	16	24.4	45.0	59.8	42.2***
Individuals in families without Social Security income	5,272	15	27.8	48.1	59.0	
Individuals in families with SSI	1,332	12	31.6	54.8	68.1	
Individuals in families without SSI	6,221	16	25.8	45.6	57.3	
Individuals in families with unemployment compensation	696	19	25.1	43.5	54.2	4.6**
Individuals in families with no unemployment compensation	6,857	15	27.0	47.6	59.7	
Mortgage Foreclosure Status (during study period)						
Individuals in housing units affected by foreclosure event	519	16	26.4	45.6	57.4	
Individuals not in housing units affected by foreclosure event	7,034	16	26.9	47.4	59.3	
Characteristics of Individual's Neighborhood [b]						
Individuals living in high poverty neighborhood [c]	3,658	12	31.8	53.8	65.4	69.6***
Individuals not living in high poverty neighborhood [c]	3,623	20	22.4	41.9	53.9	

Table continues

Table II.28, *continued*

Subgroup	Sample Size	Median Time to Re-entry (Months)	Cumulative Re-entry Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
Characteristics of Individual's Neighborhood, *continued*						
Individuals living in low-income neighborhood [d]	3,745	12	31.3	53.5	66.7	78.0***
Individuals not living in low-income neighborhood [d]	3,536	20	22.6	42.0	52.3	
Individuals living in high SNAP participation neighborhood	3,618	11	30.9	53.9	66.3	85.7***
Individuals not living in high SNAP participation neighborhood	3,935	20	23.4	41.6	53.1	
Geographic Access to Food [e]						
Individuals in low food access census tracts	3,003	18	23.7	43.7	56.4	5.1**
Individuals not in low food access census tracts	4,278	12	29.3	50.4	61.6	
Individuals in low-income census tracts with low food access	1,752	13	26.7	49.9	64.2	11.6***
Individuals not in low-income/low-food access tracts	5,529	16	27.1	47.1	58.2	
SNAP Policy Variables						
Vehicle/Categorical Eligibility Rules						
Individuals in States:						
Offering broad-based categorical eligibility	5,373	15	27.1	47.5	60.2	
Excluding all or most vehicles	1,920	16	26.8	48.1	58.6	
Excluding one or fewer vehicles for SNAP unit [f]	256	28	19.2	34.2	46.6	
Average Certification Period						
Individuals in States with average certification periods:	1,997	16	24.8	46.3	57.9	
Under 10 months	3,100	15	27.1	47.5	59.9	
Between 10 and 12.9 months	2,456	15	28.2	47.5	59.1	
At least 13 months	5,373	15	27.1	47.5	60.2	

Table continues

Table II.28, *continued*

Subgroup	Sample Size	Median Time to Re-entry (Months)	Cumulative Re-entry Rates			Log-Rank Statistic to Test Differences across Subgroups
			4 Months or Less	12 Months or Less	24 Months or Less	
SNAP Policy Variables, *continued*						
Total Federal and State Outlays for SNAP Outreach						
Individuals in States with:						
Fiscal year federal outlays of $0	1,443	16	28.0	47.0	56.9	
Fiscal year federal outlays between $1 and $500,000	1,786	16	25.8	45.9	57.4	
Fiscal year outlays greater than $500,000	4,324	15	26.9	47.8	60.9	

Universe: Individuals with at least one new SNAP spell that ended during the panel. An “off spell” (the interval between leaving SNAP and rejoining the program) begins in or after panel month 4 and before panel month 55.

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA “Characteristics of SNAP Households” reports, FY 2009-2012.

Notes: Subgroups assigned as of the month before an off spell began.

The log-rank test compares the estimated monthly hazard rate to the expected monthly hazard rate where the expected rate is calculated based on the null hypothesis that the hazard rate is the same for each time period of the subgroup category. We do not reject the null hypothesis that the distributions are the same across categories if the aggregate difference between the estimated and expected hazard rate is small relative to the aggregate variance of the difference. We reject the null hypothesis if the difference is large. Probabilities: ** represents p≤ 0.05; *** represents p≤ 0.01, Chi-square test.

[a] Categories are race *alone*; respondents who reported multiple races are in the Other, Non-Hispanic category.

[b] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[c] "High poverty” neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[d] "Low-income” neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[e] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[f] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets.

E. Summary Measures of SNAP Participation

Thus far in the analysis, we have examined each step of a participant's contact with SNAP: entry, duration on the program, exit, and, finally, re-entry. Now, we explore the total experience with the program, and how it has changed over time, using several additional measures:

- ***Total time on***. What proportion of the 56-month period covered by the SIPP panel period does an individual spend on SNAP? What participant characteristics distinguish those who spend a significant proportion of the panel time on SNAP from those who only use the program for a small proportion of the panel time?
- ***Spell type***. What proportion of the caseload has a single short spell, single medium-term spell, single long spell, or more than one spell during the SIPP panel period?
- ***Replacement Rates and Exit Rates***. What is the number of new SNAP entrants in a month divided by the number of participants in the previous month's caseload? And how many SNAP participants exit the program each month? What dynamics explain the participation growth that occurred from 2008 to 2012?
- ***Turnover Rate***. What is the turnover rate (the ratio of all participants ever on SNAP during the year over the average monthly number of participants) for SNAP participants in each year covered by the 2008 SIPP panel? Did the turnover rate change between the first few waves of the panel and the later waves of the panel, when the economy was starting to recover? Were annual turnover rates in the 2008 SIPP panel different from those in prior panels?

These additional measures of program dynamics help to summarize individual experiences in SNAP and to interpret aggregate caseload trends. In particular, they address an important policy research question of the current study: what dynamics explain the participation growth that occurred from 2008 to 2012? We answer this question below by decomposing the participation growth into changes over time in several summary measures.

1. Total Time on SNAP

The total time during which a participant receives benefits over the course of the panel period provides an additional measure of an individual's SNAP participation behavior. From our earlier analysis of the entry cohort, we know that the median duration is twelve months. However, we also know that over 25 percent of participants that leave the program return within four months and over 50 percent return within sixteen months. Thus, the measure of spell duration alone may provide misleading information about their total reliance on the program. Because a measure of

the total time in the program combines information about an individual's spell length and re-entry, it provides a more accurate measure of program dependence.[50]

We calculate the total time on as the number of months during the SIPP panel period that each individual received SNAP benefits. Table II.29 shows the distribution for the full sample and for those with at least one month of participation.

a. Total Time on SNAP in the 2008 Panel

Twenty-eight percent of the full at-risk population received SNAP at some point during the 56-month panel period. Of those who participated, 13 percent had contact with the program for less than five months, and 23 percent had contact with the program for less than nine months. Conversely, 25 percent of those who received SNAP did so for at least 49 of the 56 months of the panel period. If we also add the time spent in SNAP before the panel period, we find that spell-length for an additional 6 percent of those who participated at least once during the panel lasted at least 49 months.[51]

Table II.29 also shows that the median total time in SNAP among participants during the panel period was 27 out of a possible total of 56 panel months. Thus, the combined time on SNAP due to initial entry and program re-entry led the average participant to spend roughly 50 percent of the 56-month period in the program, or over 2 years of the May 2008 through December 2012 time period.

[50] The measure of total time on SNAP incorporates recipiency history information from Wave 1 and, thus, includes the time spent in pre-panel participation spells. The recipiency history does not have the end dates for spells that are completed prior to the panel, nor does it have the start date for all spells that are started prior to the panel. Because it has the start date for the respondent's first SNAP spell, this duration information is used only for those respondents who are participating at the start of the SIPP panel. Furthermore, our total-time-on measure is still limited by right censoring, because we do not know when many of the spells will end. This will lead us to underestimate the dependence on the program by some participants. However, the use of the available recipiency history information allows us to construct a more comprehensive measure.

[51] The information concerning previous participation tells us the start date of the spell that was in progress in Month 1 of the 2008 SIPP panel, not about start and end dates of spells that ended prior to the sample. Thus, in Table II.29 we do not see an increase in the number receiving SNAP benefits, but rather in the length of time that some participants received SNAP benefits.

Table II.29 Proportion of Panel Period on SNAP: Total Time on SNAP for All Individuals and SNAP Participants, 2008 SIPP Panel

	Excluding Pre-Panel Data		Including Pre-Panel Data	
Number of Months	All Individuals (Percentages)	Individuals with at Least One Month of SNAP During Panel Period (Percentages)	All Individuals (Percentages)	Individuals with at Least One Month of SNAP During Panel Period (Percentages)
No Receipt of SNAP in Panel Period	72.0	0.0	72.0	0.0
1 to 4	3.7	13.3	3.5	12.5
5 to 8	2.8	9.9	2.6	9.4
9 to 12	2.0	7.3	1.9	6.9
13 to 16	1.7	6.2	1.7	6.0
17 to 20	1.9	6.8	1.7	6.2
21 to 24	1.3	4.7	1.3	4.6
25 to 28	1.3	4.6	1.2	4.1
29 to 32	1.3	4.6	1.2	4.5
33 to 36	1.3	4.6	1.1	3.9
37 to 40	1.2	4.2	1.0	3.4
41 to 44	1.2	4.3	1.0	3.7
45 to 48	1.3	4.7	1.0	3.6
49+	6.9	24.9	8.7	31.0
Mean months	8.0	28.7	12.6	45.0
Median months	0.0	27.0	0.0	29.0
Sample Size	34,839	9,336	34,839	9,336

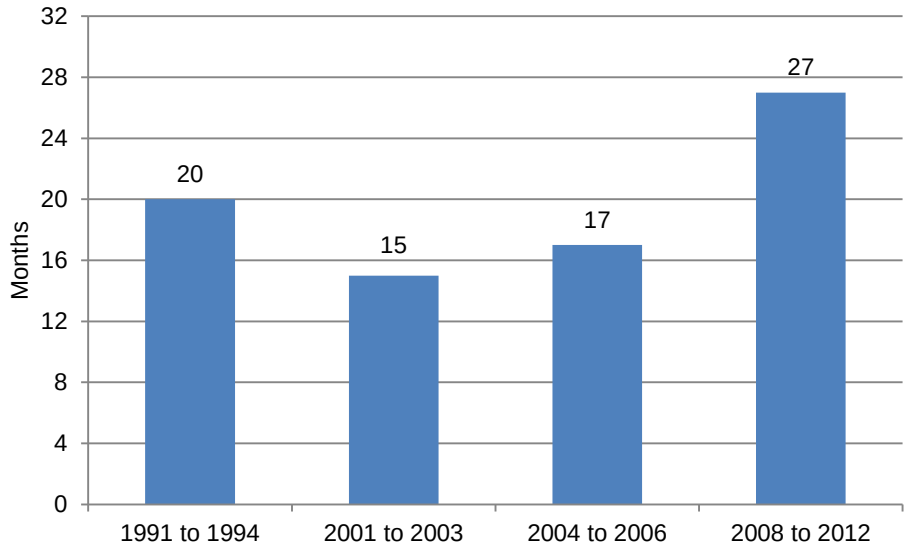
Universe: Individuals at risk during the panel period (those with income <300% of poverty at some point during panel).

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

b. Changes in Total Time on SNAP Across Recent SIPP Panels

The median total time on SNAP has fluctuated in recent panels, in part because the panels have varied in length and in part because SNAP spell lengths have generally increased. The median was 20 months in the early 1990s (Gleason et al., 1998) and 15 months in the early 2000s (Cody et al., 2007), before bouncing back to 17 months out of a possible 32 months in the mid-2000s and rising to 27 months out of a possible 56 months in the 2008 to 2012 panel (Figure II.11).[52] In addition to the differences in panel length, the variation in these estimates is due to the net effects of two elements of program dynamics: how long individuals spend *on* the program and how long participants who exit the program spend *off* the program before re-entering. Relative to the 2004 panel, individuals who entered SNAP in the 2008 panel stayed on SNAP longer (median of 12 months versus 10 months) and, once exited, re-entered the program more quickly (median of 16 months versus 20 months). Furthermore, participants who were participating in SNAP in the first wave of the panel had longer median SNAP spells—about 8 years in the 2008 panel, compared to 7 years in the 2004 panel.

Figure II.11 Total Time on SNAP for Individuals Participating in Panel Period, Comparisons Over Time (Median Number of Months)



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006; Cody et al. (2007) for 2001–2003; Gleason et al. (1998) for 1991–1994.

[52] The length of the SIPP panel period can affect the median total time on estimate if individuals enter SNAP disproportionately toward the end, relative to the beginning, of the SIPP panel, thereby right-censoring the SNAP spell length for these individuals. Because the four SIPP panel periods considered above differ in length, this potential bias should be acknowledged when comparing the four estimates of total time on SNAP.

c. Total Time on SNAP Among Subgroups in the 2008 Panel

The percentages of at-risk individuals who received SNAP at some point during the 2008 SIPP panel period varied greatly across subgroups (Table II.30). For individuals in families with children, 36 percent received SNAP at some point in the panel, compared with 18 percent for those in families without children. As we found in prior analyses, SNAP receipt in the 2008 panel decreases by age, with 38 percent of children, 26 percent of non-elderly adults, and 14 percent of elderly adults receiving SNAP in the panel. The differential by income is even more striking, with SNAP receipt in the panel ranging from 60 percent of individuals in families with income below 50 percent of poverty and 61 percent of individuals in families with income between 50 and 100 percent of poverty to 12 percent of individuals in families with income above 200 percent of poverty. The percentage of individuals without income participating in SNAP during the panel period, at 50 percent, was nearly twice as large as the percentage of individuals with income, and the difference was even larger for individuals in families with SSI versus those without SSI (70 percent and 25 percent, respectively). A group that overlaps with SSI recipients, nonelderly disabled adults, received SNAP at some point during the panel at a rate of 59 percent, compared with 16 percent for nonelderly nondisabled childless adults. A higher percentage of individuals in high poverty neighborhoods spent time on SNAP at some point during the panel period (46 percent), compared with the percentage for individuals not living in these neighborhoods (20 percent). Finally, the percentage of individuals in States offering broad-based categorical eligibility who received SNAP during the 2008 to 2012 time period (31 percent) was higher than the percentage participating in States without these policies (26 percent).

There were much smaller differences in total time on SNAP for some subgroups. The difference in the percentage receiving SNAP among those in housing units affected by mortgage foreclosure during the study period versus those not affected was only 3 percentage points. Likewise, differences were minimal by residence in States with different average certification periods and in States with different federal and State SNAP outreach amounts.

The median total time in SNAP also differed across subgroups (Table II.30). Among individuals receiving at least one month of SNAP benefits during the panel period, nonelderly disabled adults spent among the most time on SNAP, with a median of 44 months. In contrast, individuals in families without any elderly or disabled members spent a median of 16 months on SNAP. The median total time on SNAP decreases as income levels increase. Individuals with income under 50 percent of poverty spent 45 out of 56 months on SNAP and individuals with income over 200 percent of poverty spent about 12 months on SNAP. There are also sizable differentials by education (24 and 40 months respectively, for individuals in families with and without a high school graduate); by earnings (21 and 40 months respectively, for individuals in families with and without earnings); by SSI (37 and 24 months, respectively, for individuals with and without SSI); by presence of unemployment compensation (21 and 28 months, respectively, for individuals with and without unemployment compensation); and by incidence of a mortgage

foreclosure event (21 and 28 months, respectively, for individuals affected and not affected by a foreclosure event).

Table II.30 Proportion of Panel Period on SNAP: Total Time on SNAP for SNAP Participants and Subgroups, 2008 SIPP Panel

	All Individuals		Individuals with at Least One Month of SNAP During Panel Period	
Subgroup	Sample Size	Percentage Receiving SNAP in Panel	Sample Size	Median (Months)
All Individuals	34,839	28.0	9,336	27
Family Composition				
Individuals in families with children	18,478	35.6	6,431	28
Adults in families with children and one adult	1,148	54.1	621	44
Children in families with children and one adult	2,187	61.2	1,319	42
Adults in families with children and multiple adults	1,007	51.4	517	24
Children in families with children and multiple adults	872	64.9	561	28
Adults in families with children and a married head	6,452	24.8	1,579	20
Children in families with children and a married head	6,704	26.6	1,805	24
Children in child-only families	108	27.6	29	15
Family Composition, *continued*				
Individuals in families without children	16,361	18.4	2,905	21
Individuals in families with elderly members	8,575	15.4	1,255	22
Elderly members living alone	2,242	16.0	369	48
Elderly members living with other elderly individuals	3,516	7.6	244	21
Elderly members living with nonelderly individuals	2,704	23.8	622	16
Individuals in families with disabled members	1,399	48.5	678	40
Individuals in families without any elderly or disabled members	6,387	15.7	972	16
Age and Disability				
Nonelderly disabled adults	1,793	59.2	1,030	44
Nonelderly nondisabled childless adults	7,462	15.7	1,150	14
Age				
Children (under age 18)	9,871	38.4	3,714	29
Nonelderly adults (age 18 - 59)	17,169	26.2	4,484	24
Elderly adults (age 60 and over)	7,799	14.3	1,138	26
Sex				
Male (age 18 and over)	16,446	25.9	4,084	24
Female (age 18 and over)	18,393	29.9	5,252	29

Table continues

Table II.30, *continued*

Subgroup	All Individuals: Sample Size	All Individuals: Percentage Receiving SNAP in Panel	Individuals with at Least One Month of SNAP During Panel Period: Sample Size	Individuals with at Least One Month of SNAP During Panel Period: Median (Months)
Race/Ethnicity [a]				
White, Non-Hispanic	22,768	19.6	4,271	24
African American, Non-Hispanic	4,234	50.2	2,085	34
Hispanic, all races	5,486	39.7	2,303	26
Asian, Non-Hispanic	1,171	16.7	213	27
Other, Non-Hispanic	1,180	38.3	464	25
Education				
Individuals in families with high school graduates	31,060	25.1	7,439	24
Individuals in families with no high school graduates	3,779	51.3	1,897	40
Citizenship				
Citizen	32,634	27.7	8,607	28
Noncitizen	2,205	31.5	729	23
Citizen children living with noncitizen adults in the family	1,405	46.2	676	28
Adults in families with citizen adults and citizen children	7,756	31.5	2,378	26
Children in families with citizen adults and citizen children	8,765	37.5	3,194	30
Adults in families with noncitizen adults and citizen children	587	43.1	261	28
Children in families with noncitizen adults and citizen children	814	51.8	432	28
Individuals by Family Poverty Status				
Under 50 percent of poverty	2,281	60.1	1,386	45
50 to under 100 percent of poverty	3,876	61.1	2,319	40
100 to 130 percent of poverty	2,613	44.9	1,175	26
More than 130 to under 200 percent of poverty	6,236	30.4	1,738	19
200 or more percent of poverty	18,723	12.2	2,139	12
Presence of Income				
Individuals in families with no income	1,124	49.5	587	36
Individuals in families with income	33,715	27.2	8,749	26
Presence of Earnings				
Individuals in families with earnings	25,097	25.0	6,071	21
individuals in families without earnings	9,742	37.1	3,265	40

Table continues

Table II.30, *continued*

Subgroup	All Individuals: Sample Size	All Individuals: Percentage Receiving SNAP in Panel	Individuals with at Least One Month of SNAP During Panel Period: Sample Size	Individuals with at Least One Month of SNAP During Panel Period: Median (Months)
Presence of TANF				
Individuals in families with TANF	679	90.5	610	49
individuals in families without TANF	34,160	26.6	8,726	24
Other Income				
Individuals in families with Social Security income	9,746	27.4	2,410	30
Individuals in families without Social Security income	25,093	28.1	6,926	26
Individuals in families with SSI	2,223	70.3	1,549	37
Individuals in families without SSI	32,616	25.1	7,787	24
Individuals in families with unemployment compensation	824	37.2	293	21
Individuals in families with no unemployment compensation	34,015	27.7	9,043	28
Mortgage Foreclosure Status (During Study Period)				
Individuals in housing units affected by foreclosure event	1,672	31.0	521	21
Individuals not in housing units affected by foreclosure event	33,167	27.8	8,815	28
Characteristics of Individual's Neighborhood [b]				
Individuals living in high poverty neighborhood [c]	10,488	45.7	4,603	34
Individuals not living in high poverty neighborhood [c]	22,168	20.2	4,164	23
Individuals living in low-income neighborhood [d]	10,636	45.3	4,629	33
Individuals not living in low-income neighborhood [d]	22,020	20.3	4,138	24
Individuals living in high SNAP participation neighborhood	10,347	46.8	4,661	36
Individuals not living in high SNAP participation neighborhood	24,492	20.6	4,675	20
Geographic Access to Food [e]				
Individuals in low food access census tracts	13,661	26.2	3,393	25
Individuals not in low food access census tracts	19,022	29.3	5,377	30
Individuals in low-income census tracts with low food access	4,924	42.0	1,957	31
Individuals not in low-income/low-food access tracts	27,759	25.8	6,813	28

Table continues

Table II.30, *continued*

Subgroup	All Individuals: Sample Size	All Individuals: Percentage Receiving SNAP in Panel	Individuals with at Least One Month of SNAP During Panel Period: Sample Size	Individuals with at Least One Month of SNAP During Panel Period: Median (Months)
SNAP Policy Variables				
Vehicle/Categorical Eligibility Rules				
Individuals in States:				
Offering broad-based categorical eligibility	12,894	30.8	3,828	28
Excluding all or most vehicles	16,299	26.2	4,076	28
Excluding one or fewer vehicles for SNAP unit [f]	5,645	26.2	1,431	24
SNAP Policy Variables, *continued*				
Average Certification Period				
Individuals in States with average certification periods:				
Under 10 months	10,003	28.7	2,611	28
Between 10 and 12.9 months	16,173	27.1	4,349	24
At least 13 months	8,663	28.8	2,376	28
Total Federal and State Outlays				
Individuals in States with:				
Fiscal year federal outlays of $0	10,118	28.3	2,693	26
Fiscal year federal outlays between $1 and $500,000	7,634	26.1	1,852	25
Fiscal year outlays greater than $500,000	17,087	28.5	4,791	28

Universe: Individuals at risk during the panel period (those with income <300% of poverty at some point during panel).

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2008-2012 ACS; 2010 ERS Food Access Research Atlas; 2008-2011 Census Bureau/RealtyTrac internal foreclosure database. State vehicle/broad-based categorical eligibility rules: Laird & Trippe (2014); Federal and State SNAP outlays: USDA FNS National Data Bank v8.2 Public Use File; Average State certification rates: USDA “Characteristics of SNAP Households” reports, FY 2009-2012..

Notes: Subgroups: Characteristics assigned in month before SNAP spell began.

[b] "Neighborhood" refers to census tract in which individual resides in month prior to SNAP entry.

[c] "High poverty” neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <100% of poverty.

[d] "Low-income” neighborhoods: tracts in which a higher than median percentage of the SNAP population has income <200% of poverty.

[e] "Low access" tract: >500 people or 33% of population lives sizeable distance from nearest large grocery store (>1 mile urban; >10 miles rural).

[f] This row includes individuals in States that (1) exclude one vehicle per SNAP unit; (2) do not exclude vehicles but increase the vehicle asset limit above the federal rules; or (3) use federal vehicle rules when determining assets.

2. Characterizing SNAP Participants by Spell Type

A limitation of the total-time-on measure is that it does not tell us whether individuals participate in SNAP continuously or whether they move on and off the program. An alternative way of summarizing participants' SNAP experiences is to learn more about those who had single spells by identifying individuals as (1) single-spell, short-term participants; (2) single-spell, medium-term participants; (3) single-spell, long-term participants; or (4) multiple-spell participants.

a. Characterizing SNAP Participants by Spell Type in the 2008 Panel

Following the analysis of Mabli et al. (2011a & 2011b) and earlier studies, we define four groups as follows:

- *Single-spell short-term participants* are those with a single participation spell that lasted eight months or less.
- *Single-spell medium-term participants* are those with a single participation spell that lasted between 9 and 23 months
- *Single-spell long-term participants* are those with a single participation spell that lasted 24 months or longer
- *Multiple-spell participants* are those with more than one participation spell during the panel period

We perform this characterization for our cross-sectional sample. The first column of Table II.31 categorizes recipients into single-spell recipients and multiple-spell recipients based on their receipt only in the current panel. As in previous studies, we use the recipiency history information from the SIPP topical module to determine the duration of spells that were in progress at the beginning of the panel period. In the second column, we extend this method to also include spells that both began and ended prior to the panel period. Using this new information leads many single-spell participants in the first column to be classified as multiple-spell participants in the second column.

When excluding spells that ended prior to the start of the 2008 panel period, we found that about one-third (33 percent) of SNAP participants experienced multiple participation spells. Over half of the remaining participants (35 percent of all participants) experienced a single spell of at least two years. About 20 percent experienced only a single short-term spell, and 12 percent experienced a single medium-term spell.

When using pre-panel information on the presence of spells prior to the panel period, we found that over 60 percent of participants had multiple spells. Of those who had single spells, most had either a short spell (eight months or less) or long spell (more than two years).

Table II.31 Characterization of SNAP Participants by Spell Type, 2008 SIPP Panel

Number of Months	Include Pre-Panel Data on Duration of Beginning Spell [a]	Include Pre-Panel Data on Previous Spells and Duration of Beginning Spell [b]
Single-Spell Participants		
Short-Term (1 to 8 Months)	20.3	11.8
Medium-Term (9 to 23 Months)	12.1	7.0
Long-Term (24+ Months)	34.8	20.0
Multiple-Spell Participants	32.8	61.2
Sample Size	9,489	9,489

Universe: All SNAP participants.

Source: Decision Demographics tabulations of the 2008 SIPP Panel..

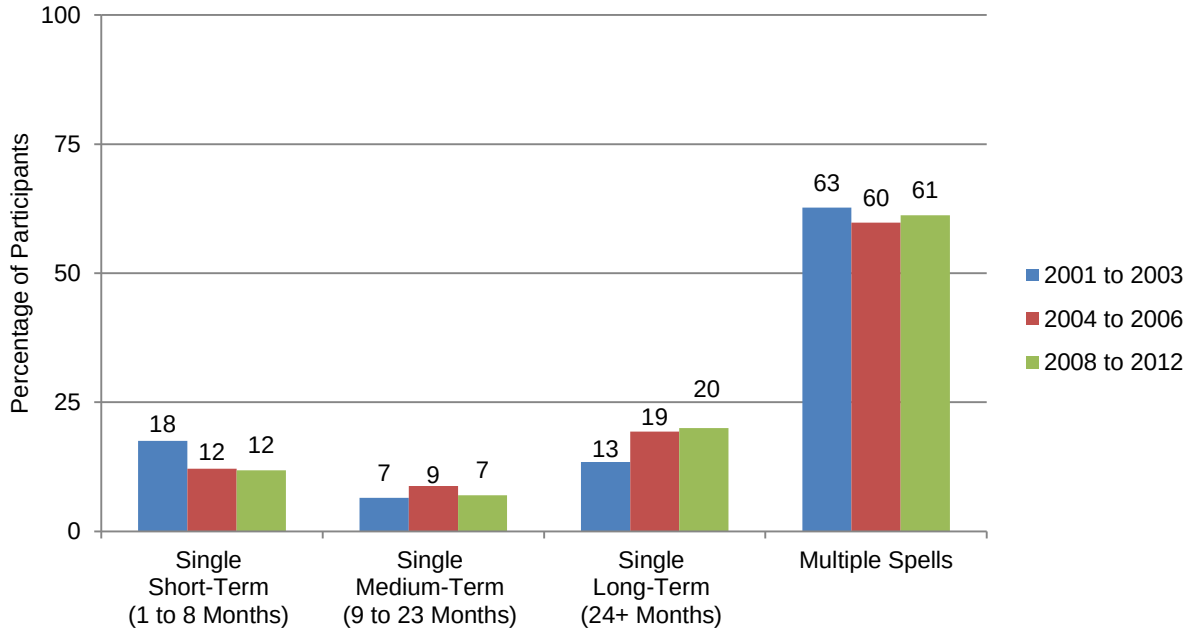
Notes: [a] Pre-panel data are used to determine the duration of the spells that are ongoing at the beginning of the panel; however, pre-panel data about participation in spells that ended before the start of the panel are not included.

[b] Pre-panel data on both spells that were ongoing at the beginning of the panel and spells that ended before the beginning of the panel are included.

b. Changes in the Characterization of SNAP Participants by Spell Type from the Early-2000s to the Mid-2000s and 2008 to 2012 Period

When including information on spells that both began and ended prior to the panel period, we find that the distribution of spell types remained roughly the same across recent SIPP panels. The percentage of SNAP participants with multiple spells decreased from 63 percent in the early-2000s to 60 percent in the mid-2000s (Mabli et al., 2011a) before climbing back up to 61 percent in the 2008 to 2012 period (Figure II.12). Among single-spell participants, there was a sizable shift from short-term spells in the early-2000s to medium- and long-term spells (collectively more than eight months) in the mid-2000s. The distribution remained roughly the same in 2008 to 2012, though the percentage of single-spell participants that had a medium-term spell declined slightly (from 9 percent of all participants to 7 percent).

Figure II.12 Characterizing the Length and Frequency of SNAP Participant Spells, Comparisons Over Time



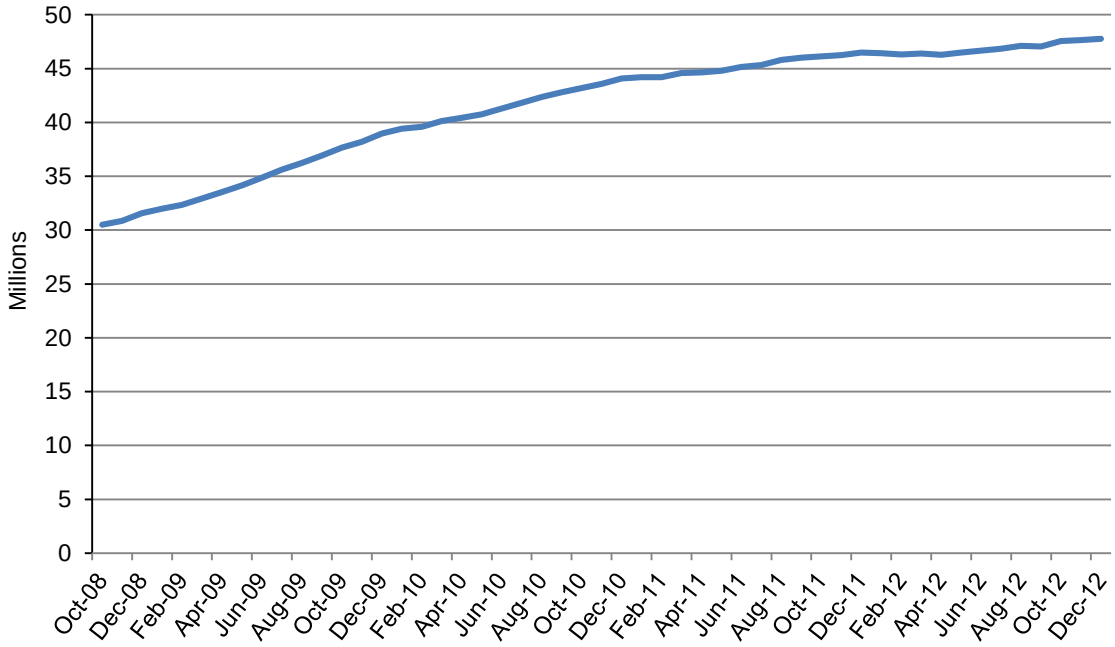
Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006; Cody et al. (2007) for 2001–2003.

3. Decomposition of the SNAP Participation Growth in the 2008 SIPP Panel

The two previous summary measures of SNAP participation were from the point of view of individual participants. We next summarize SNAP participation from the perspective of the program. We first decompose the caseload growth observed over the analysis period to determine what dynamics explain the participation growth that occurred in the 2008 to 2012 study period. Then, in the next section, we examine turnover rates of participants over time.

The number of SNAP participants reached record levels in 2008 to 2012 in the wake of the Great Recession, the general economic downturn, and the ARRA legislation that raised SNAP benefits. Figure II.13 presents the number of SNAP participants from October 2008 to December 2012, excluding those who newly received benefits in response to a disaster. The number of participants increased in nearly each month during this panel period. The increase was greatest from around October 2008 to December 2010, during the time when seasonally adjusted unemployment rates were rapidly rising or at their peak (around 10 percent).[53]

Figure II.13 SNAP Caseload Excluding Participants Newly Receiving Benefits in Response to a Disaster, October 2008 to December 2012



Source: FNS Program Operations Data for 2008 through 2012 adjusted (by Mathematica based on data from FNS) for individuals newly receiving benefits in response to disasters.

[53] http://data.bls.gov/timeseries/LNS14000000, accessed July 22, 2014.

a. Methods

The substantial growth in participants between 2008 and the end of 2012 can be the result of increases in the entry rate and/or decreases in the exit rate. Following the methodology of Mabli et al. (2011), we calculate each month's percentage change in the caseload (the growth rate), replacement rate, and exit rate and average them over the SIPP survey period. Each month's replacement rate, r_t, is defined as the number of entrants, e_t, in month t divided by the total number of participants, p_{t-1}, in month t-1.Each month's exit rate, n_t, is defined as the number of exiters, x_t, in month t (participants in month t-1 not participating in month t) divided by the total number of participants in month t-1, p_{t-1}. Combined, these rates reveal how the caseload changes over time. In each month t, the total number of participants can be calculated as $p_t = p_{t-1} - x_t + e_t$. That is, the number of participants in the current month t is equal to the number of participants in the previous month minus those who exited the program between month t-1 and month t, plus those individuals who entered the program between months t-1 and t. Similarly, the growth rate can be computed as $g_t = r_t - n_t$, with the growth in SNAP participation across two months equal to the replacement rate minus the exit rate. Because the total number of participants in the previous month is in the denominator of both the replacement rate and the exit rate, the growth rate is defined as the difference between the number of new entrants in month t and the number of exiters in month t, relative to the number of participants in the previous month.

We compute the monthly growth rate, replacement rate, and exit rate from October 2008 to December 2012. We then decompose the percentage change in the average monthly growth rate from one calendar year to the next, beginning in 2009.[54] The decomposition allocates the share of the change in growth rate to changes in the replacement rate and exit rate. The shares of the change in the growth rate attributed to the replacement rate and the exit rate sum to 100 percent. When the replacement rate decreases and the exit rate increases, both changes contribute to the decrease in the growth rate and the shares are each between 0 and 100 percent. When changes in the replacement rate and exit rate are moving in the same direction, however, the shares of the change in the growth rate may be below 0 or above 100 percent, reflecting their opposite effect on the growth rate.[55] Throughout the remainder of this section, we only discuss this decomposition if both shares fall between 0 and 100 percent.

[54] We do not discuss changes between the last three months of 2008 and calendar year 2009 because data in 2008 are not available for the full calendar year.

[55] For example, the replacement rate and exit rate both decreased from 2009 to 2010. If the replacement rate had decreased while the exit rate remained constant, the growth rate would have dropped by more than it did. Therefore, in this case, the replacement rate explains a larger drop in the growth rate (127 percent) than what actually occurred. Likewise, if the exit rate decreased while the replacement rate remained constant, the growth rate would have increased. Because the growth rate declined, however, the reduction in the exit rate explained a *negative* share of the decline in the growth rate.

b. Decomposition of Caseload Changes from 2008 to 2012

The average monthly growth rate was positive during the entire span of the panel, but gradually declined from year to year (Table II.32). The average monthly replacement rate decreased over the four calendar year periods, but remained above 3.0, while the average monthly exit rate decreased from 3.2 in 2009 to 2.9 in 2010, and then remained fairly constant for the remainder of the panel.

The decomposition reveals two main findings. First, the growth rate remained positive for the entire duration of the panel because the replacement rate was consistently higher than the exit rate. Second, the slowdown in caseload growth (i.e., the decrease in the positive growth rate) was mostly due to the decrease in the replacement rate. In particular, the decrease in the growth rate from 2009 to 2010 and 2010 to 2011 were entirely explained by the decreasing replacement rates. By contrast, 72 percent of the decrease in the growth rate from 2011 to 2012 was explained by the increase in the exit rate and 28 percent by the decrease in the replacement rate.

Table II.32 Average Monthly SIPP-Based Growth, Replacement, and Exit Rates, 2008–2012

Period	Average Monthly Growth Rate	Average Monthly Replacement Rate	Average Monthly Exit Rate	Percentage Change In Growth Rate (Relative To First Period) Explained By Change In:	
				Replacement Rate	Exit Rate
January 2009–December 2009	1.7	4.9	3.2		
January 2010–December 2010	0.8	3.7	2.9	1.27	-0.27
January 2011–December 2011	0.4	3.2	2.8	1.32	-0.32
January 2012–December 2012	0.2	3.1	2.9	0.28	0.72
October 2008–December 2012	0.9	3.9	2.9		

Universe: Individuals at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period) or receiving SNAP.

Source: Decision Demographics, weighted tabulations of the 2008 SIPP Panel

c. Decomposition of Caseload Increase from 2008 to 2012, by Subgroup

We re-estimated average monthly growth rates, exit rates, and replacement rates, and performed the decomposition analysis, for eight policy relevant subgroups: individuals with and without children; individuals in families with income below 100 percent of poverty or at or above 100 percent of poverty; individuals in families with or without earnings; and individuals in families with or without elderly members. The results are presented in Table II.33.

Individuals in families with income below 100 percent of poverty generally had smaller replacement rates, exit rates, and growth rates than those in families with higher income. In particular, growth rates for individuals in families with income below the poverty rate averaged 0.6 percent across the entire panel, replacement rates averaged 2.8 percent, and exit rates

averaged 2.2 percent, compared with averages of 1.4, 5.4, and 3.8, respectively, for individuals with family income at or above 100 percent of poverty. The lower exit rates support our earlier findings that spell lengths were longer for individuals in families below the poverty line. These individuals saw growth rates decline slightly from 2009 to 2010 (1 percent to 0.8 percent), before declining sharply to 0.1 percent in 2011. In 2012, the average growth rate bounced back up to 0.3 percent. In contrast, the growth rate for individuals in families with income at or above 100 percent of poverty fell most abruptly from 2009 to 2010 (from 2.7 percent to 0.8 percent) as replacement rates fell by nearly 2 percentage points.

Despite having higher average monthly replacement rates and monthly exit rates than individuals in families without earnings, those in families with earnings had fairly similar growth rates as those in families without earnings in most years. The exception is 2010, where those in families with earnings had a growth rate of 1.1 percent, compared to 0.3 percent for those in families without earnings. In that year, the replacement rate and exit rate both fell for those in families with earnings, while the replacement rate fell and the exit rate rose for individuals in families without earnings. Finally, individuals in families without earnings had a negative growth rate in 2012, which occurs when the exit rate exceeds the replacement rate, indicating that participation declined for that portion of the caseload.

Growth rates for families with and without elderly members both declined consistently throughout the span of the panel, with the rate for families without elderly members declining more rapidly. However, both rates remained positive through 2012. For both groups, replacement rates declined over time while exit rates remained fairly stable.

Table II.33 Average Monthly SIPP-Based Growth, Replacement, and Exit Rates by Subgroup, 2008–2012

Period	Average Monthly Growth Rate	Average Monthly Replacement Rate	Average Monthly Exit Rate	Percentage Change In Growth Rate (Relative To First Period) Explained By Change In	
				Replacement Rate	Exit Rate
Individuals in Families with Children					
January 2009–December 2009	1.6	4.7	3.1		
January 2010–December 2010	0.6	3.5	2.8	1.3	-0.3
January 2011–December 2011	0.4	3.0	2.6	1.8	-0.8
January 2012–December 2012	0.1	3.0	2.9	-0.1	1.1
October 2008–December 2012	0.8	3.8	2.8		
Individuals in Families without Children					
January 2009–December 2009	2.2	5.7	3.5		
January 2010–December 2010	1.0	4.2	3.2	1.3	-0.3
January 2011–December 2011	0.4	3.7	3.3	0.8	0.2
January 2012–December 2012	0.4	3.4	3.0	21.6	-20.6
October 2008–December 2012	1.1	4.4	3.2		
Individual in Families with Income Below Poverty					
January 2009–December 2009	1.0	3.5	2.5		
January 2010–December 2010	0.8	2.6	1.8	4.1	-3.1
January 2011–December 2011	0.1	2.0	1.9	0.9	0.1
January 2012–December 2012	0.3	2.3	2.0	1.1	-0.1
October 2008–December 2012	0.6	2.8	2.2		
Individuals in Families with Income 100 Percent of Poverty or Greater					
January 2009–December 2009	2.7	6.8	4.1		
January 2010–December 2010	0.8	4.9	4.1	1.0	0.0
January 2011–December 2011	0.8	4.7	3.9	-4.2	5.2
January 2012–December 2012	0.2	4.1	3.9	0.9	0.1
October 2008–December 2012	1.4	5.4	3.8		

Table continues

Table II.33, *continued*

Period	Average Monthly Growth Rate	Average Monthly Replacement Rate	Average Monthly Exit Rate	Percentage Change In Growth Rate (Relative To First Period) Explained By Change In	
				Replacement Rate	Exit Rate
Individuals in Families with Earnings					
January 2009–December 2009	1.8	6.2	4.4		
January 2010–December 2010	1.1	4.5	3.4	2.5	-1.5
January 2011–December 2011	0.3	3.9	3.6	0.7	0.3
January 2012–December 2012	0.4	3.7	3.3	-1.0	2.0
October 2008–December 2012	1.1	4.8	3.7		
Individuals in Families without Earnings					
January 2009–December 2009	1.7	3.4	1.8		
January 2010–December 2010	0.3	2.6	2.3	0.6	0.4
January 2011–December 2011	0.5	2.2	1.7	-1.3	2.3
January 2012–December 2012	-0.1	2.3	2.4	-0.2	1.2
October 2008–December 2012	0.7	2.8	2.1		
Individuals in Families with Elderly Members					
January 2009–December 2009	1.8	4.4	2.6		
January 2010–December 2010	1.3	3.5	2.2	1.8	-0.8
January 2011–December 2011	1.0	3.4	2.4	0.3	0.7
January 2012–December 2012	0.6	3.1	2.5	0.8	0.2
October 2008–December 2012	1.2	3.7	2.4		
Individuals in Families without Elderly Members					
January 2009–December 2009	1.7	5.0	3.2		
January 2010–December 2010	0.7	3.7	3.0	1.2	-0.2
January 2011–December 2011	0.3	3.2	2.8	1.4	-0.4
January 2012–December 2012	0.1	3.1	3.0	0.1	0.9
October 2008–December 2012	0.9	3.9	3.0		

Universe: Individuals at risk (not receiving SNAP benefits for at least two months and income <300% of poverty at some point during panel period) or receiving SNAP.
Source: Decision Demographics tabulations of the 2008 SIPP Panel

4. Turnover Rate

Next, we present estimates of the SNAP turnover rate during calendar years 2009, 2010, 2011, and 2012. We also compare these turnover rates to estimated turnover rates for periods from the 1980s, 1990s, and the early- and mid-2000s.

If the overall SNAP caseload remains relatively constant, the turnover rate is a useful measure of how often individuals move into and out of the system. With a low turnover rate, the program will handle the same participants over long periods of time with few participants entering or exiting in a given month. With a high turnover rate, by contrast, the program will process applications for large numbers of individuals, even if the number of cases actually participating remains steady. In any given month, there will be many new faces in the SNAP office, and many others who had participated in the past will no longer participate.

a. SNAP Turnover Rate in the 2008 Panel

The turnover rate measures the size of the population that has come into contact with SNAP over the course of a year in relation to the average size of the caseload. We calculate it as the total number of individuals who received SNAP benefits during the year, divided by the mean number receiving SNAP benefits in a month.

The SNAP turnover rate was 1.4 in 2009, and 1.3 in 2010, 2011, and 2012 (Table II.34). Thus, for 2009, caseworkers who had a caseload size of 500 in a single month handled an average of 700 different cases over the course of the year, and for the other three calendar years, caseworkers who had a caseload size of 500 in a single month handled an average of about 650 different cases over the course of the year. This suggests that there is only a modest amount of turnover in the SNAP caseload over the course of a year. While there was an increase across years in the number of individuals receiving benefits in at least one month of the year, the average monthly number of individuals receiving benefits also increased each year, but by a slightly lower percentage, leading to a slightly declining turnover rate over the years covered by the panel.

Table II.34 SNAP Turnover Rates Over Time, 1984 through 2008 SIPP Panels

	(A)	(B)	(C)
	Total Receiving Benefits in At Least One Month	Average Monthly Number Receiving Benefits	Turnover Rate (A/B)
2008 Panel			
January 2009–December 2009	42,169,476	31,194,343	1.4
January 2010–December 2010	47,029,701	35,742,890	1.3
January 2011–December 2011	47,924,998	37,679,798	1.3
January 2012–December 2012	49,375,206	38,586,703	1.3
October 2008–December 2012	67,407,969	33,623,285	
2004 Panel			
January–December 2004	30,129,134	21,501,977	1.4
January–December 2005	31,663,862	23,088,912	1.4
June 2005–May 2006 [a]	31,757,586	23,200,443	1.4
January 2004–May 2006	39,533,424	22,434,857	
2001 Panel			
January–December 2001	24,549,821	16,269,571	1.5
January–December 2002	25,819,693	17,204,142	1.5
October 2002–September 2003	26,445,119	18,351,314	1.4
January 2001–September 2003	35,687,585	17,223,082	
1991 Panel			
January–December 1991			1.3
January–December 1992			1.3
1984 Panel			
January–December 1984			1.4
January–December 1985			1.4

Universe: Total or averaged number of individuals receiving SNAP in denoted time period.

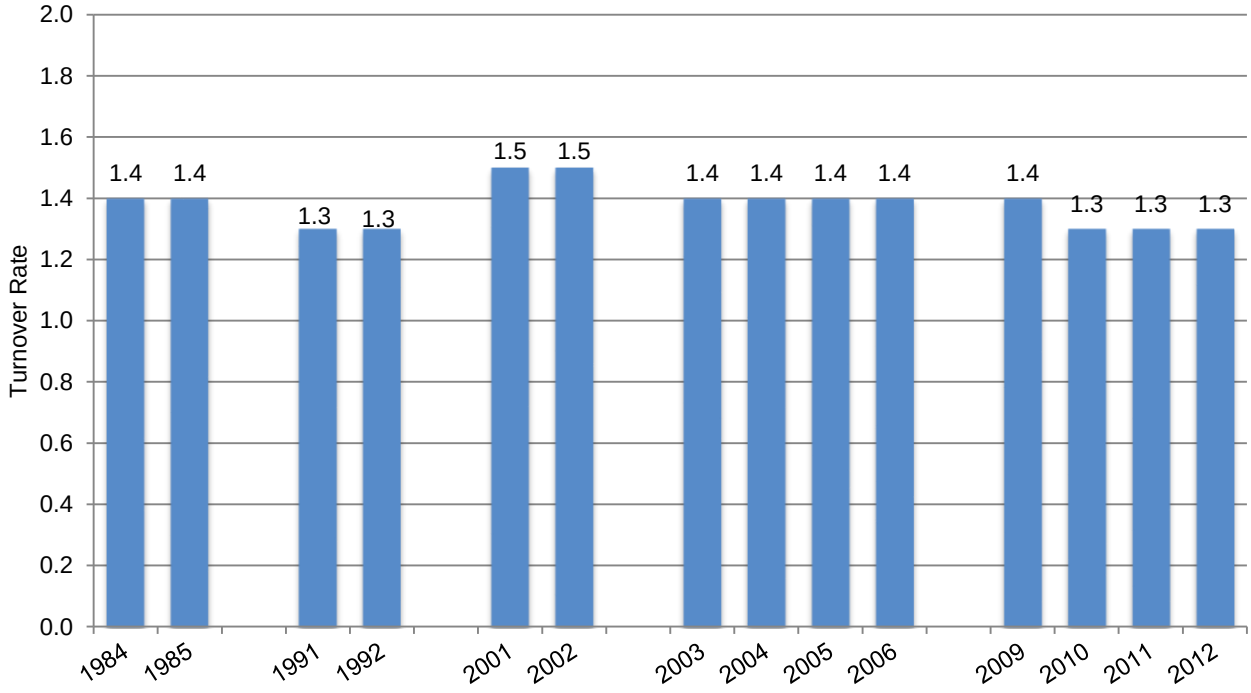
Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 SIPP panel data, Mabli et al. (2011a); 2001 SIPP panel data, Cody (2007); 1991 SIPP panel data, Gleason et al. (1998); 1984 SIPP panel data, Burstein et al. (1993).

Notes: [a] May 2006 is the last month common to all four rotation groups within the wave.

b. Changes in the SNAP Turnover Rate Over Time

The SNAP turnover rate has not changed very much from 1984 to 2012, though it has declined slightly during the 2000s (Figure II.14). The turnover rate was lower in both 1991 and 1992 (1.3 percent) than in both 1984 and 1985 (1.4 percent), possibly due to the increase in the duration of spells from the mid-1980s to the early 1990s (Gleason et al., 1998). In 2001 and 2002 it was 1.5 percent; then it decreased and stabilized at 1.4 percent from 2003 to 2009; and, finally, it decreased to 1.3 percent from 2010 to 2012.

Figure II.14 Changes in the SNAP Turnover Rate Over Time



Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2009–2012; Mabli et al. (2011a) for 2003–2006; Cody et al. (2007) for 2001–2002; Gleason et al. (1998) for 1991–1992; Burstein (1993) for 1984–1985.

There is no clear discernible association with the state of the national economy, at least from considering changes in the number of unemployed individuals in the U.S. population over time. For example, the decrease in the turnover rate between 2002 and 2003 coincides with the start of a decline in the number of unemployed individuals in 2003—an unemployment trend that continued through 2006. This would suggest a negative relationship between the turnover rate and the strength of the economy. However, unemployment was highest in 1991, 1992, and during the 2008 to 2012 period relative to the early- to mid-2000s, at a time when the turnover rate was lowest, which would suggest a positive relationship between the turnover rate and the strength of the economy.

III. HISTORIC SNAP DYNAMICS PROFILES OF KEY SUBGROUPS

The SNAP caseload is by no means a homogeneous population, but rather is comprised of many distinct subgroups that form the overall caseload. Typical subgroup characterizations include family composition, age, disability status, citizenship, and sources of income. The typical lifecycle of SNAP cases—from entry through duration, exit, and re-entry—varies substantially across these distinct subgroups, and SNAP participation dynamics within the subgroups have changed over time; these factors all contribute to composition and participation behavior changes in the total caseload. This chapter enhances our understanding of caseload dynamics by addressing differences among 13 subgroups of particular interest to FNS. We explore how their distinctions have developed over time, as documented in a series of Dynamics studies based on successive SIPP panels. This historic subgroup approach to understanding SNAP dynamics addresses the following research questions:

- How do participation dynamics compare across key SNAP participation subgroups, and what can a SNAP Dynamics analysis reveal about the unique character of each subgroup?
- How have the participation patterns of individual subgroups changed over time and how does this affect the total SNAP caseload?
- How do the distribution and dynamics of individual subgroups contribute to our understanding of the SNAP caseload evolution?

We examine 13 specific subgroups that drive the SNAP caseload (line numbers correspond to the tables which summarize dynamics patterns for each subgroup):

Subgroups Characterized by Family Structure

1. Single parents (6 percent of SNAP entrants; 11 percent of overall cases in December 2008)
2. Children of single parents (10 percent of entrants; 21 percent of overall cases)
3. Married parents (20 percent of entrants; 14 percent of overall cases)
4. Children of married adults (18 percent of entrants; 14 percent of overall cases)

Subgroups Characterized by Age, Disability Status, Citizenship

5. Elderly adults (8 percent of entrants; 9 percent of overall cases)
6. Disabled adults (10 percent of entrants; 15 percent of overall cases)
7. Individuals in Childless Families without any Elderly or Disabled Members (12 percent of entrants; 6 percent of overall cases)
8. Noncitizens (9 percent of entrants; 9 percent of overall cases)

Subgroups Characterized by Sources of Family Income

Individuals living in families with income from:

9. Earnings (69 percent of entrants; 54 percent of overall cases)
10. TANF (5 percent of entrants; 12 percent of overall cases)
11. Social Security (27 percent of entrants; 27 percent of overall cases)
12. SSI (17 percent of entrants; 23 percent of overall cases)
13. Zero income (7 percent of entrants; 7 percent of overall cases)

This chapter profiles the subgroups, describing what makes them unique and highlighting changes over time in their patterns of participation. Our analysis compares SNAP dynamics for each subgroup across five SIPP panels and relates the subgroup profiles to the total SNAP caseload. This chapter first reviews the data availability and differentiation across the studies from which we draw. We next profile each subgroup in turn, and the chapter concludes with an analysis of how changing subgroup dynamics might influence the composition and SNAP participation behavior of the total SNAP caseload.

A. Data and Methodology for Historic Portraits of Subgroups

We draw our summary metrics from the principal studies of SNAP Dynamics that included subgroup analyses—a series of reports written for FNS, one for each successive SIPP panel:

- Burstein (1993) based on the 1984 SIPP panel
- Gleason et al. (1998) based on the 1991 SIPP panel
- Cody et al. (2007) based on the 2001 SIPP panel
- Mabli et al. (2011a) based on the 2004 SIPP panel
- Leftin et al. (2014) based on the 2008 SIPP panel

Subgroup definitions diverge slightly among successive studies due to subtle differences in both the underlying SIPP data and the study methodologies. The latter are important to note, as methodological differences may partially explain observed changes in subgroup SNAP dynamics over time. Table III.1 summarizes distinctions across the five studies, presenting the characteristics of the SIPP panels and basic methodological definitions of each. The table reviews time periods covered by the SIPP panels, changes in sample size and attrition, study universes and analysis definitions, and types of analyses conducted.

As shown in the table, research based on the 2001, 2004, and 2008 SIPP panels is the most comparable. These three studies use the most similar data, as the corresponding SIPP panels posed the exact same survey questions to consistent universes of respondents, and used identical editing and allocation procedures. Data differences across these panels are thus limited to sample size, attrition, panel length, and timing.[56] Likewise, the Dynamics studies based on these SIPP panels employ nearly identical methodological constructs and analysis group definitions.

Subgroup definitions are not mutually exclusive, so individual SNAP participants can belong to more than one subgroup and appear in multiple tables. For example, a study participant may be simultaneously defined as a single parent, a disabled individual, a noncitizen, an individual with family earnings, and an individual in families receiving SSI and contribute data to each of these tables. Furthermore, subgroup memberships may fluctuate over the panel observation period as family composition, demographic characteristics, and/or economic circumstances change from month to month. Yet methodologically, participants must be assigned to

[56] An additional difference between the 2001 ad later panels is that SIPP used expanded dependent interviewing in the 2004 and 2008 panels, in which respondents who had reported receiving SNAP in the previous wave were reminded of this fact, increasing report of SNAP participation.

subgroup(s) at a consistent point in the study. For example: for new entrants, subgroup assignment occurs in the month before a SNAP spell begins, while for measures that use a cross-sectional sample of SNAP participants, subgroup membership is determined in the cross-sectional common month. Appendix B clarifies subgroup definitions and the methodological considerations used in assigning subgroup status to sample members for each types of analysis.

Table III.1 Historic Comparison of SIPP Panels Used in Past SNAP Dynamics Studies: Timing, Design, and Sample

SIPP Panel and Study	1984 Burstein (1993)	1991 Gleason (1998)	2001 Cody et al. (2007)	2004 Mabli (2011a)	2008 Current Study (2014)
Time Period	1983–1986	1990–1993	2001–2003	2004–2006	2008–2012
UNDERLYING SIPP DATA					
Fielding began in:	October	February	February	February	September
Common Months in Waves 1 and 2	NA	Jan and May 1991	Jan and May 2001	Jan and May 2004	Aug and Dec 2008
Waves Used	Waves 4-8 (of 9)	Waves 1-8 (of 8)	Waves 1-9 (of 9)	Waves 1-8 (of 12)	Waves 1-14 (of 16)
Entrant At-risk Months	NA	32	33 month (months 3-35)	29 months (months 3-31)	53 months (months 3-55)
Sample Size	21,000 households	35,000 households	31,000 households	51,000 households	52,000 households
Attrition by end of last wave used	22 percent	21 percent	32 percent	37 percent	51 percent
Effective Sample Size	Approximately 16,000 households	Approximately 27,500 households	Approximately 21,000 households	Approximately 32,000 households	Approximately 25,000 households
STUDY METHODOLOGY					
Descriptive Analysis	Entry, Exit, Re-Entry,Duration, Entry/Exit Triggers	Entry, Exit, Re-Entry,Duration, Entry/Exit Triggers, Total Time On, Turnover	Entry, Exit, Re-Entry, Duration, Entry/Exit Triggers, Total Time On, Turnover, Growth, Replacemt.	Entry, Exit, Re-Entry,Duration,Entry/Exit Triggers,Total Time On, Turnover, Growth, Replacement, Subgroups	
At-risk population for entry rates	Nonparticipating individuals; HH inc < 300% poverty	Nonparticipating individuals	Nonparticipating individuals with family income <300% poverty		
Household / Family Composition	Based on relationships and characteristics within **the entire household** or dwelling unit		Based on relationships and characteristics within the family—all those related to the household head		

Sources: Current study for 2008; Mabli et al. (2011a) for 2004; Cody (2007) for 2001, Gleason (1998) for 1991; Burstein (1993) for 1984; National Research Council (2009).

Table III.2 illustrates the historical availability of SNAP dynamics data for our subgroups, by SIPP panel. Due to changes in available data and the evolving policy interests of FNS, each successive SNAP Dynamics study included additional subgroups in the analysis. Over time, study authors also expanded research questions and descriptive topics covered.[57] For example, the 2004 study was the first to include analyses of individuals with zero income, and exit trigger analyses are not included in the 1991-based study. Also of note is that all dynamics measures profiled in this chapter are available for the full census of subgroups profiled in both the current (2008) and most recent (2004) SIPP panel; the 2004 and 2008 panels are thus summarized in combined "2004/8" columns.[58]

[57] While preparing the 2004 analysis for Mabli et al. (2011a), we analyzed the original 2001 analysis files and replicated all measures to ensure compatibility of the 2001 and 2004 data. In this process we also expanded the analyses to include 2001 life tables of completed SNAP spells of the cross-sectional sample for subgroups, which are included in the tables in this chapter.

[58] We calculate monthly exit rates in the current study, but because we have these for just the 2008 panel, they are not included in this chapter.

Table III.2 Historical Availability of SNAP Dynamics Descriptive Data by Subgroup

	At Risk Population and Entry Rates				Spell Length, Median Months, and Cumulative Exit Rate at 4, 12, 24 months [a]				Exit Triggers				Re-entry (Median Months) and Re-entry Rate at 4, 12, 24 months			
	SIPP Panel Years															
	2004/8	2001	1991 [b]	1984	2004/8	2001	1991	1984	2004/8	2001	1991	1984	2004/8	2001	1991	1984 [c]
Subgroups Characterized by Family Structure																
1. Single Parents	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x
2. Children of Single Parents	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x
3. Married Adults With Children [d]	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x
4. Children of Married Adults [d]	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x
Subgroups Characterized by Age, Disability Status, Citizenship																
5. Elderly Adults	x	x	x		x	x	x		x	x			x	x	x	
6. Disabled Individuals	x				x				x				x			
7. No Elderly or Disabled in Childless Family	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x
8. Noncitizens	x	x	x		x	x	x		x	x			x	x	x	
Subgroups Characterized by Sources of Family Income [e]																
Individuals with family income from:																
9. Earnings	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x
10. TANF	x	x			x	x			x	x			x	x		
11. Social Security	x				x				x				x			
12. SSI	x				x				x				x			
13. Zero income	x				x				x				x			

Sources: Current study for 2008; Mabli et al. (2011a) for 2004; Cody (2007) for 2001, Gleason (1998) for 1991; Burstein (1993) for 1984.

Notes: The availability of the data for the current 2008 study and most recent 2004 study are identical and are presented together as "2004/8."

[a] 1984 data include only new spells, 1991 data adds cross sectional sample data on subsequent spell length without medians, and 2001 data further add those medians and completed spell length data.

[b] 1991 analysis applied to the total population rather than the under 300 percent of poverty population as in 1984 and 2001.

[c] 1984 data lack the median and the re-entry rate at 24 months.

[d] For 1984 and 1991, multiple adult-present households are presented instead of married adult households; see text for implications.

[e] Household in 1984 and 1991; Family income in 2001, 2004, 2008.

B. Historic Profiles of Key SNAP Subgroups

This section profiles 13 key SNAP subgroups, describing how SNAP dynamics patterns exhibited by each subgroup differ, both across time and in comparison to the total SNAP caseload. Table III.3 provides a brief summary of how the dynamics of subgroups compare to the total population of SNAP participants (termed simply "total population" hereafter). Table III.4 presents the summary profile for total SNAP entrants and total SNAP spells, providing a comparative base for the 13 analogous subgroup profiles that follow (Tables III.4.1–III.4.13). Measures presented in these tables do not represent new findings, but rather synthesize findings from previous studies and the analyses described in Chapter II. Table rows specifying "percent of at-risk population," "percent of entrants," and "percent of overall spells" refer to the share of each that is contributed by the subgroup in question; thus these lines appear as 100 percent in the total population table. For brevity's sake, in the table headers and accompanying text, each of the five studies is denoted not by authorship, but by the initial year of the SIPP panel on which it is based: findings based on Burstein (1993) are referred to "1984," Gleason et al. (1998) as "1991," Cody et al. (2007) as "2001," Mabli et al. (2011a) as "2004," and the current study as "2008."

Table III.3 Subgroup Dynamics in Comparison to Total Population Dynamics in 2008 Panel

	Entry Rates	New-Entrant Spells	Subsequent/ Completed Spells for Cross-Section	Time Before Re-Entry
Subgroups Characterized by Family Structure				
1. Single Parents	Much higher	Longer	Longer	Shorter
2. Children of Single Parents	Much higher	Longer	Longer	Much shorter
3. Married Adults With Children	Lower	Shorter	Shorter	Longer
4. Children of Married Adults	Higher	Same	Shorter	Shorter
Subgroups Characterized by Age, Disability Status, Citizenship				
5. Elderly Adults	Much lower	Same	Longer	Longer
6. Disabled Individuals	Much higher	Longer	Longer	Shorter
7. No Elderly or Disabled in Childless Family	Much lower	Shorter	Much shorter	Longer
8. Noncitizens	Higher	Same	Shorter	Mixed
Subgroups Characterized by Sources of Family Income				
Individuals with family income from:				
9. Earnings	Lower	Shorter	Shorter	Longer
10. TANF income	Very much higher	Shorter	Longer	Much shorter
11. Social Security Income	Same	Same	Longer	Same
12. Supplemental Security Income	Much higher	Longer	Longer	Shorter
13. Zero Income	Much higher	Longer	Longer	Shorter

Source: Decision Demographics tabulations of the 2008 SIPP panel.

Table III.4 Historic Subgroup SNAP Dynamics Data: Total Population

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	100.0	100.0	100.0	100.0	100.0
Percent of entrants	100.0	100.0	100.0	100.0	100.0
Entry Rates					
Monthly	—	0.3	0.4	0.5	0.7
Wave-based	2.0	—	1.8	2.0	2.6
Annual	—	2.6	4.1	4.2	6.2
Spell Length of New Spells					
Median months	6	9	8	10	12
Cumulative exit at 4 months or less	41.1	32	32.6	27.5	26.0
Cumulative exit at 12 months or less	68.1	57	61.4	57.9	51.8
Cumulative exit at 24 months or less	80.3	71	74.1	74.3	67.0
Percent of overall spells at 1 month	—	—	100.0	100.0	100.0
Percent of overall spells at 4 months	—	—	100.0	100.0	100.0
Percent of overall spells at 12 months	—	—	100.0	100.0	100.0
Percent of overall spells at 24 months	—	—	100.0	100.0	100.0
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	19	> 27	47
Cumulative exit at 4 months or less	—	12	20.3	15.2	12.5
Cumulative exit at 12 months or less	—	27	40.0	30.8	24.5
Cumulative exit at 24 months or less	—	43	57.4	46.7	36.0
Percent of overall spells at 1 month	—	—	100.0	100.0	100.0
Percent of overall spells at 4 months	—	—	100.0	100.0	100.0
Percent of overall spells at 12 months	—	—	100.0	100.0	100.0
Percent of overall spells at 24 months	—	—	100.0	100.0	100.0
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	10.1	8.0	6.4
Cumulative exit at 1 year or less	—	—	20.8	17.4	13.7
Cumulative exit at 2 years or less	—	—	34.6	28.6	22.9
Cumulative exit at 4 years or less	—	—	51.5	41.5	34.9
Cumulative exit at 8 years or less	—	—	62.7	52.9	50.4
Percent of overall spells at 0.5 year	—	—	100.0	100.0	100.0
Percent of overall spells at 1 year	—	—	100.0	100.0	100.0
Percent of overall spells at 2 years	—	—	100.0	100.0	100.0
Percent of overall spells at 4 years	—	—	100.0	100.0	100.0
Percent of overall spells at 8 years	—	—	100.0	100.0	100.0

Table continues

Table III.4, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Re-entry Rates					
Median nonparticipation spell in months	—	20	16	20	16
Cumulative re-entry at 4 months or less	11.6	25	24.0	22.2	26.9
Cumulative re-entry at 12 months or less	38.3	42	45.0	42.1	47.2
Cumulative re-entry at 24 months or less	—	54	55.4	52.9	59.2
Exit Triggers					
Increase in earnings	28.6	—	26.7	24.0	19.2
Increase in other income	13.0	—	20.7	17.5	14.3
Increase in family size	—	—	26.9	22.2	15.4
Decrease in family size	—	—	29.4	28.9	28.5
Any trigger	—	—	24.8	21.4	17.6

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).
Notes: See Appendix B for subgroup determinations.

Subgroups Characterized by Family Structure

We first profile four subgroups that are characterized by family composition: single parents, followed by their children, and married parents, followed by their children. As expected, the SNAP dynamics patterns of children closely resemble those of the parents with whom they reside.

1. Single Parents (6 percent of new entrants; 11 percent of overall cases)

Single parents are just 3 percent of the at-risk population--nonparticipating individuals with family incomes less than 300 percent of poverty. However, because their entry rates have historically been two to three times that of the total population, they represent 6 percent of those entering the SNAP in 2008. The annual entry rate for this subgroup rose 24 percent between 2004 and 2008; there may be fewer single parents at risk of entering SNAP in 2008, but they enter at a higher rate than in previous panels and at a rate twice that of the total population at risk. Single parents accounted for a larger share of the at-risk and entrant populations in 2001 and 2004 than in earlier panels, but in 2008 returned to the lower 1984 rate. Despite substantial increases in the SNAP caseload during the time period covered by this study, the number of single parents in the at-risk population is 20 percent lower than in 2004.

Historically, single parents stay on SNAP longer than the average participant, and this differential increased between 2004 and 2008, as single parents' time on SNAP increased relative to that of the total population. The median number of months on SNAP for single parent new entrants increased 50 percent between 2004 and 2008, compared to 20 percent for the total

population; the median spell length for single parents who entered SNAP during the 2008 panel was five months longer than average. The median length of new spells for this subgroup has always been longer than that of the total population, by as much as seven months in 1991, though by just one month in 2004.

Single parents have historically exited new SNAP spells more slowly than the average participant, and between 2004 and 2008, single parents' time on SNAP grew relative to that of the total population. The new spell 4-month and 12-month cumulative exit rates declined for the total population by 6 and 11 percent between the last two panel periods; among single parents, these exit rates each declined by 20 percent or more.[59] In 2008, 52 percent of total participants' new spells had ended by the one-year mark, compared with 44 percent of single parent new spells, a greater differential than seen in 2004 and 2001.

Subsequent spell length quantifies additional (or "subsequent") months on SNAP, starting from a specific month early in the panel period. Historically, single parents have exhibited longer median subsequent spell lengths and lower cumulative subsequent spell exit rates than the total population. Single parents in the cross-sectional sample exited SNAP much more slowly in 2008 than in 2004, with 27 percent exiting within two years of the reference month compared to 43 percent in the last study.

A third measure of time on SNAP is completed length of spells active in a month early in the panel period. Again, as with the total population, we observe longer spells relative to previous studies for single parents. In 2008, single parents in the cross-sectional sample tended to stay on SNAP for many years; only 39 percent exited within eight years of their start month, compared to half of the total population and slightly more than half of single parents in earlier studies. Single parents comprise a greater than average share of the long-term recipient caseload; as a proportion of overall SNAP spells of various lengths, single parents' share of spells gradually increases with increasing spell length. This is consistent across panel years.

Not only are single parents' participation spells longer, as exhibited by three separate measures of spell length, but once individuals exit the program, they return to SNAP at rates somewhat higher than those observed for the total population. In 2008, of single parents who exited SNAP, 61 percent re-entered within two years, up from 53 to 58 percent who returned that quickly in earlier panels. Re-entry rates rose from 2004 to 2008 for the total population, but more so for single parents; the percentage of single parents who re-entered SNAP within just four months rose 55 percent between panels, compared to 21 percent for the total population. Accordingly, compared to earlier panels, single parents spent substantially fewer months off SNAP after exiting: a median of 12 months in 2008, down from a high 24-month median in 2004.

[59] All exit rates discussed in the subgroup chapter are *cumulative* exit rates, that is the cumulative percentage of participants who have exited SNAP within 4 months, 12 months, 24 months, and so on.

We examine four exit "triggers," events that precede an individual's exit from SNAP and may explain that exit: increase in earnings, an increase in other income, increase in family size, and decrease in family size. A decrease in family size is the most commonly observed exit trigger for these 13 subgroups across nearly all panels, possibly indicating ineligibility or decreased need due to someone leaving the SNAP unit. All observed trigger events for single parents declined in frequency in 2008 compared to earlier years. In 2001 and 2004, single parents experienced a decrease in family size preceding their exit more often than the total population. However, by 2008, incidence of this trigger declined by 50 percent for single parents, preceding just 17 percent of their exits, a substantially smaller share than observed for the total population. Exiting following an increase in earned or unearned income occurred less frequently among single parents in comparison to the total population across all years.

Compared to the two previous panels, single parents in 2008 entered SNAP at higher rates, exited slower, and re-entered sooner—as is the total SNAP population.

Table III.4.1 Historic Subgroup SNAP Dynamics Data: Single Adults with Children [a]

	SIPP Panel				
SNAP Dynamics Topic	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	2.4	1.6	3.2	3.3	2.5
Percent of entrants	4.3	4.7	9.2	8.6	5.9
Entry Rates					
Monthly	—	0.9	1.3	1.4	1.6
Wave-based	3.6	—	4.8	5.1	6.1
Annual	—	7.0	9.8	9.8	12.1
Spell Length of New Spells					
Median months	9	16	11	11	17
Cumulative exit at 4 months or less	27.4	17	25.5	19.9	15.5
Cumulative exit at 12 months or less	55.3	44	55.4	54.9	43.9
Cumulative exit at 24 months or less	65.7	59	69.0	68.4	56.9
Percent of overall spells at 1 month	—	—	9.2	8.6	6.0
Percent of overall spells at 4 months	—	—	9.4	8.8	6.1
Percent of overall spells at 12 months	—	—	11.0	9.2	7.3
Percent of overall spells at 24 months	—	—	14.4	10.1	7.9

Table continues

Table III.4.1, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	23	> 27	>51
Cumulative exit at 4 months or less	—	5	17.1	11.7	8.5
Cumulative exit at 12 months or less	—	15	35.1	29.9	16.8
Cumulative exit at 24 months or less	—	30	53.6	43.3	26.9
Percent of overall spells at 1 month	—	—	12.9	11.3	10.7
Percent of overall spells at 4 months	—	—	13.5	11.5	11.1
Percent of overall spells at 12 months	—	—	14.1	11.5	11.8
Percent of overall spells at 24 months	—	—	14.3	12.2	12.3
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	6.4	4.8	3.4
Cumulative exit at 1 year or less	—	—	15.9	12.6	8.7
Cumulative exit at 2 years or less	—	—	29.8	23.8	16.0
Cumulative exit at 4 years or less	—	—	47.2	40.4	26.9
Cumulative exit at 8 years or less	—	—	58.1	51.4	39.4
Percent of overall spells at 0.5 year	—	—	13.0	11.4	10.8
Percent of overall spells at 1 year	—	—	13.6	11.8	11.2
Percent of overall spells at 2 years	—	—	13.9	12.1	11.7
Percent of overall spells at 4 years	—	—	14.2	12.7	12.0
Percent of overall spells at 8 years	—	—	13.6	12.5	12.4
Re-entry Rates					
Median nonparticipation spell in months	—	22	14	24	12
Cumulative re-entry at 4 months or less	16.2	25	27.0	21.0	32.5
Cumulative re-entry at 12 months or less	41.0	36	47.4	41.4	54.0
Cumulative re-entry at 24 months or less	—	55	57.8	52.8	61.0
Exit Triggers					
Increase in earnings	26.0	—	22.2	20.4	13.1
Increase in other income	2.7	—	14.3	14.9	9.8
Increase in family size	—	—	27.3	21.4	12.7
Decrease in family size	—	—	41.9	35.0	17.0
Any trigger	—	—	19.1	17.3	11.2

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).

Notes: See Appendix B for subgroup determinations.

[a] The “single parents” subgroup corresponds to two different definitions: in 1984 and 1991 it is adults in *households* with children and one adult, while in 2001–2008 it is adults in *families* with children and one adult. Please refer to Appendix B for more details.

2. Children of Single Parents (10 percent of new entrants; 21 percent of overall cases)

The subgroup comprised of children of single parents naturally exhibits SNAP dynamics akin to those of the single parents with whom these children reside. They, too, are disproportionally represented among new entrants. In 2008, children of single parents represented 4 percent of the at-risk population but a disproportionate 10 percent of the entrant caseload. This differential was even greater in 1991, 2001, and 2004; for example, in 2001, children of single parents represented 5 percent of at-risk and 17 percent of new entrants. This share decreased by a third between 2004 and 2008 due to an absolute decline in the number of children of single parents in the at-risk population and concurrent growth in other subgroups. In the current panel, the single parent-family subgroups together represent 16 percent of total SNAP entrants. Compared with total SNAP entrants, both single parent family subgroups present with higher than average entry rates, but children's entry rates are slightly higher than those of the parents' subgroup, suggesting that single parents who enter have larger families than those who do not enter SNAP. Like the subgroup of parents, these children's entry rates continued to rise across successive panels, although this growth slowed between 2001/2004 and 2008 compared with the total population. In the prior two panels, single parents' children had an entry rate 3.3 times that of total population; in 2008 it declined to 2.8 times that of the total population.

Like their single parents, these children have consistently longer than average SNAP participation spells. Across time, median spell lengths for new and subsequent spells for this subgroup was 1.2 to 2.0 times longer than those observed for the total population. The subsequent spell length for children of single parents changed substantially over the observed time periods. In 1991, 14 percent of children of single parents participating early in the panel period exited within a year of the common month. In 2001, over a third exited within a year, indicating generally shorter subsequent spells. In 2004, fewer were exiting within a year than in 2001 but more than in 1991, and in 2008 children of single parents exited SNAP at close to 1991 rates, with just 17 percent of the cross-sectional sample exiting within a year of the common month. In both 2004 and 2008, the median subsequent spell length for children of single parents was not observed during the panel period, meaning that more than half of the children in single parent families who were on SNAP in the cross-sectional sample month were still on SNAP when the respective panel ended.

Differences between children of single parents and the total population grew in 2008, with half of new entrants staying on SNAP for 20 months (compared to 12 months for the total population), a differential of 8 months; this differential was just 2 months in 2004 and 4 months in the prior two panels. Similarly, the completed spell length for children of single parents in the cross-sectional sample increased steadily over time, with lower cumulative exit rates at every point in each successive panel. In 2001 it took four years for half of these children to exit SNAP, compared to a full eight years in 2004; in 2008, only 45 percent had exited by the eight year mark, indicating that most SNAP participant children of single parents are very long term recipients. Like the single parents subgroup, children of single parents' shares of overall spells

gradually increases with increasing spell length through spells of 4 years in length. Together, individuals in single-parent families comprise a greater share of longer spells than they do shorter spells, reflecting longer average stays on SNAP relative to the average participant. This is consistent across panel years.

Children of single parents return to SNAP more quickly than the average participant and also more quickly than the single parents. As observed with single parents, children of single parents' re-entry rates climbed substantially between the 2004 and 2008 panels; in fact, children of single parents re-entered SNAP more quickly in each successive panel, with the exception of 2004. In 2008, of children of single parents who exited SNAP, two-thirds re-entered within two years, up from 53 to 65 percent returning that rapidly in earlier panels. Children of single parents spent substantially fewer than average months off SNAP after exiting: a median of eight months in 2008, which is half the 16-month median nonparticipation spell length across all participants, and two-thirds of the 12-month median nonparticipation spell length of single parents. Generally, children of single parents are more dependent on SNAP than single parents. This suggests that single parent families with more children are more dependent on SNAP.

The most common exit trigger for children of single parents in 2001, 2004, and 2008 was a decrease in family size, reflecting the pattern set by the subgroup of single parents. Incidence of all four exit triggers declined in each successive panel for children of single parents, and these children are less likely than the general population to experience each trigger event before exiting SNAP.

Table III.4.2 Historic Subgroup SNAP Dynamics Data: Children of Single Parents [a]

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	3.6	2.3	5.0	4.9	3.6
Percent of entrants	9.8	8.3	17.4	16.1	10.2
Entry Rates					
Monthly	—	1.1	1.6	1.7	1.9
Wave-based	5.5	—	5.9	6.5	7.2
Annual	—	10.2	11.1	11.9	12.8
Spell Length of New Spells					
Median months	12	13	12	12	20
Cumulative exit at 4 months or less	24.0	19	23.2	19.1	14.6
Cumulative exit at 12 months or less	50.7	49	50.9	50.8	41.1
Cumulative exit at 24 months or less	61.3	64	67.3	66.4	54.9
Percent of overall spells at 1 month	—	—	17.4	16.1	10.2
Percent of overall spells at 4 months	—	—	18.2	17.0	10.5
Percent of overall spells at 12 months	—	—	22.5	18.8	13.0
Percent of overall spells at 24 months	—	—	27.4	21.0	14.5
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	22	> 27	>51
Cumulative exit at 4 months or less	—	4	16.8	10.0	8.4
Cumulative exit at 12 months or less	—	14	35.6	26.6	17.3
Cumulative exit at 24 months or less	—	27	55.7	41.4	27.2
Percent of overall spells at 1 month	—	—	25.4	22.2	21.1
Percent of overall spells at 4 months	—	—	26.7	23.1	21.9
Percent of overall spells at 12 months	—	—	27.9	23.6	23.4
Percent of overall spells at 24 months	—	—	27.4	25.0	24.4
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	6.8	3.3	2.6
Cumulative exit at 1 year or less	—	—	16.0	10.3	6.2
Cumulative exit at 2 years or less	—	—	31.5	20.9	12.7
Cumulative exit at 4 years or less	—	—	51.2	37.1	25.4
Cumulative exit at 8 years or less	—	—	64.5	50.1	44.7
Percent of overall spells at 0.5 year	—	—	25.3	22.0	20.9
Percent of overall spells at 1 year	—	—	26.2	23.2	21.9
Percent of overall spells at 2 years	—	—	26.7	24.1	23.7
Percent of overall spells at 4 years	—	—	26.3	25.3	24.3
Percent of overall spells at 8 years	—	—	23.8	23.5	22.0

Table continues

Table III.4.2, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Re-entry Rates					
Median nonparticipation spell in months	—	20	12	13	8
Cumulative re-entry at 4 months or less	14.5	27	29.5	28.2	39.0
Cumulative re-entry at 12 months or less	49.9	39	50.1	48.6	61.1
Cumulative re-entry at 24 months or less	—	53	64.8	60.6	67.1
Exit Triggers					
Increase in earnings	24.9	—	20.5	17.8	11.6
Increase in other income	7.0	—	14.9	13.3	9.1
Increase in family size	—	—	25.0	18.1	12.1
Decrease in family size	—	—	34.6	23.0	23.0
Any trigger	—	—	18.1	15.0	10.4

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).

Notes: See Appendix B for subgroup determinations.

[a] The children of single parents subgroup corresponds to two different definitions: in 1984 and 1991 it is children in *households* with children and one adult, while in 2001–2008 it is children in *families* with children and one adult. Please refer to Appendix B for more details.

3. Married Adults with Children[60] (20 percent of new entrants; 14 percent of overall cases)

About a fifth of the at-risk and entrant populations in 2008 were married parents. Historically this group has seen substantial changes to both its share of the at-risk population, and entry rates. In 1984 and 1991, when the definition included married and unmarried parents living in multiple-adult households, the subgroup constituted about a third of the at-risk population and a slightly higher share of the entrant population. The at-risk population declined to 23 percent in 2001 and 2004 when the analysis definition changed to include only married individuals with children. Entry rates were consistently lower than for the total population during those years, resulting in married adults with children being underrepresented among entrants. However, the annual entry rate for this subgroup doubled by 2008 while the annual entry rate for all increased by 51 percent, resulting in married adults with children comprising a growing share of the entrant population (and single parents thus comprising a decreasing share of the entrant population), perhaps due to the effects of the recession.

Married parents spend less time on SNAP than the average participant. Across time, their median spell lengths are consistently shorter than those of all participants, by just one month for new entrant spells in most years, but shorter by an average of seven months for subsequent

[60] In the 2001, 2004 and 2008 panels this subgroup refers to *married* adults with children; in the 1984 and 1991 panels the subgroup was defined as adults in households with children and multiple adults (either married or unmarried). Appendix B provides more detail.

spells. Their subsequent spell cumulative exit rates declined steadily since 2001, with just 15 percent of those in the cross-sectional sample for another four months or less and about a third participating for another 12 months or less. Similarly, for completed spell lengths, participants exited at a slower rate from 2001 to 2004 to 2008, with almost two-thirds exiting within four years in 2001, just over half exiting in four years in 2004, to just fewer than half exiting by the four-year mark in 2008. This pattern is comparable to that of the total population.

In contrast to their single parent counterparts, married parents account for a decreasing share of the total caseload as spell length increases, reflecting shorter than average SNAP stays. In the 2008 cross-sectional sample of spells, married adults with children accounted for 14 percent of all spells, but 12 percent of spells lasting two years and 10 percent of spells lasting eight years or more.

Once they exit SNAP, married parents do not quickly return. In fact, their median time off SNAP before re-entering was the maximum measurable in 2001 and 2004 (more than 24 and 27 months respectively). Their median nonparticipation spell dropped to 20 months in 2008, although that is still four months longer than the median for all exiting SNAP. Cumulative re-entry rates for this subgroup are historically lower than those of the total population, but not by as much in 2008 as in earlier panels.

The most common exit trigger for married adults with children across the 2001, 2004, and 2008 panels was a decrease in family size, followed by increases in earned income. All exit triggers declined between 2004 and 2008 for this subgroup, but married parents were still more likely than the average participant to experience each type of trigger event in 2008.

Table III.4.3 Historic Subgroup SNAP Dynamics Data: Married Adults with Children [a]

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	32.9	28.7	22.7	22.7	21.4
Percent of entrants	36.0	34.8	17.5	15.5	19.7
Entry Rates					
Monthly	—	0.4	0.3	0.4	0.6
Wave-based	2.2	—	1.4	1.4	2.4
Annual	—	2.9	3.5	3.1	6.2
Spell Length of New Spells					
Median months	5	8	8	9	11
Cumulative exit at 4 months or less	47.2	36	38.1	29.9	27.6
Cumulative exit at 12 months or less	72.9	63	68.2	60.5	54.5
Cumulative exit at 24 months or less	87.3	76	78.3	78.9	69.9
Percent of overall spells at 1 month	—	—	17.5	15.5	19.7
Percent of overall spells at 4 months	—	—	16.9	15.1	19.0
Percent of overall spells at 12 months	—	—	14.8	14.2	18.8
Percent of overall spells at 24 months	—	—	10.7	12.2	18.6
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	12	22	35
Cumulative exit at 4 months or less	—	20	27.8	19.0	15.4
Cumulative exit at 12 months or less	—	38	50.1	35.7	32.3
Cumulative exit at 24 months or less	—	56	66.7	52.5	44.8
Percent of overall spells at 1 month	—	—	12.6	12.1	14.0
Percent of overall spells at 4 months	—	—	11.6	11.8	13.7
Percent of overall spells at 12 months	—	—	10.3	11.0	12.3
Percent of overall spells at 24 months	—	—	9.3	10.6	11.9
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	15.4	10.8	7.6
Cumulative exit at 1 year or less	—	—	28.3	23.0	21.0
Cumulative exit at 2 years or less	—	—	43.0	36.9	32.6
Cumulative exit at 4 years or less	—	—	62.4	51.7	46.2
Cumulative exit at 8 years or less	—	—	76.3	64.6	59.5
Percent of overall spells at 0.5 year	—	—	12.7	12.2	14.1
Percent of overall spells at 1 year	—	—	11.9	11.8	13.9
Percent of overall spells at 2 years	—	—	11.4	10.9	12.2
Percent of overall spells at 4 years	—	—	9.1	9.0	11.5
Percent of overall spells at 8 years	—	—	7.7	6.8	9.7

Table continues

Table III.4.3, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Re-entry Rates					
Median nonparticipation spell in months	—	18	> 24	> 27	20
Cumulative re-entry at 4 months or less	12.4	27	18.5	15.9	21.0
Cumulative re-entry at 12 months or less	37.2	44	39.3	36.5	41.9
Cumulative re-entry at 24 months or less	—	54	45.9	46.8	54.2
Exit Triggers					
Increase in earnings	30.6	—	29.3	26.6	22.8
Increase in other income	15.4	—	28.5	22.3	18.5
Increase in family size	—	—	22.3	18.3	17.1
Decrease in family size	—	—	32.9	36.7	35.7
Any trigger	—	—	29.5	25.1	21.9

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).

Notes: See Appendix B for subgroup determinations.

[a] The married adults with children subgroup corresponds to two distinct definitions of subgroups as noted above; in 1984 and 1991 it is adults living in a *household* with other adults and children, while in 2001–2008 it is children in *families* with children and one adult. Please refer to Appendix B for more details.

4. Children of Married Adults[61] (18 percent of new entrants; 14 percent of overall cases)

Married couples and their family members are a substantial part of the caseload we are studying; in 2008, the two subgroups together constitute more than a third of both the at-risk population and new entrants. Children of married adults enter SNAP at rates comparable to those of the total population and just slightly higher than married parents, suggesting that members of larger families are slightly more likely to enter SNAP. Children of married adults made up 17 percent of the population at risk in 2008 (compared to 4 percent for children of single parents) and 18 percent of new entrants. These percentages have held fairly steady across the three panels for which the subgroup definition has been consistent. In 1984 and 1991, however, when the definition included children living with married or unmarried multiple adults, their entry rates were substantially higher than those of the total population, though not as high as their counterparts living with single parents.

As expected, the participation dynamics of children of married parents largely parallel those of married parents. Both subgroups had a median spell that was a few months shorter than the median spell for total population, though children's new spells are slightly longer than those of married parents and about equal to those of the total population. Children's median subsequent

[61] In the 2001, 2004 and 2008 panels this subgroup refers to children living with *married* adults; in the 1984 and 1991 panels the subgroup was defined as children living in households with multiple adults (either married or unmarried). Appendix B provides more detail.

spell length was longer than that of married parents in 2001, but actually shorter in 2004 and 2008. Their cumulative exit percentages are about equal to those of the total population for new spells across panel years, but their subsequent and completed spell lengths are shorter than average. However, the median subsequent spell length for children of married adults increased by 80 percent between the 2001 and 2008 panels and observed cumulative exit rates fell. More than half of subsequent spells in 2001 and 2004 ended by 24 months (fully two-thirds in 2001), compared to 47 percent in 2008.

Over time, following the general pattern exhibited by the total population, we see overall longer completed spell lengths across the panels and mostly decreasing exit rates. However, members of this subgroup have exited SNAP more quickly than average in all panels; in 2008 23 percent exited within the first year on SNAP, compared to 14 percent of the total population. Furthermore, the percentage of their cross-sectional sample spells still ongoing at the eight-year mark has increased in each successive panel. Children of married adults spend less time than average on SNAP, and thus this subgroup, like married parents, comprises a relatively small share of the longest SNAP cases. Children of married adults account for 14 percent of overall completed spells but 11 percent of spells lasting eight or more years.

Unlike their married parents, children of married adults re-enter SNAP more quickly than average. In part this is because children from larger families enter and re-enter SNAP more quickly than children from smaller families. This trend of shorter than average nonparticipation periods has held steady over time, with median nonparticipation spells of 12 to 13 months across all panels from 2001 to 2008. The percentage of these children that re-enter in four months or less has held fairly steady at 25 to 30 percent, and about 60 percent re-enter within 24 months. Generally, children of married adults are more dependent on SNAP than married parents, but they are not as dependent as children of single parents.

Of the exit triggers, earnings and other income increases preceded exits for children of married adults the most in 2001, but by 2004, the frequency of these triggers had declined somewhat, and the most common exit trigger for children of married adults has since been a decrease in family size. The exit trigger rates of this subgroup closely resemble those of the total population in 2004 and 2008. Across time, children of married parents have been less likely than married parents overall to experience each type of exit trigger, suggesting that some children may stay on SNAP when a parent exits.

Table III.4.4 Historic Subgroup SNAP Dynamics Data: Children of Married Parents [a]

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	26.7	22.0	19.1	18.6	17.2
Percent of entrants	34.5	33.2	16.0	16.2	18.3
Entry Rates					
Monthly	—	0.5	0.4	0.5	0.7
Wave-based	2.6	—	1.6	1.8	2.8
Annual	—	3.7	3.9	3.9	7.1
Spell Length of New Spells					
Median months	6	12	8	11	12
Cumulative exit at 4 months or less	40.4	30	31.3	26.2	23.5
Cumulative exit at 12 months or less	70.9	52	65.2	55.4	51.3
Cumulative exit at 24 months or less	84.5	69	78.5	78.9	67.9
Percent of overall spells at 1 month	—	—	15.9	16.2	18.2
Percent of overall spells at 4 months	—	—	16.1	16.1	18.2
Percent of overall spells at 12 months	—	—	15.2	17.0	18.7
Percent of overall spells at 24 months	—	—	11.2	12.2	19.7
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	16	21	29
Cumulative exit at 4 months or less	—	15	23.0	17.6	16.3
Cumulative exit at 12 months or less	—	32	44.8	34.3	35.3
Cumulative exit at 24 months or less	—	52	67.9	56.1	47.0
Percent of overall spells at 1 month	—	—	11.8	13.3	14.4
Percent of overall spells at 4 months	—	—	11.4	13.2	13.8
Percent of overall spells at 12 months	—	—	10.8	12.8	12.4
Percent of overall spells at 24 months	—	—	9.4	11.4	12.0
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	8.9	10.2	8.8
Cumulative exit at 1 year or less	—	—	22.1	19.0	22.6
Cumulative exit at 2 years or less	—	—	36.8	35.2	32.7
Cumulative exit at 4 years or less	—	—	57.6	49.8	45.2
Cumulative exit at 8 years or less	—	—	70.6	65.0	62.9
Percent of overall spells at 0.5 year	—	—	11.5	13.0	14.3
Percent of overall spells at 1 year	—	—	11.7	12.8	13.9
Percent of overall spells at 2 years	—	—	11.4	12.4	12.3
Percent of overall spells at 4 years	—	—	10.6	11.4	12.1
Percent of overall spells at 8 years	—	—	9.2	9.6	11.4

Table continues

Table III.4.4, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Re-entry Rates					
Median nonparticipation spell in months	—	13	12	13	12
Cumulative re-entry at 4 months or less	11.7	28	28.4	24.5	29.6
Cumulative re-entry at 12 months or less	39.2	50	52.1	49.8	50.1
Cumulative re-entry at 24 months or less	—	61	60.1	57.9	62.7
Exit Triggers					
Increase in earnings	26.1	—	28.7	24.4	21.2
Increase in other income	10.2	—	27.1	20.0	16.1
Increase in family size	—	—	26.8	19.4	16.1
Decrease in family size	—	—	18.8	25.5	25.3
Any trigger	—	—	27.8	22.6	18.9

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).

Notes: See Appendix B for subgroup determinations.

[a] The children of married adults subgroup corresponds to two distinct definitions of subgroups as noted above; in 1984 and 1991 it is children living in a *household* with multiple adults, while in 2001–2008 it is children in *families* with children and one adult. Please refer to Appendix B for more details.

Subgroups Characterized by Age, Disability Status, or Citizenship

We examine four subgroups defined by characteristics of particular interest to FNS: elderly adults, disabled adults, adults who are neither elderly nor disabled (and also not parents), and noncitizens.

5. Elderly Adults (8 percent of new entrants; 9 percent of overall cases)

Historically, elderly adults have very low entry rates but remain on SNAP for a long time. They represent a fifth of the at-risk population but just 8 percent of total entrants. Annual entry rates for elderly individuals rose in each successive panel, with a full 81 percent increase between the 2004 and 2008 panels. In contrast, the total population's annual entry rate rose 48 percent during this time period, indicating that elderly program entry grew faster than that of the total population. Despite these marked increases, elderly entry rates are still half those of the total population.

The median new spell length for elderly individuals (12 months) did not change across the last three panels, during the same time period in which it increased from 8 to 10 to 12 months for the full population. The elderly, whose incomes are more likely to be steady and regular, were less affected by the economic challenges that befell the general population during this time period, and subgroups such as single parents in particular.

Their ongoing spells, however, remain much longer than the average participant. Looking at the cross-sectional sample (which is more likely than a new spell analysis to capture long-term spells), the length of spells for elderly participants and the slow pace of exit from SNAP are striking. The median subsequent spell length for elderly adults is not observed during the panel period in any of the three studies, meaning that half of spells sampled early in the panel period were still active at the end of the panel (24 months later in 2001 and 2004 and 51 months later in 2008). Cumulative exit rates for elderly adults in 2008 were about half those of the total population; just 19 percent of their subsequent spells ended within two years, compared to 36 percent of the total population. Exit rates for elderly participants dropped markedly over time; their 2-year cumulative exit rate of 19 percent for 2008 is less than half their 2001 rate of 40 percent. Examining completed spells further underscores that elderly adults stay on SNAP far longer than average; in 2008 only a quarter of spells sampled early in the panel ended within eight years, compared to half for the total population. Thus the elderly account for a disproportionate share of longer spells: they contribute 10 percent of completed spells overall, but 17 percent of the very longest completed spells (those eight years or longer). More generally, the longer the spell, the greater the proportion attributable to elderly adults; in 2008, elderly individuals represented 9 percent of the SNAP caseload at one month, but 16 percent of spells lasting eight years. These findings are consistent across the 1991, 2001, and 2004 panels.

Once elderly individuals exit SNAP they are slow to rejoin the program, reflecting circumstances that tend to be stable rather than cycling with fluctuating need. Their median nonparticipation spell was 26 months in 2008, ten months longer than average, and their median time off SNAP before re-entering exceeded the maximum measurable in 1991, 2001 and 2004. Cumulative re-entry rates for this subgroup are historically 20 to 30 percent lower than for the total population across the panels.

A decrease in family size is by far the most common trigger for elderly exits across all panel years. While this probably captures some instance of spousal death, the decrease in family size trigger occurs at a much lower percentage for elderly living with other elderly than for the other living arrangements of elderly (Table II.26). In 2004, nearly half of all exits were preceded by a decrease in family size; this rate fell in 2008 but still is associated with more than a third of all SNAP exits by elderly individuals.

Table III.4.5 Historic Subgroup SNAP Dynamics Data: Elderly Adults

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	—	16.4	17.3	18.2	20.1
Percent of entrants	—	5.9	6.0	7.1	8.3
Entry Rates					
Monthly	—	0.1	0.2	0.2	0.3
Wave-based	—	—	0.6	0.8	1.1
Annual	—	1.1	1.3	1.6	2.9
Spell Length of New Spells					
Median months	—	10	12	12	12
Cumulative exit at 4 months or less	—	33	30.2	32.9	34.3
Cumulative exit at 12 months or less	—	57	50.1	52.5	52.6
Cumulative exit at 24 months or less	—	67	60.9	60.9	63.6
	—				
Percent of overall spells at 1 month	—	—	6.0	7.1	8.3
Percent of overall spells at 4 months	—	—	6.2	6.9	8.3
Percent of overall spells at 12 months	—	—	7.1	8.3	8.0
Percent of overall spells at 24 months	—	—	9.1	11.8	7.5
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	> 24	> 27	>51
Cumulative exit at 4 months or less	—	11	13.8	8.7	7.8
Cumulative exit at 12 months or less	—	25	30.3	16.0	14.6
Cumulative exit at 24 months or less	—	34	40.0	23.7	18.7
Percent of overall spells at 1 month	—	—	9.7	9.2	9.4
Percent of overall spells at 4 months	—	—	10.0	9.6	9.9
Percent of overall spells at 12 months	—	—	10.6	10.6	10.4
Percent of overall spells at 24 months	—	—	12.2	12.2	11.4
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	6.9	4.5	4.1
Cumulative exit at 1 year or less	—	—	13.4	9.9	7.7
Cumulative exit at 2 years or less	—	—	20.8	14.7	11.7
Cumulative exit at 4 years or less	—	—	28.5	16.8	17.3
Cumulative exit at 8 years or less	—	—	38.7	22.4	26.1
Percent of overall spells at 0.5 year	—	—	9.8	9.2	9.5
Percent of overall spells at 1 year	—	—	10.1	9.6	9.7
Percent of overall spells at 2 years	—	—	11.0	10.6	10.4
Percent of overall spells at 4 years	—	—	14.4	11.7	11.4
Percent of overall spells at 8 years	—	—	17.7	15.3	16.0

Table continues

Table III.4.5, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Re-entry Rates					
Median nonparticipation spell in months	—	> 30	> 24	> 27	26
Cumulative re-entry at 4 months or less	—	21	22.8	16.3	19.6
Cumulative re-entry at 12 months or less	—	30	35.9	28.8	36.1
Cumulative re-entry at 24 months or less	—	38	42.8	33.2	49.1
Exit Triggers					
Increase in earnings	—	—	16.5	20.9	17.3
Increase in other income	—	—	20.4	12.5	13.6
Increase in family size	—	—	22.0	29.6	15.0
Decrease in family size	—	—	37.7	48.4	37.7
Any trigger	—	—	22.0	21.1	19.1

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).
Notes: See Appendix B for subgroup determinations.

6. Nonelderly Disabled Adults (10 percent of new entrants; 15 percent of overall cases)

In 2004 and 2008, nonelderly disabled adults exhibited SNAP entry rates 2.5 to 3 times those of the total population and 5 to 7 times those of their elderly counterparts. As a result, they are disproportionately represented among entrants, constituting 4 percent of the at-risk population but 10 percent of entrants in the 2008 panel. This relationship held steady across both panels.

Nonelderly disabled adults also stay on SNAP longer than average; their median spell lengths for both new and subsequent spells are substantially longer than those of the total population. Their spells grew longer between 2004 and 2008, the two studies for which we observe their participation patterns. The median new spell length for this subgroup in 2008—19 months—was 60 percent longer than that of the total population. Completed spells were also longer than those of the total population; just a third of the observed completed spells of disabled adults ended by the 8-year point, compared to half of the total population. Exit rates for disabled adults decreased over time, with a subsequent spell cumulative 24-month exit rate of 23 percent in 2008, down from 34 percent in 2004.

Nonelderly disabled individuals are disproportionately long-term recipients; in any given month this subgroup comprises a greater share of ongoing cases than new cases. In 2008, disabled spells represented 10 percent of all new spells but a larger percentage of spells (15 percent) that include the common month, and a disproportionate 21 percent of completed spells that lasted eight or more years.

Nonelderly disabled individuals re-enter SNAP at a rate comparable to that of the total population; like the total population, they re-entered more quickly in 2008 than they did in 2004.

Of those nonelderly disabled individuals who exit SNAP, about one quarter re-enter within four months, across the panels. In 2008, 60 percent had returned to SNAP within 24 months versus 54 percent who returned over that period in 2004. The median time off SNAP for this subgroup was 15 months in 2008, nearly equal to that of the median for the total population.

Observed exit trigger rates for nonelderly disabled participants are lower than those of the total population for each trigger type, and rates for each trigger declined between 2004 and 2008. An increase in family size declined as a trigger for this subgroup by 53 percent over 2004 to 2008, falling from 21 to 10 percent.

Table III.4.6 Historic Subgroup SNAP Dynamics Data: Nonelderly Disabled Adults

	SIPP Panel				
SNAP Dynamics Topic	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	—	—	—	3.9	3.7
Percent of entrants	—	—	—	11.1	9.7
Entry Rates					
Monthly	—	—	—	1.5	1.8
Wave-based	—	—	—	5.5	6.8
Annual	—	—	—	10.8	15.7
Spell Length of New Spells					
Median months	—	—	—	16	19
Cumulative exit at 4 months or less	—	—	—	20.6	19.7
Cumulative exit at 12 months or less	—	—	—	47.9	41.1
Cumulative exit at 24 months or less	—	—	—	62.6	55.2
Percent of overall spells at 1 month	—	—	—	11.1	9.7
Percent of overall spells at 4 months	—	—	—	11.7	10.0
Percent of overall spells at 12 months	—	—	—	13.5	11.3
Percent of overall spells at 24 months	—	—	—	16.8	12.9
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	—	>27	>51
Cumulative exit at 4 months or less	—	—	—	9.8	8.6
Cumulative exit at 12 months or less	—	—	—	19.6	14.7
Cumulative exit at 24 months or less	—	—	—	34.0	23.4
Percent of overall spells at 1 month	—	—	—	15.6	14.8
Percent of overall spells at 4 months	—	—	—	16.2	15.3
Percent of overall spells at 12 months	—	—	—	18.1	16.6
Percent of overall spells at 24 months	—	—	—	19.0	17.4

Table continues

Table III.4.6, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	—	4.9	3.4
Cumulative exit at 1 year or less	—	—	—	11.0	8.1
Cumulative exit at 2 years or less	—	—	—	18.7	12.4
Cumulative exit at 4 years or less	—	—	—	28.0	20.9
Cumulative exit at 8 years or less	—	—	—	36.0	34.2
Percent of overall spells at 0.5 year	—	—	—	15.8	14.9
Percent of overall spells at 1 year	—	—	—	16.3	15.4
Percent of overall spells at 2 years	—	—	—	17.5	16.6
Percent of overall spells at 4 years	—	—	—	19.0	17.3
Percent of overall spells at 8 years	—	—	—	22.3	20.5
Re-entry Rates					
Median nonparticipation spell in months	—	—	—	18	15
Cumulative re-entry at 4 months or less	—	—	—	21.8	28.0
Cumulative re-entry at 12 months or less	—	—	—	42.6	48.2
Cumulative re-entry at 24 months or less	—	—	—	54.1	60.1
Exit Triggers					
Increase in earnings	—	—	—	19.1	13.9
Increase in other income	—	—	—	14.8	10.6
Increase in family size	—	—	—	21.2	10.0
Decrease in family size	—	—	—	20.9	18.7
Any trigger	—	—	—	17.7	13.2

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).

Notes: See Appendix B for subgroup determinations.

7. Individuals in Childless Families without any Elderly or Disabled Members (12 percent of new entrants; 6 percent of overall cases)

Individuals in childless families without any elderly or disabled members account for a growing percent of the at-risk population, rising from 14 to 23 percent across the five panels, their share increasing in every panel year except 2004. With modestly rising entry rates in most panels (entry rates were stable between 2001 and 2004 and rose in 2008), their share of new entrants has risen from a low of 5 percent of entrants in 1991 to a high of 12 percent in 2008. Yet they remain underrepresented in the caseload as a whole, due to entry rates equal to about half that of the total population. In 2001 and 2004—periods after the implementation of welfare reform—members of this group who were unemployed, not participating in a work activity, or exempt because of high unemployment faced restrictive time limits and were eligible for SNAP for only 3 months out of any 36-month period. These constraints put them in the at-risk pool, without the ability to enter. However, in 2008, many of these individuals would have been benefitting from waivers to these work requirements. The greatest disparity is seen in 1991, when this subgroup comprised 20 percent of the at-risk population but just 5 percent of entrants.

New spells for individuals in childless families without any elderly or disabled members in the at-risk population tend to be shorter and exit rates higher than for the total population. Their median new spell length in 2008 was nine months, three months shorter than that of the total population. Cumulative exit percentages for this group are consistently about 20 percent higher than those of the total population. This may in part reflect cases terminated due to noncompliance with work requirements, prior to the implementation of waivers.

Ongoing spells for this group, however, grew longer in 2008, and cumulative exit rates fell across successive panels. This suggests that those in this subgroup already on SNAP have a greater need than those who cycle on and off more quickly than average (who are thus captured as new entrants). The median subsequent spell length for these adults rose markedly over time: from five months in 2001 to 11 months in 2004, and to 20 months in 2008. In 2001, 87 percent exited their subsequent spells by 24 months. Although 2004 showed lower rates of exit, with 70 percent exiting within 24 months, this was still higher than the 55 percent who exited within 24 months in 1991, before the time limits were put in place. Perhaps due to the recession, 2008 rates are the same as those observed in 1991.

We see similar patterns in the completed spell lengths for this subgroup, with generally longer spells in each successive panel but still much shorter spells and faster exits than those of the total population. This is also observed across panels in their share of overall spells: these participants account for 6 percent of overall subsequent and completed spells as of the first month, but this share declines among longer spells, to 4 percent of two-year spells and 2 percent of spells that lasted eight years.

In addition to relatively brief spells on SNAP, these adults also spend more time off the program before re-entering than any other subgroup except for the elderly, suggesting a subgroup of individuals who cycle in and out of SNAP following long periods of employment. For

nonworking individuals not benefiting from waivers, these relatively long nonparticipation periods also may reflect the required waiting period before regaining eligibility. Their median nonparticipation spells in 1991 and 2008 were seven months longer than those of the total population and were beyond the maximum measurable in 2001 and 2004 (more than 24 and 27 months respectively). Cumulative re-entry rates for this subgroup are historically lower than average, indicating low dependency relative to the total population.

Triggers are observed to precede exits more often for nonelderly nondisabled adults than for the total population. More than 40 percent of exits each year were preceded by a decrease in family size, suggesting exits may be triggered by changes in eligibility. Consistent with individuals who cycle on and off employment (using SNAP to fill gaps), an increase in earnings preceded a markedly higher share of exits than those of total population across all panels. Despite declines in the incidence of each type of trigger event for this subgroup in each successive panel, the 2008 rates were still more than one and a half times those of the total population.

Table III.4.7 Historic Subgroup SNAP Dynamics Data: Individuals in Childless Families without any Elderly or Disabled Members

	SIPP Panel				
SNAP Dynamics Topic	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	13.5	20.1	21.9	20.9	23.0
Percent of entrants	8.1	4.9	11.0	10.2	12.1
Entry Rates					
Monthly	—	0.1	0.2	0.2	0.3
Wave-based	1.2	0.1	0.9	1.0	1.4
Annual	—	0.8	2.4	2.4	3.8
Spell Length of New Spells					
Median months	5	4	5	7	9
Cumulative exit at 4 months or less	48.1	52	46.6	38.4	30.6
Cumulative exit at 12 months or less	78.2	76	73.7	69.7	60.1
Cumulative exit at 24 months or less	87.4	78	82.7	85.7	75.8
Percent of overall spells at 1 month	—	—	10.9	10.1	12.1
Percent of overall spells at 4 months	—	—	9.9	9.1	11.9
Percent of overall spells at 12 months	—	—	6.9	7.0	10.3
Percent of overall spells at 24 months	—	—	6.2	6.3	8.9

Table continues

Table III.4.7, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	5	11	20
Cumulative exit at 4 months or less	—	19	47.9	33.0	21.0
Cumulative exit at 12 months or less	—	40	71.6	51.3	36.3
Cumulative exit at 24 months or less	—	55	86.6	69.7	55.3
Percent of overall spells at 1 month	—	—	3.9	5.2	5.5
Percent of overall spells at 4 months	—	—	2.8	4.3	5.0
Percent of overall spells at 12 months	—	—	1.8	3.6	4.5
Percent of overall spells at 24 months	—	—	1.2	2.9	3.7
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	32.3	24.0	14.0
Cumulative exit at 1 year or less	—	—	56.8	41.8	25.7
Cumulative exit at 2 years or less	—	—	76.9	56.0	42.9
Cumulative exit at 4 years or less	—	—	90.8	68.7	58.0
Cumulative exit at 8 years or less	—	—	94.3	78.9	75.8
Percent of overall spells at 0.5 year	—	—	4.0	5.3	5.5
Percent of overall spells at 1 year	—	—	3.0	4.3	5.0
Percent of overall spells at 2 years	—	—	1.7	3.5	4.2
Percent of overall spells at 4 years	—	—	0.8	2.6	3.8
Percent of overall spells at 8 years	—	—	0.6	1.7	2.4
Re-entry Rates					
Median nonparticipation spell in months	—	27	> 24	> 27	23
Cumulative re-entry at 4 months or less	7.8	8	16.1	15.9	20.2
Cumulative re-entry at 12 months or less	32.1	40	32.5	29.1	38.6
Cumulative re-entry at 24 months or less	—	47	42.9	40.7	51.8
Exit Triggers					
Increase in earnings	28.6	—	53.3	40.2	29.4
Increase in other income	13.9	—	42.9	31.1	23.4
Increase in family size	—	—	52.0	36.9	16.7
Decrease in family size	—	—	57.4	52.6	42.3
Any trigger	—	—	49.3	36.9	27.4

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).

Notes: See Appendix B for subgroup determinations.

8. Noncitizens (9 percent of new entrants; 9 percent of overall cases)

Noncitizens are a group of SNAP recipients of particular interest to policymakers due to restrictions placed on the eligibility of legally resident noncitizens. In 2008, they represented 7 percent of the at-risk population and 9 percent of SNAP entrants. In 1991, noncitizens comprised 11 percent of entrants, declining to 7 percent in 2001 and 6 percent in 2004, following restrictions on the eligibility of legally resident noncitizens.[62] This subgroup was slightly underrepresented among new SNAP entrants in 2004 (7 percent of the at-risk population but only 6 percent of entrants), a result of lower than average entry rates in that panel only. These grew substantially between the 2004 and 2008 panels, and noncitizens now exhibit slightly higher than average entry rates.

Noncitizens spend less time than average on SNAP. Their median new spell lengths are equal to or shorter than those of the total population, across panels. Their subsequent and completed SNAP spells have been consistently shorter than average, and their cumulative exit from SNAP relatively rapid. While this pattern holds across time, noncitizens exited more slowly in 2008 than in earlier panels, and these 2008 rates were closer to those of the total population than in 2004. As a percentage of all SNAP spells, noncitizens' shares dropped between 2001 and 2004 but rose slightly in 2008. Consistently, across all panel years, their share of spells declines with spell length.

In 2008, noncitizens re-entered SNAP at rates very similar to those of the total population, spending on average 15 months off SNAP, with a quarter of exiters returning within four months and 58 percent within two years. While re-entry rates for noncitizens closely resembled those of the total population across panels, the length of the actual nonparticipation spells for noncitizens has changed considerably over time, perhaps due to changing regulations about this subgroups' participation in SNAP, as changes concerning this population were enacted in 1996, 1998, and 2002 (Eslami 2011). In earlier panels, noncitizens exhibited substantially longer than average stays off SNAP before returning. In 1991, for example, more than half of noncitizens who exited SNAP were still off the program 30 months later. Noncitizens' median nonparticipation spell length decreased to 23 months in 2001, and dropped another 40 percent to 13 months in 2004. Median months off SNAP rose to 15 months in 2008, an increase during a time period when median spell length declined for the general population.

A decrease in family size was an observed exit trigger for a third of noncitizens in 2008, a rate higher than that exhibited by the total population. Triggers preceded exits by noncitizens less often in 2008 than in 2004.

[62] The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 made most noncitizens ineligible; however, many noncitizens had eligibility restored by the Agricultural Research, Extension and Education Reform Act of 1998 and the Farm Security and Rural Investment Act of 2002 (Eslami 2011).

Table III.4.8 Historic Subgroup SNAP Dynamics Data: Noncitizens

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	—	5.8	6.4	7.3	6.8
Percent of entrants	—	11.2	6.7	6.0	8.7
Entry Rates					
Monthly	—	0.5	0.5	0.4	0.9
Wave-based	—	—	1.9	1.7	3.5
Annual	—	3.7	4.7	3.3	8.0
Spell Length of New Spells					
Median months	—	8	7	8	12
Cumulative exit at 4 months or less	—	37	42.9	31.0	27.9
Cumulative exit at 12 months or less	—	59	69.3	59.9	51.5
Cumulative exit at 24 months or less	—	69	78.3	69.7	70.7
	—				
Percent of overall spells at 1 month	—	—	6.8	6.0	8.8
Percent of overall spells at 4 months	—	—	6.6	6.5	8.8
Percent of overall spells at 12 months	—	—	5.5	5.4	9.1
Percent of overall spells at 24 months	—	—	6.0	5.5	8.3
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	12	20	34
Cumulative exit at 4 months or less	—	8	31.5	26.5	13.2
Cumulative exit at 12 months or less	—	22	50.1	38.3	24.7
Cumulative exit at 24 months or less	—	43	64.9	53.6	42.5
Percent of overall spells at 1 month	—	—	7.4	5.0	7.1
Percent of overall spells at 4 months	—	—	6.8	4.8	7.0
Percent of overall spells at 12 months	—	—	6.0	4.1	7.0
Percent of overall spells at 24 months	—	—	6.0	4.0	6.3
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	15.5	15.0	6.7
Cumulative exit at 1 year or less	—	—	29.4	24.2	13.5
Cumulative exit at 2 years or less	—	—	35.9	32.5	26.4
Cumulative exit at 4 years or less	—	—	54.4	41.8	43.5
Cumulative exit at 8 years or less	—	—	71.3	58.6	68.3
Percent of overall spells at 0.5 year	—	—	7.5	5.1	7.2
Percent of overall spells at 1 year	—	—	7.0	4.6	7.1
Percent of overall spells at 2 years	—	—	6.8	4.6	7.2
Percent of overall spells at 4 years	—	—	7.5	4.7	6.3
Percent of overall spells at 8 years	—	—	4.9	4.4	3.8

Table continues

Table III.4.8, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Re-entry Rates					
Median nonparticipation spell in months	—	> 30	23	13	15
Cumulative re-entry at 4 months or less	—	27	25.4	24.5	27.3
Cumulative re-entry at 12 months or less	—	36	44.0	49.0	49.0
Cumulative re-entry at 24 months or less	—	46	50.4	55.1	58.2
Exit Triggers					
Increase in earnings	—	—	29.3	29.2	20.0
Increase in other income	—	—	23.7	13.4	16.3
Increase in family size	—	—	20.9	35.5	13.3
Decrease in family size	—	—	29.6	35.7	33.2
Any trigger	—	—	28.3	25.8	19.9

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).
Notes: See Appendix B for subgroup determinations.

Subgroups Characterized by Sources of Family Income

Finally, we examine four subgroups defined by the presence of key types of income: earnings, TANF, Social Security, and Supplemental Security Income (SSI). Individuals in these subgroups do not necessarily receive the source of income themselves; rather, this income was reported by a member of their family—the presumed SNAP unit. These subgroups include adults and children. A fifth subgroup in this section consists of individuals with no reported income by any members of their family.

9. Individuals in Families with Earnings (69 percent of new entrants; 54 percent of overall cases)

The largest subgroup we examine is families with earnings, over three-quarters of the population at risk—a share that has held relatively steady across the five panels studied, ranging from a high of 85 percent of the at-risk population in 1991 to a low of 78 percent in 2004 and 2008. Although their entry rates have generally risen across the panels to 2008, individuals with earnings enter SNAP at slightly lower rates than average. Therefore, they constitute a slightly lower percentage of new entrants than they do of the at-risk population.

In most study years, the new spell length for these individuals is or one or two months lower than that of the total population; the median in 2008 was 11 months, one month less than that of the total population. This subgroup exhibits shorter than average subsequent and completed spells, as fluctuating earnings may make it easier and/or necessary to leave SNAP. Cumulative exit percentages for those with earnings are consistently higher than that of the total population for all types of spells.

This is a large subgroup. Although their percentage of overall SNAP spells consistently drops with increasing spell length, in 2008 they still comprised 45 percent of overall subsequent spells that lasted two years or longer. In 2004 their share of the very longest cases (those lasting eight years or more) dropped to 38 percent, but it climbed to 43 percent of overall 8-year cases in 2008. Despite their tendency toward shorter spells, there is still a large portion of individuals in families with earnings who receive SNAP for a very long time, suggesting earnings that are consistently low.

Individuals in families with earnings have historically returned to SNAP more slowly than average, with median spells off SNAP before re-entry four to five months longer than those among the total population in 1991, 2001, and 2004. In 2008, however, their median "off spell" decreased by a third to 17 months, just one month longer than that of the total population.

A decrease in family size preceded a third of exits for individuals with earnings across all years, while an increase in earnings was an exit trigger for 20 to 25 respectively in 2004 and 2008. Incidence of trigger events declined in each successive panel for all trigger types except a decrease in family size. Still, trigger events were observed more commonly for individuals with earnings than for the general population.

Table III.4.9 Historic Subgroup SNAP Dynamics Data: Individuals in Families with Earnings

	SIPP Panel				
SNAP Dynamics Topic	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	80.0	85.1	81.5	78.3	78.1
Percent of entrants	79.2	73.0	69.2	65.6	69.3
Entry Rates					
Monthly	—	0.3	0.4	0.4	0.6
Wave-based	2.0	—	1.5	1.8	2.4
Annual	—	2.4	3.8	3.9	5.9
Spell Length of New Spells					
Median months	5	8	8	8	11
Cumulative exit at 4 months or less	47.8	36	35.2	30.2	28.1
Cumulative exit at 12 months or less	76.8	63	65.9	61.9	55.0
Cumulative exit at 24 months or less	87.9	76	78.7	78.9	69.9
Percent of overall spells at 1 month	—	—	69.2	65.5	69.2
Percent of overall spells at 4 months	—	—	68.6	64.3	68.9
Percent of overall spells at 12 months	—	—	63.4	58.8	65.1
Percent of overall spells at 24 months	—	—	56.0	47.2	63.8

Table continues

Table III.4.9, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	16	19	29
Cumulative exit at 4 months or less	—	20	24.7	20.7	16.2
Cumulative exit at 12 months or less	—	40	46.8	39.9	32.1
Cumulative exit at 24 months or less	—	58	64.7	57.9	46.3
Percent of overall spells at 1 month	—	—	55.7	53.7	53.9
Percent of overall spells at 4 months	—	—	53.0	51.3	51.8
Percent of overall spells at 12 months	—	—	50.4	46.7	48.8
Percent of overall spells at 24 months	—	—	47.4	43.5	45.4
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	12.9	11.2	8.7
Cumulative exit at 1 year or less	—	—	25.4	24.3	19.0
Cumulative exit at 2 years or less	—	—	41.1	36.8	30.9
Cumulative exit at 4 years or less	—	—	58.2	53.8	44.9
Cumulative exit at 8 years or less	—	—	69.1	67.1	60.5
Percent of overall spells at 0.5 year	—	—	55.7	53.4	53.7
Percent of overall spells at 1 year	—	—	53.9	51.6	52.3
Percent of overall spells at 2 years	—	—	51.1	48.3	48.7
Percent of overall spells at 4 years	—	—	48.4	43.8	46.4
Percent of overall spells at 8 years	—	—	46.7	38.3	43.3
Re-entry Rates					
Median nonparticipation spell in months	—	24	21	24	17
Cumulative re-entry at 4 months or less	12.0	20	20.8	20.9	24.5
Cumulative re-entry at 12 months or less	36.4	39	41.5	40.6	44.8
Cumulative re-entry at 24 months or less	—	51	51.2	50.5	56.1
Exit Triggers					
Increase in earnings	30.1	—	26.9	25.3	20.3
Increase in other income	21.2	—	23.8	21.8	18.1
Increase in family size	—	—	31.4	24.8	17.6
Decrease in family size	—	—	31.0	32.2	31.1
Any trigger	—	—	26.3	24.2	20.2

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).

Notes: See Appendix B for subgroup determinations.

10. Individuals in Families with TANF (5 percent of new entrants; 12 percent of overall cases)

Individuals in families with TANF income are a small subgroup within the population at risk (less than 1 percent), at least partially because most TANF participants already participate in SNAP due to categorical eligibility. Individuals in families with TANF who are not already on SNAP have the highest entry rate of any subgroup—six to ten times that of the general population—and thus, despite their low presence in the at-risk population, they have accounted for 5 to 7 percent of SNAP entrants across 2001, 2004, and 2008. Entry rates for this subgroup grew substantially between 2004 and 2008; the annual entry rate for TANF-income family members in 2008 was 43 percent, a substantial rise from 26 percent in 2004.

Their median new spell length in 2008 was nine months, shorter than that of the total population—a change for this subgroup, which in 2001 exhibited new spells that were four months longer than the median for the total population. Ongoing spells grew markedly across panels, suggesting that circumstances may be worse for TANF families already on SNAP (and thus captured in the cross-sectional sample) than those who entered during the panel period. Exit rates measured for subsequent spells dropped by more than 40 percent between 2004 and 2008, which may reflect effects of the recession on these individuals living in very low-income families.

Individuals in families with TANF account for nearly equal shares of short and long SNAP spells. In 2008, those with TANF accounted for 5 percent of new spells regardless of length, and 12 percent of both 1-month and 8-year completed spells. This is a change from 2001, for which this subgroup contributed a relatively greater share of very long spells.

Individuals in families with TANF stay off SNAP for a shorter time than the general population. Their median time off SNAP was 12 months in 2001, 13 months in 2004, and 8 months in 2008, compared to 16, 20, and 16 months for the total population. Compared to the total population, they re-enter at higher rates, especially in the first four months, reflecting how quickly circumstances can change for this subgroup. Across the panels, about one third of TANF recipients who exit SNAP re-enter within just four months, and in 2008 fully three-quarters returned to SNAP within 24 months.

A decrease in family size is the most common exit trigger for individuals with TANF income, preceding exits for nearly one in four spells in 2004 and one in five spells in 2001 and 2008. Trigger events occurred less frequently in 2001 than later years among this subgroup, and trigger events across all three panels were observed for this subgroup to a lesser extent than the total population.

Table III.4.10 Historic Subgroup SNAP Dynamics Data: Individuals in Families with TANF

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	—	—	0.7	0.8	0.5
Percent of entrants	—	—	6.3	7.0	4.7
Entry Rates					
Monthly	—	—	4.3	4.5	5.9
Wave-based	—	—	16.6	17.6	22.3
Annual	—	—	26.3	26.0	42.6
Spell Length of New Spells					
Median months	—	—	12	10	9
Cumulative exit at 4 months or less	—	—	27.1	32.1	29.8
Cumulative exit at 12 months or less	—	—	51.7	58.5	53.3
Cumulative exit at 24 months or less	—	—	65.0	74.1	67.8
Percent of overall spells at 1 month	—	—	6.3	7.1	4.7
Percent of overall spells at 4 months	—	—	6.8	7.2	4.5
Percent of overall spells at 12 months	—	—	6.8	7.4	4.3
Percent of overall spells at 24 months	—	—	9.2	8.9	4.6
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	> 24	> 27	>51
Cumulative exit at 4 months or less	—	—	12.6	12.8	6.6
Cumulative exit at 12 months or less	—	—	31.7	28.1	15.3
Cumulative exit at 24 months or less	—	—	50.0	42.7	24.8
Percent of overall spells at 1 month	—	—	23.9	19.9	12.4
Percent of overall spells at 4 months	—	—	25.8	20.3	13.4
Percent of overall spells at 12 months	—	—	27.3	20.8	14.0
Percent of overall spells at 24 months	—	—	28.2	21.6	14.7
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	5.7	5.3	3.9
Cumulative exit at 1 year or less	—	—	10.6	15.2	6.7
Cumulative exit at 2 years or less	—	—	19.8	25.5	12.6
Cumulative exit at 4 years or less	—	—	37.4	40.0	23.9
Cumulative exit at 8 years or less	—	—	54.6	46.4	48.6
Percent of overall spells at 0.5 year	—	—	23.6	19.9	12.4
Percent of overall spells at 1 year	—	—	24.7	20.5	12.8
Percent of overall spells at 2 years	—	—	27.8	20.6	14.0
Percent of overall spells at 4 years	—	—	30.7	20.8	14.5
Percent of overall spells at 8 years	—	—	32.4	22.2	12.0

Table continues

Table III.4.10, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Re-entry Rates					
Median nonparticipation spell in months	—	—	12	13	8
Cumulative re-entry at 4 months or less	—	—	35.3	30.8	35.5
Cumulative re-entry at 12 months or less	—	—	55.9	48.4	63.3
Cumulative re-entry at 24 months or less	—	—	64.9	60.3	75.8
Exit Triggers					
Increase in earnings	—	—	18.0	17.3	10.2
Increase in other income	—	—	10.7	12.2	10.5
Increase in family size	—	—	12.6	21.7	11.5
Decrease in family size	—	—	19.0	24.6	21.3
Any trigger	—	—	15.2	16.0	12.1

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).
Notes: See Appendix B for subgroup determinations.

11. Individuals in families with Social Security Income (27 percent of new entrants; 27 percent of overall cases)

About one quarter of both the at-risk population and the entrant population are members of families with Social Security income. Entry rates for this subgroup are nearly identical to those of the total population, with higher rates in 2008 than 2004.

New entrants from families with Social Security income stay on SNAP as long as and have exit rates comparable to the total population, with about half exiting SNAP in 12 months and two-thirds exiting within 24 months. Like the total population, they stayed on longer in 2008 than they did in 2004. Those in the cross-sectional sample also stayed on SNAP longer than they did in 2004, and markedly longer than average. Their median subsequent spell length was not observed during the panel period (meaning it exceeded 51 months); only 9 percent exited within one year and just 28 percent within four years. Further evidence that families receiving Social Security income are disproportionately long-term recipients is that their shares of ongoing spells increase with length. In 2008, their spells represented 27 percent of overall subsequent and completed spells, but 34 percent of completed spells that lasted eight or more years.

Individuals living in families with Social Security re-enter SNAP at a rate comparable to that of the total population; like the total population, they re-entered more quickly in 2008 than they did in 2004. In 2008, fully 60 percent returned to SNAP within 24 months, compared to 50 percent who returned within 24 months in 2004. The median time off SNAP for this subgroup was 16 months in 2008, equal to that of the total population and 9 months sooner than observed in 2004.

A decrease in family size preceded nearly a third of SNAP exits in 2004 and 2008 for families with Social Security income, about the same level as in the general population. Rates of all other trigger events for this subgroup declined during that time period, especially an increase in family size and an increase in earnings.

Table III.4.11 Historic Subgroup SNAP Dynamics Data: Individuals in Families with Social Security Income

	SIPP Panel				
SNAP Dynamics Topic	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	—	—	—	24.6	26.4
Percent of entrants	—	—	—	24.0	26.5
Entry Rates					
Monthly	—	—	—	0.5	0.7
Wave-based	—	—	—	2.0	2.7
Annual	—	—	—	4.0	6.4
Spell Length of New Spells					
Median months	—	—	—	9	12
Cumulative exit at 4 months or less	—	—	—	29.6	30.9
Cumulative exit at 12 months or less	—	—	—	58.0	53.6
Cumulative exit at 24 months or less	—	—	—	71.7	66.8
Percent of overall spells at 1 month	—	—	—	23.9	26.5
Percent of overall spells at 4 months	—	—	—	24.0	26.5
Percent of overall spells at 12 months	—	—	—	25.2	24.2
Percent of overall spells at 24 months	—	—	—	31.7	23.7
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	—	>27	>51
Cumulative exit at 4 months or less	—	—	—	12.3	11.8
Cumulative exit at 12 months or less	—	—	—	26.7	20.5
Cumulative exit at 24 months or less	—	—	—	41.3	28.0
Percent of overall spells at 1 month	—	—	—	25.8	26.7
Percent of overall spells at 4 months	—	—	—	26.4	26.8
Percent of overall spells at 12 months	—	—	—	27.3	28.0
Percent of overall spells at 24 months	—	—	—	27.5	29.5

Table continues

Table III.4.11, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	—	6.6	5.6
Cumulative exit at 1 year or less	—	—	—	15.2	9.1
Cumulative exit at 2 years or less	—	—	—	25.3	17.0
Cumulative exit at 4 years or less	—	—	—	31.9	27.4
Cumulative exit at 8 years or less	—	—	—	43.8	41.8
Percent of overall spells at 0.5 year	—	—	—	25.9	26.9
Percent of overall spells at 1 year	—	—	—	26.3	27.2
Percent of overall spells at 2 years	—	—	—	27.0	29.0
Percent of overall spells at 4 years	—	—	—	28.7	29.0
Percent of overall spells at 8 years	—	—	—	35.0	34.3
Re-entry Rates					
Median nonparticipation spell in months	—	—	—	25	16
Cumulative re-entry at 4 months or less	—	—	—	19.4	24.4
Cumulative re-entry at 12 months or less	—	—	—	40.7	45.0
Cumulative re-entry at 24 months or less	—	—	—	49.5	59.8
Exit Triggers					
Increase in earnings	—	—	—	24.6	19.1
Increase in other income	—	—	—	16.1	14.8
Increase in family size	—	—	—	25.4	17.4
Decrease in family size	—	—	—	29.1	29.9
Any trigger	—	—	—	22.1	19.0

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).
Notes: See Appendix B for subgroup determinations.

12. Individuals in Families with SSI (17 percent of SNAP entrants; 23 percent of overall cases)

In 2004 and 2008, individuals living in a family receiving SSI constituted a very small share of the at-risk population, in part because a large percentage of this group is categorically eligible for SNAP and already in the program[63]. SSI recipients exhibited SNAP entry rates of three to four times those of the total population, and as a result are disproportionately represented among entrants, constituting 5 percent of the at-risk population but 17 percent of entrants in 2008, a relationship that held steady across both panels.

[63] This subgroup includes SSI recipients from the state of California, however, California SSI recipients are not eligible to receive SNAP (they instead receive in-kind assistance). California SSI recipients have been retained in the analysis in order to preserve comparability to past studies.

New entrants from SSI families stay on SNAP slightly longer than average, with median spell lengths about 1 month longer than that for the total population in both 2004 and 2008. Like the total population, they stayed on longer in 2008 than they did in 2004. Those in the cross-sectional sample, however, stayed on SNAP markedly longer after the beginning of the panel period than average. Their median subsequent spell length was not observed during the panel period (meaning it exceeded 51 months) and only a fifth exited within one year and a quarter within two years. Their share of ongoing spells increases with spell length, further evidence that individuals in families receiving SSI income are disproportionately long-term recipients. Subsequently, individuals in families with SSI account for a disproportionate share of the long-term caseload, comprising a much greater percentage of ongoing than new cases and a relatively high share of especially long cases. In 2008, SSI spells represented 17 percent of all new spells but 23 percent of overall subsequent and completed spells, and 36 percent of completed spells that lasted eight or more years. This pattern is consistent across panel years.

Individuals living in families with SSI spend fewer months off SNAP than the total population; their average time off was 12 months in 2008, four months shorter than that of the total population. Like the total population, they re-entered more quickly in 2008 than they did in 2004, exhibiting a 20 percent shorter nonparticipation spell. In 2008, fully 68 percent had returned to SNAP within 24 months, more than the 61 percent who returned in that same time in 2004.

This subgroup experiences trigger events at rates just below that of the total population. Like their counterparts with family Social Security income, a decrease in family size preceded about a quarter of SNAP exits in 2004 and 2008 for individuals in families with SSI, about the same level as in the general population. All other trigger events for this subgroup declined during that time period, especially an increase in family size and an increase in other income.

Table III.4.12 Historic Subgroup SNAP Dynamics Data: Individuals in Families with Supplemental Security Income

	SIPP Panel				
SNAP Dynamics Topic	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	—	—	—	4.7	4.8
Percent of entrants	—	—	—	17.9	16.7
Entry Rates					
Monthly	—	—	—	2.0	2.4
Wave-based	—	—	—	7.8	9.3
Annual	—	—	—	14.5	20.4
Spell Length of New Spells					
Median months	—	—	—	11	13
Cumulative exit at 4 months or less	—	—	—	28.5	28.7
Cumulative exit at 12 months or less	—	—	—	58.7	49.2
Cumulative exit at 24 months or less	—	—	—	71.2	63.7
Percent of overall spells at 1 month	—	—	—	17.9	16.8
Percent of overall spells at 4 months	—	—	—	18.9	17.1
Percent of overall spells at 12 months	—	—	—	16.7	17.4
Percent of overall spells at 24 months	—	—	—	24.4	17.7
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	—	>27	>51
Cumulative exit at 4 months or less	—	—	—	10.7	11.8
Cumulative exit at 12 months or less	—	—	—	21.5	20.2
Cumulative exit at 24 months or less	—	—	—	35.8	28.4
Percent of overall spells at 1 month	—	—	—	25.0	22.7
Percent of overall spells at 4 months	—	—	—	25.8	22.5
Percent of overall spells at 12 months	—	—	—	28.5	23.9
Percent of overall spells at 24 months	—	—	—	29.6	25.1
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	—	5.5	5.5
Cumulative exit at 1 year or less	—	—	—	11.6	8.5
Cumulative exit at 2 years or less	—	—	—	19.5	14.0
Cumulative exit at 4 years or less	—	—	—	26.7	23.7
Cumulative exit at 8 years or less	—	—	—	35.4	38.8
Percent of overall spells at 0.5 year	—	—	—	25.1	22.8
Percent of overall spells at 1 year	—	—	—	25.8	23.1
Percent of overall spells at 2 years	—	—	—	27.5	25.1
Percent of overall spells at 4 years	—	—	—	30.5	26.1
Percent of overall spells at 8 years	—	—	—	40.7	36.1

Table continues

Table III.4.12, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Re-entry Rates					
Median nonparticipation spell in months	—	—	—	15	12
Cumulative re-entry at 4 months or less	—	—	—	24.2	31.6
Cumulative re-entry at 12 months or less	—	—	—	47.8	54.8
Cumulative re-entry at 24 months or less	—	—	—	60.5	68.1
Exit Triggers					
Increase in earnings	—	—	—	21.3	17.1
Increase in other income	—	—	—	14.9	11.0
Increase in family size	—	—	—	24.8	15.4
Decrease in family size	—	—	—	24.8	26.7
Any trigger	—	—	—	19.1	15.3

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).
Notes: See Appendix B for subgroup determinations.

13. Individuals in Families with Zero Income (7 percent of SNAP entrants; 7 percent of overall cases)

Individuals in families with zero income traditionally have low SNAP participation rates despite no apparent source of financial support. Entry rates for this subgroup were two to four times those of the total population for 2004 and 2008, resulting in a disproportionate share of new cases. In 2004 and 2008, individuals living in families with no income comprised just 2 percent of the at-risk population but 7 to 8 percent of entrants. Their entry rates held steady across the two panels for which this subgroup was observed.

Individuals in zero-income families stay on SNAP longer than average, with a median new spell length of 16 months (four months longer than average) and a median subsequent spell length of greater than 51 months. Time on SNAP increased for this subgroup between 2004 and 2008 as exit rates declined by as much as 40 percent for subsequent SNAP spells. As a percentage of all SNAP spells, individuals in families with zero income account for 7 percent of new, subsequent, and completed spells; this share does not vary significantly by spell length.

Individuals in families with zero income re-enter SNAP more quickly than average, with a shorter nonparticipation spell and higher rate of re-entry than the general population suggesting unstable circumstances. Zero-income individuals re-entered more quickly in 2008 than they did in 2004, with a median time off SNAP that was four fewer months. Their cumulative re-entry rates were higher in 2008 at the 4-month and 12-month point, but not at the 24-month point, a pattern not observed in other subgroups; in 2004 three-quarters of those who exited returned within two years, but in 2008 this share dropped to about two-thirds, despite increases in the re-entry rate at 4 and 12 months.

Zero-income family members experience exit triggers less often than the total population, but this group, which is devoid of all income at the start of their SNAP spells**,** seems especially plagued by income issues; in 2008 they experienced the trigger of an increase in unearned income at half the rate of the general population. Likewise, they are less likely than the average participant to report an increase in earnings preceding a SNAP exit. A decrease in family size is the most common trigger event preceding their SNAP exits in 2008 (27 percent); increase and decrease in family size are equally the most common exit triggers observed in 2004 at 25 percent.

Table III.4.13 Historic Subgroup SNAP Dynamics Data: Individuals in Families with Zero Income

	SIPP Panel				
SNAP Dynamics Topic	1984	1991	2001	2004	2008
At-Risk Populations and SNAP Entrants					
Percent of the at-risk population	—	—	—	2.0	2.2
Percent of entrants	—	—	—	8.0	6.6
Entry Rates					
Monthly	—	—	—	2.1	2.1
Wave-based	—	—	—	6.9	6.9
Annual	—	—	—	11.9	12.7
Spell Length of New Spells					
Median months	—	—	—	15	16
Cumulative exit at 4 months or less	—	—	—	20.9	21.6
Cumulative exit at 12 months or less	—	—	—	45.2	44.9
Cumulative exit at 24 months or less	—	—	—	67.6	61.1
Percent of overall spells at 1 month	—	—	—	8.0	6.6
Percent of overall spells at 4 months	—	—	—	8.1	6.4
Percent of overall spells at 12 months	—	—	—	9.8	7.6
Percent of overall spells at 24 months	—	—	—	9.8	8.2
Subsequent Spell Length for Cross-sectional Sample					
Median months	—	—	—	>27	>51
Cumulative exit at 4 months or less	—	—	—	16.3	9.5
Cumulative exit at 12 months or less	—	—	—	32.5	20.2
Cumulative exit at 24 months or less	—	—	—	47.6	33.4
Percent of overall spells at 1 month	—	—	—	6.5	7.0
Percent of overall spells at 4 months	—	—	—	6.4	7.3
Percent of overall spells at 12 months	—	—	—	6.3	7.2
Percent of overall spells at 24 months	—	—	—	6.3	7.2

Table continues

Table III.4.13, *continued*

SNAP Dynamics Topic	SIPP Panel				
	1984	1991	2001	2004	2008
Completed Spell Length for Cross-sectional Sample					
Cumulative exit at 6 months or less	—	—	—	10.3	5.7
Cumulative exit at 1 year or less	—	—	—	19.5	11.7
Cumulative exit at 2 years or less	—	—	—	33.3	23.1
Cumulative exit at 4 years or less	—	—	—	44.0	33.3
Cumulative exit at 8 years or less	—	—	—	51.9	50.4
Percent of overall spells at 0.5 year	—	—	—	6.5	7.0
Percent of overall spells at 1 year	—	—	—	6.4	7.0
Percent of overall spells at 2 years	—	—	—	6.0	6.9
Percent of overall spells at 4 years	—	—	—	6.5	7.1
Percent of overall spells at 8 years	—	—	—	5.5	5.3
Re-entry Rates					
Median nonparticipation spell in months	—	—	—	16	12
Cumulative re-entry at 4 months or less	—	—	—	27.6	35.2
Cumulative re-entry at 12 months or less	—	—	—	45.5	52.0
Cumulative re-entry at 24 months or less	—	—	—	74.8	67.6
Exit Triggers					
Increase in earnings	—	—	—	22.8	16.1
Increase in other income	—	—	—	15.2	7.4
Increase in family size	—	—	—	28.1	10.9
Decrease in family size	—	—	—	24.6	26.6
Any trigger	—	—	—	19.9	13.0

Sources: Decision Demographics tabulations of the 2008 SIPP Panel; 2004 from Mabli et al. (2011a), 2001 from Cody et al. (2007), 1991 from Gleason (1998), 1984 from Burstein (1993).
Notes: See Appendix B for subgroup determinations.

C. The Influence of Subgroup Dynamics on the Composition of the SNAP Total Caseload

The overall SNAP caseload grows relative to a previous year or SIPP panel period if more individuals enter SNAP or if participants stay on SNAP longer, or of course, if both occur—which is what happened in the 2008 panel period. Between 2004 and 2008, entry rates increased for the total population and the median length of new and subsequent spells increased. This led to a marked percentage increase in total SNAP participants during this period. These types of changes varied across subgroups, though, and if a subgroup is large or the changes are extreme, individual subgroup changes can have a noticeable effect on the overall SNAP population, highlighting the importance of a subgroup-level caseload analysis of SNAP dynamics.

In this section, we describe how changes observed in the SNAP dynamics of subgroups between the 2004 and 2008 SIPP panels affect their total distribution in the 2008 panel within: (1) the at-risk population, (2) new SNAP entrants, and (3) overall ongoing caseload, as measured by the cross-sectional sample. All three of these populations saw extensive growth from the 2004 to 2008 panels. The specific dynamics we discuss are illustrated in Table III.5, and the discussion refers solely to changes observed between the 2004 and 2008 SIPP panels. Subgroups profiled are neither mutually exclusive nor exhaustive.

Table III.5 Subgroup Dynamics: 2008 Panel Compared to 2004 Panel

	Size and Share of						
	At-risk Population	New Entrant Population	Caseload (Cross-Sectional Sample)	Entry Rates	New-Entrant Spells	Subsequent/ Completed Spells for Cross-Section	Time Before Re-entry
Subgroups Characterized by Family Structure							
1. Single Parents	Decreased size Decreased share	Decreased size Decrease share	Increased size Decreased share	Higher	Much longer	Much longer	Much shorter
2. Children of Single Parents	Decreased size Decreased share	Decreased size Decrease share	Increased size Decreased share	Higher	Much longer	Much longer	Shorter
3. Married Adults With Children	Decreased size Decreased share	Increased size Increased share	Increased size Increased share	Much higher	Longer	Much longer	Shorter
4. Children of Married Adults	Decreased size Decreased share	Increased size Increased share	Increased size Increased share	Much higher	Longer	Much longer	Shorter
Subgroups Characterized by Age, Disability Status, Citizenship							
5. Elderly Adults	Increased size Increased share	Increased size Increased share	Increased size Increased share	Much higher	Same	Much longer	Longer
6. Disabled Individuals	Increased size Decreased share	Increased size Decreased share	Increased size Decreased share	Much higher	Longer	Longer	Shorter
7. No Elderly or Disabled in Childless Family	Increased size Increased share	Increased size Increased share	Increased size Increased share	Much higher	Longer	Much longer	Shorter
8. Noncitizens	Decreased size Decrease share	Increased size Increased share	Increased size Increased share	Much higher	Longer	Much longer	Longer
Subgroups Characterized by Sources of Family Income							
Individuals with family income from:							
9. Earnings	Increased size Decreased share	Increased size Increased share	Increased size Increased share	Higher	Longer	Longer	Shorter
10. TANF income	Decreased size Decrease share	Decreased size Decreased share	Decreased size Decreased share	Lower	Shorter	Much longer	Shorter
11. Social Security Income	Increased size Increased share	Increased size Increased share	Increased size Increased share	Higher	Longer	Much longer	Shorter
12. Supplemental Security Income	Increased size Increased share	Increased size Decreased share	Increased size Decreased share	Higher	Longer	Much longer	Shorter
13. Zero Income	Increased size Increased share	Increased size Decreased share	Increased size Increased share	Slightly higher	Longer	Much longer	Shorter

Sources: Current study for 2008; Mabli et al. (2011a) for 2004.

1. Increase in the At-Risk Population

The absolute number of individuals in the at-risk population – those in families with incomes below 300 percent of poverty and not currently receiving SNAP – increased 6 percent between the 2004 and 2008 panels, consistent with a concurrent rise in the low income population nationwide. The number of at-risk individuals rose in 2008 in 7 of the 13 subgroups. Reflecting the uncertain economic conditions of the time covered by the 2008 panel and the recession's particular effect on the lower middle working class, most of the absolute increase in this at-risk population was not from the traditionally poorest subgroups, such as single parents or those on TANF. Rather, the increase largely derived from two overlapping subgroups of individuals who likely experience the greatest fluctuation of income: childless nonelderly disabled individuals and individuals in families with earnings.

The absolute number of at-risk individuals in families with earnings rose just 6 percent from 2004 to 2008, but because the subgroup is so large (representing three-quarters of the at-risk population), this relatively small percentage increase drove the overall expansion of the at-risk population. Additionally, the number of childless nonelderly disabled individuals in the at-risk population grew 39 percent, causing a marked rise in this medium-sized subgroup's share of the total at-risk population—from 21 to 28 percent.

Two other largely overlapping subgroups—individuals in families with Social Security income and elderly individuals—each contributed about half of the increase in the total at-risk population. Since these are two of the larger at-risk subgroups we examine, relatively small increases in their size had a large impact on the overall size of the at-risk pool. All subgroups whose populations increased also assumed a growing share of the overall at-risk population, with the exception of individuals in families with earnings, whose share of the at-risk population held steady across panels at 78 percent.

The at-risk population for 6 of the 13 subgroups actually contracted in size: single parents, children of single parents, married parents, children of married adults, those in families receiving TANF, and noncitizens. As these specific groups declined in size, while other groups grew larger, their overall share of the at-risk population also declined. In many cases, individuals who meet the criteria for these subgroups, particularly those who receive TANF, have relatively high participation rates and likely already receive SNAP. It is not that their share in the total population decreased; rather, during the economic downturn, more are already on SNAP and thus appear in the cross-sectional sample rather than in the at-risk population.

2. Increase in New Entrants

Consistent with a concurrent rise in SNAP participation, new entrants, as measured by the 2008 SIPP panel, rose more than 40 percent between the 2004 and 2008 panels. Like the rise in the at-risk population, most of the increase across panels in the SNAP entrant population can be attributed to earners and their family members; their absolute number rose 50 percent between

panels, providing fully 78 percent of the between-panel increase in entrants. Subsequently, their share of the new entrant population grew from 66 to 69 percent.

The number of new entrants from two subgroups—noncitizens and individuals in families without any elderly or disabled members—doubled in number, driven by much higher entry rates applied to a larger at-risk population in 2008 compared to 2004. Their shares of the new entrant population subsequently increased. New entrants among married parents and the children of married parents increased markedly, as did their resulting share of the new entrant population. This rise occurred, despite a 2004 to 2008 decline in their at-risk populations, due to greatly increased entry rates. Those receiving Social Security, SSI, and elderly individuals contributed a sizable number of the overall increase in new entrants, also fueled by higher SNAP entry rates.

The new entrant population for 3 of the 13 subgroups contracted in size: single parents, children of single parents, and those in families receiving TANF. In each case, their at-risk populations declined between panels and their subgroup entry rates, though higher than in 2004, did not rise sufficiently to expand their numbers. Their shares of the overall new entrant population declined as well. A relatively high share of members of these subgroups are categorically eligible for SNAP; as such, those not participating and at risk of entering SNAP may be markedly different than those already on SNAP as captured in the cross-sectional sample.

3. Increase in Overall Caseload, as Depicted by the Cross-Sectional Sample

The cross-sectional sample differs from the new entry sample in that it includes all individuals who were on SNAP at an early point in the panel period. For purposes of this analysis, the cross-sectional sample represents the caseload as it would have appeared in May 2004 and December 2008. As described in Chapter II, in the cross-sectional sample, we may miss short spells that occur within the total panel period, as they are likely to end before or to begin after the sample month. Longer spells, however, are more likely to include the sample month, and consequently longer spells are more heavily represented in the cross-sectional sample than in the entry cohort sample.

The absolute size of the caseload, as measured by the cross-sectional population, rose 30 percent between the two panels. Different from patterns revealed in an analysis of changes to the at-risk and new entrant populations, an analysis of the cross-sectional sample shows that all but one of the 13 subgroups examined increased in absolute size from 2004 to 2008: only individuals in families receiving TANF contracted.

Due to a 30 percent increase in the absolute size of the individuals in families with earnings subgroup—the largest subgroup profiled in this chapter, already constituting over one-half of the 2004 caseload—even marked increased time on SNAP in some of the smaller subgroups does not result in a noticeable difference to the composition of the total caseload. We briefly describe the circumstances of each of the 13 subgroups and the role each play in the increase in size and composition change of the caseload.

In total, **individuals in families with children**–the aggregate of the first four subgroups–increased very slightly as a percentage of overall participants–from 59 percent in 2004 to 60 percent in 2008. The absolute number of individuals in families with children grew by 32 percent, and they contributed fully 80 percent of the total caseload growth.

The absolute number of **single adults with children** grew by 23 percent from 2004 to 2008. Fueled by increases in both their entry rates and median spell length, single adults with children contributed 11 percent of the overall caseload increase during this period, However, these increases were diluted by even greater increases among larger subgroups, and single adults with children's share of the overall cross-sectional of participants declined slightly.

The absolute number of **children of single adults** also grew by 23 percent from 2004 to 2008, but this subgroup, too, declined slightly as a percentage of total caseload in 2008. Their median spell length increased by more than that of the total population, but this was not enough to increase their share of overall cases. Like single parents, this subgroup is fueled by longer stays on SNAP and much quicker than average re-entry; as such, children of single adults contributed 21 percent of the overall caseload increase. Together, single parents and their children contributed a third of the increase in participants across the panels.

Married adults with children grew as a percentage of all participants in 2008. The absolute number of married parents in the cross-sectional sample grew by 50 percent, contributing 25 percent of the between-panel caseload growth. This rise was fueled by a marked increase in their SNAP spell length.

Children of married parents also increased slightly as a percentage of total participants in the ongoing caseload–from 13 to 14 percent. Due in part to an increase in their median participation spell length, the number of children of married parents in the cross-sectional sample increased 40 percent, providing 22 percent of the caseload growth. Nearly half of the increase in the cross-section of SNAP participants across panels is from married parents and their children together.

Elderly individuals increased slightly as a percentage of overall participants. The number of elderly individuals in the cross-sectional sample grew by 32 percent, which represented 12 percent of the caseload growth. Their median spell length did not change, while the median spell length among all participants increased, resulting in just a small increase in their share of the overall caseload.

Disabled individuals decreased as a percentage of total participants despite modest increases in their entry rate and length of stay on SNAP. Disabled individuals in the cross-sectional sample grew by 23 percent (smaller than average increase), contributing 15 percent of the between-panel caseload growth.

Individuals in childless families without any elderly or disabled members increased as a percentage of total participants. These cases by 37 percent, but because they are a smaller group

to begin with, Individuals in childless families without any elderly or disabled members contributed just 8 percent of the caseload growth in the cross-sectional sample grew.

Noncitizens increased as a percentage of total participants. The absolute number of noncitizen cases in the cross-sectional sample grew by a full 84 percent, constituting 18 percent of the difference in caseload between 2004 and 2008. Longer SNAP spells drove the noncitizen caseload growth.

Individuals in families with earnings increased very slightly as a percentage of overall participants. The number of cases in the cross-sectional sample from this subgroup increased 30 percent, but because they are such a large subgroup, this contributed fully 68 percent of the between-panel growth in participants. Their median spell length increased and they returned to SNAP more quickly than in the prior panel, fueling this participant rise.

Individuals in families with TANF income decreased as a percentage of the total participant population. The number of TANF family members in the cross-sectional sample decreased 19 percent.

Individuals in families with Social Security income increased slightly as a percentage of total participants due to increased median spell length and shorter time off SNAP. Their number of cases in the cross-sectional sample increased 34 percent, contributing 37 percent of the caseload growth.

Individuals in families with SSI decreased as a percentage of overall participants. The number of individuals in families with SSI grew by 18 percent, and they contributed 18 percent of the total caseload growth. However, other subgroups simply grew by much larger amounts.

Individuals in families with zero income increased as a percentage of total participants due to much increased time on SNAP and decreased time off SNAP. Their number of cases in the cross-sectional sample increased 39 percent, providing 11 percent of the between-panel caseload growth.

IV. SUMMARY AND RECOMMENDATIONS FOR FUTURE RESEARCH

The purpose of this study was to investigate SNAP caseload dynamics to understand what drives changes in SNAP participation over time. Over our sample period, caseloads increased substantially, as they did during the time of the Mabli et al. (2011a) study of the mid-2000s, the Cody et al. (2007) study of the early 2000s, and the Gleason et al. (1998) study of the early 1990s. To help explain these changes, we examined what factors lead individuals to enter SNAP, how long individuals typically participate, and what factors lead them to exit the program. We have also compared our findings with those reported in the earlier studies.

In this chapter we summarize our main set of findings and discuss a direction for future research on SNAP dynamics.

A. Summary of Key Findings

In 2008 to 2012, entry rates and median spell lengths reached all-time highs, relative to the earlier study periods. The annual entry rate among individuals with income less than 300 percent of poverty in one or more months of the panel period increased from 4.2 in the mid-2000s to 6.2 percent in the 2008 to 2012 time period and the monthly entry rate increased from 0.5 to 0.7 percent (see Table IV.1). In addition, the median spell length for those who entered in the panel period was two months longer, on average, in the 2008 to 2012 time period compared to the mid-2000s. Those who exited re-entered after 16 months, on average, compared with re-entry after an average of 20 months in the mid-2000s. The proportion of entrants and exiters who entered or exited within four months of a trigger event also changed. While decreases in income remained the predominant trigger before entry, and increases in income remained the predominant trigger before exit, the percentage of SNAP entrants that have experienced any entry trigger in the past four months decreased by about 8 percentage points after having already decreased by close to 10 percentage points from the early-2000s to the mid-2000s. The percentage of SNAP exiters who experienced any trigger in the past four months decreased by about 4 percentage points.

1. SNAP Entry

On average, in 2008 to 2012, 7 out of every 1,000 nonparticipants with income under 300 percent of poverty at some point in the panel period who were not participating at the end of one month participate in the next month (5 out of 1,000 when we did not limit the income). However, the likelihood of entry differed according to the family situation. Individuals who received benefits in the past were much more likely to enter than those who had not received benefits; individuals in families with children were more likely to enter than individuals in families without children; individuals in families without income were more likely to enter than individuals in families with income; and individuals in families with disabled members were more likely to enter than individuals in families without disabled members.

Table IV.1 Comparison of Primary Measures of SNAP Participation Dynamics

	1991–1993	1993–1996	1996–1999	2001–2003	2004–2006	2008–2012
Annual Entry Rate Among Individuals with Income Under 300 Percent of Poverty (Percentage)	NA	NA	NA	4.1	4.2	6.2
Monthly Entry Rate Among Individuals with Income Under 300 Percent of Poverty (Percentage)	NA	NA	NA	0.4	0.5	0.7
Replacement Rate (Percentage)	NA	4.2	3.8	5.4	4.1	3.9
Median Duration for Entry Cohort (Months)	9	8	8	8	10	12
Median Cross-sectional Completed Spell Length (Years)	>8	4.5	4.5	4	7	8
Median Time-Off (Months)	20	NA	NA	18	20	16
Total Time On (Percentage with Eight Months or Less)	27	NA	NA	37	30	23
Multiple Spells (Percentage)	51	NA	NA	63	60	61
Turnover Rate	1.3	NA	NA	1.5	1.4	1.3

Sources: Decision Demographics tabulations of the 2008 SIPP Panel for 2008–2012; Mabli et al. (2011a) for 2004–2006; Cody et al. (2007) for 2001–2003; Cody et al. (2005) for 1993–1999; Gleason (1998) for 1990–1993.

Although trigger events continued to play key roles in SNAP entry as in prior studies of SNAP dynamics, with 53 percent of all entries preceded within four months by at least one of these trigger events, 47 percent of entries occurred without an obvious recent change in circumstances, indicating that entrants may have waited longer than four months to enter after experiencing a trigger event, or were enticed to enter for other reasons. The most common events that triggered entry into SNAP were related to decreases in family earnings. Among those who entered SNAP in the panel period, 30 percent experienced a decrease in family earnings of at least 10 percent in the four months prior to their entry. The incidence of this trigger event preceding an entrance, however, was sizably smaller than in the early-2000s, when it was 56 percent, and in the mid-2000s, when it was 39 percent.

2. SNAP Spell Length

About half of individuals who entered SNAP during the panel period exited within one year, and most exited within two years. The median participation spell among new entrants was about twelve months. However, among a cross-section of those who were participating in a given month early in the panel (December 2008), the median subsequent spell was 48 months. The spell length in the cross-sectional sample is generally much longer because, in this sample, we miss many short spells that occur within the same panel period−they are likely to end before or

to begin after our sample month. Longer spells, however, are more likely to include our sample month.

As with entry rates, spell duration varied according to the characteristics of the individuals. Individuals in families without earnings had longer spells than individuals in families with earnings. Additionally, children had longer spells than non-elderly adults, and elderly individuals living without any other family members had among the longest spells. This is in contrast to entry rates, where we see that elderly individuals living without any other family members were among the least likely to enter. The groups who stayed on longer were similar to those in the mid-2000s.

3. SNAP Exit

On average, 2.9 percent of individuals on SNAP exited the program each month. Those in families without elderly or disabled members exited more frequently (at a monthly rate of nearly 7 percent) than those in families with elderly members (3 percent) or disabled members (2 percent). The most common exit trigger events were increases of at least 10 percent in family income (excluding earnings) and in earnings, with about two-thirds of the sample experiencing each event at some time during the sample. However, an increase in earnings within the previous four months was more commonly associated with an exit than an increase in other income. Among those experiencing an increase in earnings, 19 percent exited within four months. Other events, though not as common, including the departure of a family member, led to a similar percentage exiting within four months. In contrast, only 14 percent of those with an increase in other income exited within the 4-month window.

4. SNAP Re-Entry

Half of SNAP participants who exited the program in the panel period re-entered within 16 months. Forty-seven percent re-entered within one year of exiting, and another 12 percent re-entered within two years of exiting. The one- and two-year re-entry rates for 2008 to 2012 are slightly higher than those in the early and mid-2000s. The median time to re-entry of 16 months for 2008 to 2012 is four months shorter than the median time to re-entry from the mid-2000s.

5. Subgroups

Table IV.2 summarizes key dynamics measures for selected subgroups. The subgroups with the higher entry rates–children, individuals in families with children, individuals in families without earnings, individuals in families without a high school graduate, individuals in families with SSI, and individuals in families with no income–also stay on SNAP longer. These particular groups exhibit longer new spells than their complementary subgroups, as well as relatively shorter periods before re-entry and lower exit rates after experiencing an identified trigger event. These subgroups also tend to have longer median duration of subsequent spells for the cross section of participants in December 2008, with the exception of children and individuals in families with children, who have shorter subsequent spells than their elderly and nonelderly adult

counterparts. Elderly individuals have relatively low entry and re-entry rates, but once on SNAP, they participate much longer and are less likely than nonelderly adults to exit following a trigger event.

Table IV.2 Comparison of SNAP Participation Dynamics across Selected Subgroups

Subgroup (of Individuals in families with income under 300 percent of poverty at some point in the panel period)	Monthly Entry Rate	Median Length for Entry Cohort (Months)	Median Cross-sectional Completed Spell Length (Months)	Probability of Exit Given Any of Identified Triggers	Median Time Off Between Spells (Months)
All Individuals	0.7	12	48	18	16
Children	1.0	15	44	15	11
Nonelderly adults	0.7	11	45	20	17
Elderly	0.3	12	>51	19	26
Individuals in families with children	1.0	12	44	17	12
Individuals in families without children	0.4	11	>51	22	24
Individuals in families with earnings	0.6	11	29	20	17
Individuals in families without earnings	1.0	16	>51	13	12
Individuals in families with HS graduate	0.6	12	44	19	16
Individuals in families without HS graduate	1.5	17	>51	11	8
Individuals in families with SSI	2.4	13	>51	15	12
Individuals in families without SSI	0.6	12	44	18	16
Individuals in families with no income	2.1	16	>51	13	12
Individuals in families with income	0.6	10	46	18	16

Source: Decision Demographics, weighted tabulations of the 2008 SIPP panel.

6. Summary Measures

Total time on SNAP during the panel period is simply the number of the 56 months in the sample that a person receives SNAP benefits. Given that over 60 percent of participants had multiple spells in the panel, total time on SNAP is a useful complement to examining the length of SNAP spells. Of the individuals on the panel who received SNAP benefits during the panel, about 23 percent were in the program for a total of 8 months or less, and 25 percent participated for virtually the entire panel. Their median total time was 27 months (or nearly half of the possible 56 months). This finding suggests that individuals depend more heavily on SNAP than is indicated by the duration of new spells (median length was 12 months).

The increase in the number of SNAP participants over the course of 2008 to 2012 can be attributed to a replacement rate that was greater than the exit rate. The growth rate was lower

during the latter part of the time period than during the earlier part because the average monthly replacement rate declined rapidly while the average monthly exit rate remained fairly stable.

B. Recommendations for Future Research

With its richly detailed, monthly-level information on program participation, the SIPP has historically been the premier data set with which to study SNAP dynamics. The data facilitate the exploration of how SNAP entry and exit rates vary by individual and family demographic and economic characteristics, and how they relate to individuals' changes in employment, income, or family composition or "trigger events." The percentages of entrants and exiters whose entries or exits were preceded by a trigger event declined in the 2008 panel relative to the 2004 panel. However, relative to the 2004 panel, there were increases both in the percentage of low-income individuals experiencing entry and exit trigger events, and the percentage of individuals experiencing trigger events who then entered or exited SNAP within four months.

These findings highlight the difficulty in attributing changes in SNAP participation to trigger events. In particular, we must make a set of assumptions about the two outcomes. First, we must assume that both the change in participation and the change in the trigger (e.g., employment, income, or family composition) are reported accurately in the months in which they occurred. We know from the analysis of seam bias in Appendix A that a disproportionate percentage of reported changes in participation and employment occur on the seams between waves, making it difficult to establish when the changes actually occurred. Second, a maximum, and reasonable, length of time between the changes needs to be assumed. For example, changes in earnings and employment often occur nearly simultaneously, with earnings decreasing usually in the same month or the month after a job loss occurs. It is reasonable to expect, however, that changes in participation can lag several months behind changes in employment or income. Third, even when the data are reported accurately and a reasonable window for observing changes is established, knowing which event actually triggered program entry or exit is difficult. Some SNAP participants may choose to enter or exit SNAP for reasons unrelated to the trigger events we quantified; outreach programs, policy changes to simplify the application process, or increased potential SNAP benefits might entice program entry. It is also possible that there are other trigger events not reported in the data and, thus, not captured in our analysis.

Although multivariate analysis can help us partially address these issues, examining longitudinal series of participation and trigger events can only go so far in explaining why people enter and exit the program over time. Ideally, we want to know from the respondents themselves why they elected to participate or not participate in a given month. We believe this is a fruitful area of future research. The collection of primary data (outside of the SIPP), for example, could allow researchers to examine in greater detail the reasons for entry and exit.

Researchers may also wish to study the dynamics of SNAP participation from January 2013 through the current time period. During this time, monthly SNAP participation declined slightly, likely in part due to the recovering economy (the seasonal unemployment rate declined from 7.9

percent in January 2013, the first month after the period covered in this report, to 6.1 percent in June 2014, the most recent month available)[64] and perhaps in part due to the discontinuation of the ARRA benefit increase at the end of October 2013.

This report is potentially the last in a series of SNAP dynamics studies that have been carried out based on SIPP longitudinal data that are collected once every 4 months; a redesigned SIPP panel started in 2014 where respondents are interviewed once a year with a 12-month reference period. The next logical time to initiate a SNAP dynamics study will probably be mid-2017. At that time, three waves of the 2014 SIPP data will become available, covering the 36 reference months of January 2013 through December 2015. Waiting another year would provide 48 reference months, closer to the 56-month analysis period for the current study.

Prior to conducting future dynamics analyses, researchers will first need to explore the advantages and disadvantages of using the reengineered SIPP to study SNAP dynamics, relative to the traditional SIPP panels. Indeed, the next dynamics study will face several challenges due to the reengineering of SIPP:

- Characteristics and program participation will still be reported and released for person-months, allowing for the same general analytic approach as the current study, but accurately capturing monthly program dynamics with an annual reporting cycle may prove difficult.
- Accuracy of recall will be a challenge for respondents who will be reporting about a previous complete calendar year during interviews conducted from February to May.
- The 2008 and previous SIPP panel data show substantial seam effects between interviews wherein many events are reported to have happened in month one or month four of the four-month reference period (see Appendix A). With only one interview per year, there may be even less motivation for respondents to report transitions onto and off of programs like SNAP—there will effectively be only one seam per year instead of three.
- For similar reasons, capturing and accurately timing trigger events such as employment, income, or household changes that may precipitate joining or leaving the SNAP program will be challenging and may change the way that triggers will have to be studied. The quality of new trigger data will have to be evaluated variable-by-variable.
- Household changes are a common SNAP trigger, but individuals who join and then leave a household before the time of the annual interview may not be captured at all.
- Topical module content has been curtailed or changed. For example, for those who are already on SNAP at the start of the SIPP panel, the topical module question about when they started the program will include year and month started only for the most recent two years. For earlier starting dates only year will be collected. This may be an improvement considering recall accuracy and the rate at which month is currently imputed (see Appendix A), but will need to be assessed using the new data.

There may also be distinct advantages to using reengineered SIPP data to study SNAP dynamics. Data may be available more quickly. Sample loss may be ameliorated with improved

[64] http://data.bls.gov/cgi-bin/surveymost, accessed July 19, 2014.

locating and reduced respondent burden. Plans to integrate administrative records data may result in more accurate estimates of income and program participation.

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SNAP Dynamics Glossary

American Community Survey (ACS)	The **American Community Survey (ACS)** is a part of the U.S. Census Bureau's Decennial Census Program and is designed to provide current demographic, social, economic, and housing estimates throughout the decade. Annually, the survey randomly samples around 3.5 million addresses and produces statistics that cover 1-year, 3-year, and 5-year periods for geographic areas. In this study, we employ the 5-year estimates that are available for **census tracts**.
Annual entry rate	Among all individuals not participating in SNAP at the end of one reference year, the proportion who participates at some point in the next reference year is the **annual entry rate**.
Annual turnover rate	**Annual turnover rate** is the size of the population that receives SNAP benefits at some point in the calendar year divided by the average size of the caseload that year.
ARRA	The American Recovery and Reinvestment Act (**ARRA**) of 2009 temporarily raised the maximum SNAP benefit, beginning in April 2009, to 113.6 percent of the June 2008 Thrifty Food Plan and held it at that level thereafter. As specified in subsequent legislation, the increase expired on October 31, 2013.
At-risk population (at-risk pool)	The "**at-risk" population** comprises individuals who are not receiving SNAP benefits in a given month and have income under a certain level. For all tables in this dynamics study, unless otherwise specified, the **at-risk population** includes all individuals in a given month not receiving SNAP who have income under 300 percent of poverty at some point in the analysis period.
Census tract	**Census tracts** are small, relatively permanent statistical subdivisions of a county or equivalent entity that are updated with input provided by local data users prior to each decennial census. Their primary purpose is to provide a stable set of geographic units to present and compare statistical data. **Census tracts** generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A **census tract** usually covers a contiguous area. **Census tract** boundaries are delineated with the intention of being maintained over a long time so that statistical comparisons can be made from one census period to the next.
Churning	**Churning** refers to short-term nonparticipation in SNAP during a period of continued eligibility. When **churning** is reported in **SIPP**, a question remains as to whether this is a real phenomenon or a reporting error and whether to "**close"** short **gaps**. For this study we close one-month reported **gaps** in SNAP participation.
Closing gaps	One-month **gaps** in SNAP participation, as reported on the **SIPP**, may reflect a respondent mistake in reporting rather than actual breaks in participation. For this study (as was done in previous dynamics studies), sample members were assumed to have received SNAP benefits in a given month if they received benefits in the previous and subsequent month. This is referred to as "**closing gaps**."
Core content (of the SIPP)	**Core** questions in the **SIPP** are repeated at each interview; **core content** refers items that remain constant from one **wave** to the next. **Core content** includes information on **household** and **family** composition, personal demographic characteristics, employment, income, and participation in a wide range of government assistance programs.

Cross-sectional sample	The **cross-sectional sample** is a "snapshot" of all individuals on SNAP at a given point in time. For this study, the **cross-sectional sample** comprises everyone who was on SNAP in December 2008.
Cumulative exit rate	The **cumulative exit rate** is the unconditional probability that a **spell** ends within a given number of months. It tells us the cumulative percentage of the **entry cohort sample** that exited SNAP after 1 month, 2 months, and so on. The **survivor rate** and **cumulative exit rate** sum to 100 percent.
Cumulative re-entry rate	The **cumulative re-entry rate** is the unconditional probability that an individual in an "off spell" returns to SNAP within a given number of months.
Entry cohort sample / analysis	The **entry cohort sample**, also referred to as the **new entrant sample,** includes all individuals who began a **spell** of SNAP participation during a given calendar period (in this case, within the **SIPP panel period**). **Entry cohort** analyses uses a sample from the 2008 SIPP panel in which each observation represents a single participation spell of an individual. We limit our sample to spells that began in month 3 or later (and therefore are not **left-censored**). We allow sample members to contribute more than one spell to the analysis, including both new entries and re-entries in this analysis.
Entry rate	The **entry rate** measure provides us with an estimate of the proportion of the nonparticipating population that enters SNAP in a given time period. It is specifically defined as the number of individuals **at risk** of entering who subsequently enter divided by the number **at risk** of entering.
Entry trigger	An **entry trigger** is an indicator of change in life circumstances that can be identified on the SIPP to precede an individual's entry onto SNAP. Trigger events include a loss of income or the addition of a family member.
Exit rate	See **cumulative exit rate**
Exit trigger	An **exit trigger** is an indicator of improved financial circumstances, change in life circumstances, or reduced need for SNAP that can be identified on the SIPP to precede an individual's exit from SNAP. Exit trigger events include an increase in income or the addition or subtraction of a family member.
Family	In **SIPP**, a **family** is two or more people who are living together and are related by blood, marriage, or adoption.
Food Access Research Atlas	The Economic Research Service produces the **Food Access Research Atlas**, a dataset that defines geographic areas (**census tracts**) in which households have **limited food access**. The atlas combines data from the 2010 Decennial Census, the 2006-2010 **ACS**, and a 2010 list of supermarkets (derived from merging the 2010 **STARS and** the 2010 Trade Dimensions TDLinx directory of stores).
Gap	A one-month **gap** in SNAP participation, as reported on the **SIPP**, may reflect a respondent mistake in reporting rather than an actual break in participation. For this study (as was done in previous dynamics studies), sample members were assumed to have received SNAP benefits in a given month if they received benefits in the previous and subsequent month. This is referred to as "**closing gaps**."

Great Recession	This study period overlaps the **Great Recession**, the sharp decline in economic activity during the late 2000s. The National Bureau of Economic Research (NBER) dates the beginning of the recession as December 2007. The bottom, or trough, was reached in the second quarter of 2009 (marking the technical end of the recession, defined as at least two consecutive quarters of declining GDP). The NBER, dating by month, points to June 2009 as the final month of the recession.
Hazard rate	The **hazard rate** is the probability that a SNAP spell ends (or in the case of re-entry, a non-participation spell ends) in a particular month, given that it has lasted at least until the beginning of that month. It is the rate at which individuals stop participating in a given time period, expressed as a percentage.
Household	In **SIPP**, a **household** comprises all people living in a housing unit at the time of the interview. **SIPP** infers **households** from the interviews conducted at each address.
Left-censored spells	Spells on SNAP that were already in progress when the analysis period began are **left censored**; we do not observe their start during the **SIPP panel period**.
Life table analysis	See **Survival analysis**
Log-Rank test	The **log-rank test** compares the survival times of two or more groups. The test compares the estimated monthly **hazard rate** to the expected monthly **hazard rate** where the expected rate is calculated based on the null hypothesis that the **hazard rate** is the same for each subgroup category within a specified time period.
Long spell (or long-term)	A SNAP participation spell of more than two years in length is categorized as a **long spell**.
Low food access	A **low food access census tract** is one in which a substantial number or share of individuals in the tract live prohibitively far from a **supermarket**. For this study, to define "far," we use metrics devised by ERS and made available through the **Food Access Research Atlas**, defining a **low food access** tract as one where at least 500 people or 33 percent of its population live more than 1 mile in urban areas or more than 10 miles in rural areas from the nearest **supermarket**, supercenter, or large grocery store.
Median spell length	A measure of **spell length** calculated via **life table or survival analysis**: in the month that the **cumulative exit probability** reaches 50 percent, we have the **median spell length**—half of all **spells** are shorter and half of all **spells** are longer.
Medium spell (or medium-term)	A SNAP participation spell of 9 to 23 months in length is categorized as a **medium spell**.
Monthly entry rate	The percentage of all **at-risk** individuals who enter SNAP in the current month after not receiving SNAP benefits during the previous two months (at least) is the **monthly entry rate**.
New entrants	**New entrants** are sample members who enter SNAP at any time during the study period (includes individuals who have been on the program before).
Nonparticipation spell	An "**off spell**" is a period of time when a person who has previously received SNAP during the **panel period** is not participating in the program.
Nonresponse bias	Since nonrespondents may differ systematically from respondents in the variables collected in **SIPP**, the occurrence of nonresponse gives rise to concerns about **nonresponse bias** in the survey results. **Weighting** adjustments are made in an attempt to reduce or eliminate **bias**.

Off spell	Another term for **nonparticipation spell**.
Panel period	The calendar period covered by the **SIPP panel** is the **panel period**. The 2008 **SIPP** full **panel period** is May 2008 to November 2013. However, we use 14 of the 16 **SIPP waves** from the **panel**, so the **panel period** to which this study refers is May 2008 to December 2012.
Participation spell	A SNAP **participation spell** is the period of time that an individual spends in a single set of consecutive months on SNAP.
Recipiency history	Information collected by the **SIPP** on previous participation in public assistance programs is called a respondent's **recipiency history**. This is collected through a **topical module** questionnaire (**Wave** 1 in the 2008 panel).
Reference period	During each interview, **SIPP** collects information from a respondent for each of the four calendar months preceding the interview month. Those four months together are called the **reference period**, or reference months. The total **reference period** for our analysis file, based on 14 waves of data, is May 2008 to December 2012.
Replacement rate	The **replacement rate**, a useful measure for capturing the extent to which the caseload changes from month to month, is measured as the number of new SNAP entrants in relation to caseload size. Specifically, it is measured as the number of **new entrants** in a given month divided by the number of participants in the previous month.
Right-censored spell	A spell is **right-censored** if it was still in progress at the end of the study period. We do not observe its end during the **panel period**, because the respondent was still participating in SNAP when the panel period ended.
Rotation group	Sample members within each **SIPP panel** are divided at random into 4 equally sized **rotation groups** that were interviewed on a staggered schedule—one **rotation group** per month. Thus, each sample member is interviewed every 4 months, or once per **wave**, and over the course of 4 months, all **rotation groups** are interviewed, providing data for the full set of 4 months. Each interview conducted refers to the previous 4-month **reference period**. The **rotation group** design ensures that the data collected for any given calendar month are obtained in roughly equal proportions from respondents reporting on their activities of one, two, three, and four months ago. Accordingly, no calendar month of data was affected more or less than any other by the **seam effect,** recall **bias** or other error associated with distance from the interview.
Sample loss	**Sample loss** in the **SIPP** occurs when members of a household sampled for the survey either cannot be located or refuse to participate. Relevant to this SNAP dynamics study, **sample loss** reached 51 percent by wave 14 of the 2008 **SIPP panel**, due in part to its length.
Seam	In the SIPP, the "**seam**" is the months that represent the start or end of each four-month **reference period**.
Seam effect	The SIPP "**seam effect**" or **"seam bias"** reflects the tendency of individuals to report changes in status on "**seams**"—the months that represent the start or end of each four-month **reference period**.
Short spell (or short-term)	A SNAP participation spell of 8 months or less in length is categorized as a **short spell**.

SIPP	The Survey of Income and Program Participation (**SIPP**), is a nationally representative, longitudinal survey that collects detailed information on monthly labor force activity, earned income, unearned income (such as Social Security and pension payments), cash and non-cash public assistance, family and household composition, and detailed demographics.
SIPP Panel	A **SIPP panel** is a new sample that is introduced periodically in the **SIPP. Panel** also refers to the full collection of information for that sample. For example, the 2008 **panel** refers to both the sample introduced in 2008 and the 16 **waves** of interviews conducted with that sample. This study is based on data from the 2008 **SIPP panel**, which launched in September 2008 and is based on interviews conducted from May 2008 through December 2013. This study also reviews historical participation dynamics data from the 2004, 2001, 1996, 1991 and 1984 **SIPP panels**.
SNAP spell	A **SNAP spell** is the period of consecutive months that an individual spends on SNAP. Because participants cycle on and off SNAP, sample members may contribute more than one **SNAP spell** to the analysis file.
Spell	See **SNAP spell** or **participation spell**
STARS	**Store Tracking and Redemption System (STARS)** is a database of retail establishments authorized to accept SNAP benefits.
Subgroups	**Subgroups** are key segments of the SNAP population that are of policy interest to FNS. Subgroups may exhibit distinct participation dynamics patterns.
Supermarket	For purposes of **food access** analysis, the shortened term "**supermarket**" refers to "supermarket, supercenter, or large grocery store."
Survival analysis	**Survival analysis** or "**life table" analysis**, estimates the rate at which individuals ended their participation **spell** in each month following program entry. Through **survival analysis**, we create **cumulative exit rates**, **hazard rates**, and **survivor rates**.
Survivor rate	The **survivor rate** is the unconditional probability that a spell remains in progress more than a given number of months. It measures the percentage of individuals that have not changed their participation status by a given month or time period.
Topcoding	**SIPP** recodes income variables to protect against the possibility that a user might recognize the identity of a SIPP respondent with very high income. Incomes exceeding a maximum value are recoded to that maximum value or to a mean of responses in excess of that value.
Topical module	**SIPP Topical modules** are sets of questions asked periodically about specific topics outside the range of the **SIPP core content**. **Topical modules** collect data on specialized subject areas, such as previous participation in public assistance programs ("**recipiency history**"), employment history, assets and liabilities, shelter costs, and work-related expenses. The SIPP 2008 panel **topical module** that collected information on respondents' history of employment and program participation was administered in **wave 1**.
Total time on SNAP during the panel period	A measure of an individual's SNAP participation behavior, **total time on SNAP** provides a count of how many months an individual receives SNAP benefits during the **panel period** (not necessarily from a single **SNAP spell**). It is calculated simply as the number of months during the **SIPP panel period** that each individual received SNAP benefits.
Trigger event	**Trigger events** are factors we can identify and measure that may be associated with individuals entering and exiting SNAP. We look for these events occurring in a "window" period of months immediately prior to an entry or exit.

Turnover rate	The **turnover rate** is the ratio of all participants ever on SNAP during a year divided by the average monthly number of SNAP participants. When the overall SNAP caseload remains constant, the **turnover rate** is a useful measure of how often individuals move into and out of the program.
Wave	**SIPP** is a longitudinal survey in which each sampled household and each descendent household is re-interviewed at 4-month intervals for each interview. These groups of interviews are called **waves**. The first time an interviewer contacts a household, for example, is **wave** 1; the second time is **wave** 2, and so forth. Each **wave** contains **core questions** that are asked at every interview, along with **topical module** questions that vary from one **wave** to the next. Each **wave**, or round, of interviewing takes 4 months to complete, and one fourth of the sample (or **rotation group**) is interviewed each month.
Wave-based entry rate	The percentage of individuals who are not receiving SNAP benefits at the end of a SIPP 4-month **reference period** (a "**wave**") but who enter SNAP during the subsequent **wave**.
Weights/ weighting	Weights are estimates of the number of units in the target population that a given survey unit represents. This study employs the **SIPP** Wave 1-14 longitudinal weight, weighted to the U.S. civilian, non-institutionalized population in January 2009.

APPENDICES

Appendix A: Data Assessment: Longitudinal File Assessment, Recipiency History Topical Module Assessment, and Analysis of One- and Two-Month Gaps

Appendix B: Subgroup Definitions in SNAP Dynamics Research

Appendix C: Cross-Study Tables Crosswalk

Appendix A

Data Assessment: Longitudinal File Assessment, Recipiency History Topical Module Assessment, and Analysis of One- and Two-Month Gaps

Table of Contents

The analysis was conducted to identify potential problems in the data that could affect estimates of SNAP participation dynamics. Our assessment identifies several issues in the 2008 SIPP panel—most of which are similar to problems observed in previous panels. While attrition will affect this 14-wave analysis to a greater extent than any previous SNAP dynamics study, we did resolve an important problem that affected the past three dynamics reports—negative SNAP spell lengths. While some problems persist or degrade further, we believe the 2008 SIPP data can still be used to generate reasonable estimates of SNAP participation dynamics. However, adjustments to the data that were made in the study of SNAP dynamics in Cody et al. (2007) and Mabli et al. (2011a) will also be required here. As was the case in those studies, the estimates of participation dynamics in the current study must be considered in the context of the potential bias created by these problems.

I. Overview

The analysis of the dynamics of participation in SNAP is based on data from the 2008 SIPP panel. In general, we use these data to examine participation dynamics in two ways:

(1) Descriptive Analysis of Program Entry, Duration, and Exit. We conduct a descriptive analysis of patterns of entry into SNAP, the duration of participation spells, and patterns of exit from and re-entry into the program. As in previous dynamics studies, a central tool used in this analysis is the life table, which examines the distribution of participation spells by their duration. We also will examine how the incidence of trigger events such as changes in income or changes in household size are correlated with program entry and program exit.

(2) Multivariate Analysis of Program Entry, Duration, and Re-Entry. We conduct multivariate modeling of program entry, spell duration, and program re-entry. This analysis examines how trigger events affect participation dynamics while controlling for other individual characteristics. For each individual, we examine whether the trigger event is a deviation from the individual's usual circumstances.

These analyses use the SIPP data longitudinally. For most individuals in our analysis file, we have 56 months of monthly data on income, program participation, and household characteristics. With this information, we compute entry and exit statistics for each month and examine whether triggers occurring in one month are associated with program participation changes in a subsequent month.

The analysis presented in this Appendix was developed in advance of the main studies, using 11 of the 14 waves upon which we base our full analysis. Our intent to identify problems that may bias our estimates of participation dynamics. Some problems in the data can make the data less representative of the populations of interest, such as those individuals receiving SNAP benefits. Other problems can introduce erroneous information and false changes into an individual's information over time. These problems can create biased estimates of dynamics.

Aside from this brief Overview, our assessment of the SIPP data is presented in six parts:

Section II discusses the application of analysis weights in this appendix and the main study, and development of weights for infants. Because the SIPP panel longitudinal panel weights had not yet been published for the full Wave 1-14 analysis period when we conducted this assessment of the data, we used the then-released longitudinal panel weights for Waves 1-11 in lieu of the Wave 1-14 longitudinal weights. The main study in the body of this report was conducted with a subset of those included in this data assessment, omitting those who leave the SIPP universe after Wave 11. On another weighting topic, we describe the construction of new longitudinal panel weights for infants born to households during the panel period for this appendix and the full study.

Section III examines potential bias stemming from sample loss and seam reporting in the SIPP. The 2008 SIPP panel suffers from higher rates of sample loss than any previous SIPP panel. The full panel analysis weights created by the Census Bureau tend to correct for this sample loss and estimates of general population characteristics appear unbiased. Having a smaller sample than the previous study, which was already evident by Wave 11, will lead to reduced precision for subgroups, and for entry and exit analyses. The "seam effect" in the 2008 SIPP is pronounced, as it was in 2004, but not as severe as in previous panels. Most of the key changes of interest to this study occur on the seams between SIPP waves. Therefore, estimates of changes over time must allow for the fact that many changes may be observed on a seam month instead of the month that they actually occurred. Defining trigger event variables using four or eight months of data, as in the prior studies, continues to allow for this.

Section IV examines inconsistencies in the SIPP data. One key problem is that program participation is underreported in Wave 1 compared with Waves 2 and following. We decompose wave-to-wave changes in SNAP participation for Waves 1 through 5. As in previous panels, we theorize that respondents are learning the SIPP survey in the early waves. Other issues identified include the way that some SNAP and TANF assistance units are constructed, and variation in how employment is measured.

Section V examines how SIPP estimates of SNAP participation compare with those from administrative data. Estimates of SNAP participants in the SIPP differ from administrative estimates in that SIPP data have proportionately too many adults, a known problem that tracks to SIPP not permitting child-only SNAP units. SIPP data also have fewer households with zero earnings than administrative data.

Section VI examines data from the principal SIPP topical modules that are used in our analysis: data on recipiency history and employment history from Wave 1. Due to confidentiality restrictions imposed on the data, we conducted this analysis within the Census Bureau. The Wave 1 Recipiency History Topical Module (RHTM) items on SNAP underwent significant redesign prior to the 2004 SIPP. Some data were collected throughout the 2008 panels, and other SNAP items in the RHTM were improved, but the net effect on dynamics analysis was small. However, the 2004 phrasing changes combined with the calendar change in the 2008 panel eliminated the irrational negative SNAP spell lengths that affected prior studies. That, in turn, helped

us discover the root causes of the negative spells. Overall, the results of this evaluation place the 2008 RHTM data within a normal range of what can be expected from the 2004, 2001, and 1991 data, and the data appear to be reliable and not in need of adjustment. Data from the employment history module also appear useful for our analysis.

Section VII examines gaps in SNAP participation in the 2004 SIPP panel. We examine the incidence of gaps of different sizes, the lengths of spells prior to and following the gaps, characteristics associated with having a gap, and other data features related to gaps. The analysis will help inform the decision about whether to recode one- or even two-month gaps in participation by closing them up. We found evidence that one- and especially two-month gaps could be due not only to misreporting but also to actual program churning, with individuals exiting and re-entering the program soon thereafter. We recommend the closing of one-month gaps in participation, consistent with prior studies.

Section VIII presents a preliminary look at three supplemental data sets we have merged to our SIPP analysis file to create additional subgroups: (1) the ACS summary files, (2) the Food Access Research Atlas, and (3) a proprietary mortgage foreclosure data resource. These data sources enable us to define subgroups by neighborhood contextual factors, geographic access to food, and foreclosure experience.

In the end, we believe that the dynamics analysis encompassed in this full report yields useful and informative estimates of the dynamics of participation in SNAP, despite any shortcomings.

II. Weighting

This section describes the application of weights in this appendix and the main study, and another weighting topic—the construction of new longitudinal panel weights for infants born to households during the panel period.

A. Application of Longitudinal Weights

The primary analysis sample for this project consists of original sample members who were not lost to attrition through the first 14 waves of the 2008 SIPP panel. The Census Bureau assigns *longitudinal weights* to individuals who have reported or imputed data for all months of a reference period covered by a particular longitudinal weight. The Census Bureau also assigns longitudinal weights to individuals who left the survey universe (by dying, being admitted to an institution, or moving abroad, primarily) during the panel reference period, providing that they have data for all months that they were in the survey universe. At several points through the panel period of SIPP studies, the Census Bureau develops longitudinal panel weights that span the period from Wave 1 through selected subsequent waves, often roughly corresponding to calendar years. These longitudinal or "full-panel" weights compensate for the loss of respondents due to attrition. We analyze the *quality* of that compensation in Section III, and describe which weights were used in this section.

This assessment uses the 2008 SIPP Wave 1-11 longitudinal panel weights, although this and the main study use person-month data from Waves 1 to 14. However, the longitudinal weights for that full analysis period were still in development when this assessment was carried out. Ultimately, the complete analysis will employ the Wave 1-14 longitudinal weights, and the universe of individuals included in that study will be a subset of those included in this data assessment; those individuals who leave the SIPP universe in Waves 12, 13, or 14 will be excluded.

Three key points with regard to weighting:

- All of the weighting quality tests in Section III are restricted to the first 11 waves of the 2008 panel, so they are precise and compatible with the Wave 1-11 weights.
- The main study will use weights that are designed to compensate for cumulative sample loss through Wave 14, and
- Those weights will be applied to a smaller universe because of attrition after Wave 11.

B. Assigning Panel Weights to Children Born after the Start of the Panel

In the Census Bureau-provided longitudinal weights, infants born after the start of the 2008 SIPP panel lack both Wave 1-11 and Wave 1-14 longitudinal panel weights. For Wave 1-11 and, when they become available, the Wave 1-14 weights we identify which panel members with valid panel weights had children who were born after the start of the panel, and we assign longitudinal weights derived from their mothers, fathers, or guardians. We use a method identical to that employed in the SNAP dynamics studies of the 2001 and 2004 SIPP panels.

For any infant born after May 2008 (or born in May 2008 but not listed as a household member in that month), we assign panel weights according to a scheme that gives priority to the mother's weight, as detailed below.

If the child's mother (biological or adoptive) was present at any point, we assign the mother's weight to the child, except when one parent (either the mother or the father) was an original member of the panel and the other parent joined the SIPP household after Wave 1. If the father joined the household after Wave 1, we assign one-half the mother's weight. If the mother joined the household after Wave 1, we assign one-half the father's weight. This strategy of assigning half-weights in some cases is designed to increase the number of sample infants who receive panel weights. It should not affect the weighted number of infants significantly. In all cases, weights are assigned without regard to whether they were positive versus zero. If the appropriate weight for a child is the mother's weight and the mother's weight happens to be zero, then the assignment of a zero weight to the child is appropriate as well.

If an infant's biological or adoptive mother was never present, we assign the weight from the child's father, guardian, or household reference person. If the child's father (biological or adoptive) was present, we assign the weight (including values of zero) from the father. If neither parent was present, but someone in the household was identified as the child's guardian, we assign the weight from the guardian. If no one was identified as the child's guardian, we assign

the weight from the household reference person.[65] We follow this sequence regardless of the values of the weights.

Children who were adopted after May 2008 are eligible to receive panel weights, but only if they were also born after May 2008. Adopted children born in or before May 2008 are treated the same way as other individuals who moved in with panel members after Wave 1; they cannot be assigned panel (longitudinal) weights, but their data contributes to the family and household characteristics of panel members in the months that they shared such membership. In addition, while present they receive cross-sectional weights. In total, 2,211 children born between Wave 1 and the end of Wave 11 are assigned positive 11-wave weights. When they were finaly released in March 2014, the 14-wave longitudinal weights were assigned to children in the same manner.

III. Sample Loss and Seam Reporting

In this section, we explore the effects of sample loss and seam bias on SIPP-based estimates of participation dynamics. We then examine how response patterns in Wave 1 differ from patterns in Wave 2 and later. The key findings discussed in this section are as follows:

- The rates of sample loss in the 2008 panel are high, even relative to previous panels. About half of the households responding in the first wave of the SIPP are excluded from the dynamics analysis because they stop participating or otherwise have incomplete data. However, when we look at key individual characteristics, there is no evidence of substantial bias resulting from this sample loss.
- Patterns of seam reporting are evident across many characteristics. Among SNAP participants, over three quarters of program entries and over half of program exits occur on the first month of a wave. Seam reporting patterns are also apparent among potential trigger events such as changes in employment and changes in other income. As in prior SNAP dynamics analyses, this suggests that analyses of participation spell durations and trigger events need to allow for the fact that seam reporting can affect our analysis of short-term transitions, namely our ability to correlate changes in participation status and changes in employment, family composition, and income.

A. Sample Loss

Sample loss generally occurs when members of a household sampled for the survey either cannot be located or refuse to participate. In the 2008 SIPP panel, about 19 percent of households originally sampled did not respond or could not be identified for the Wave 1 interview (this is higher than the Wave 1 nonresponse rates from prior SIPP panels, where nonresponse rates ranged from about 5 percent in 1984 to 15 percent in 2004).[66] Among those individuals who were interviewed, a marked 51 percent stopped participating in the survey by the end of eleventh wave of the 2008 panel (the "effective" end of the survey for our analysis).

[65] A child could receive a weight from a stepparent only through either of these last two alternatives.
[66] These estimates are taken from http://www.census.gov/sipp/usrguide/ch2_nov20.pdf and http://www.census.gov/sipp/sourceac/S&A08_W1toW6(S&A-13).pdf.

This section examines the extent of sample loss and the implications that it may have for analysis of participation dynamics. If the individuals who left the SIPP sample are different from the individuals who do not leave, then estimates generated from the SIPP could be biased. The longitudinal "full panel" analysis weights described in the previous section are designed by the Census Bureau in part to address this bias. In this section, we examine weighted SIPP estimates to identify evidence of bias, and conclude that for broad characteristics, the SIPP weights appear to account for sample loss.

The SIPP observations used in the study of participation dynamics are limited to those that have complete data for every month that they are in the SIPP universe through the eleventh wave of the survey (these observations receive the full panel weights). Most of these are individuals with reported data available for each of the 44 months in the panel. However, some are cases that missed one wave of SIPP interviews and had the missing data from that wave imputed based on responses in the previous and subsequent waves. Others are observations for people who enter or exit the SIPP universe during the panel for reasons such as birth or death, moving into or out of the country, becoming institutionalized, and so forth. Individuals who enter or exit the universe receive full panel weights (and are included in the analysis) so long as they have complete information for those months in which they are in the universe. It should be noted that some individuals who leave the SIPP universe do return later in the panel.

In this context, sample loss (sampled individuals excluded from the analysis) is comprised of individuals that do not have complete information for those months for which they are in the SIPP universe. This includes individuals who stop responding to the SIPP (for instance, people who move and cannot be located, or people who refuse to participate in the SIPP in later waves), and individuals for whom at least two consecutive waves of the SIPP are missed, and therefore missing wave imputations cannot be completed. We refer to these two types of sample loss as attrition.

Table A.1 shows the total sample loss in the SIPP among individuals interviewed in Wave 1. Of the 105,451 individuals responding in Wave 1, 51 percent are lost due to attrition by the end of Wave 11. The remaining sample of 51,204 reflects those individuals who receive a full panel weight (for Waves 1 to 11) and are included in the analysis of program participation dynamics. Sample loss in waves 1 to 11 of the 2008 panel is greater than in waves 1 to 8 of the 2004 panel (51 percent compared to 38 percent). These person-level sample loss comparisons are only possible for waves with full panel weights. An examination of published wave-by-wave household sample loss rates permits direct comparison of Wave 8 sample loss rates in both 2004 to 2008. In 2004 the Wave 8 household sample loss was 33 percent compared to 38 percent in 2008. We would expect sample loss to be higher the longer the length of the panel (11 waves in 2008 versus eight waves in 2004), though the 2008 panel was already running at a higher loss rate by Wave 8.

Differential rates of sample loss are apparent when we look at broad population characteristics such as income and age. Table A.1 shows that rates of sample loss are higher among SIPP respondents with low income than for other respondents. While the overall combined sample loss rate is 51 percent, the sample loss rate for individuals below 10 percent of poverty is 61 percent. Table A.1 also shows that total sample loss rates are highest among individuals age 19 to 39—59 percent of all individuals and 62 percent of individuals below 100 percent of poverty in this age

group leave the sample—and lowest among individuals age 65 or older (37 and 36 percent, respectively). If not correctly accounted for, this type of differential sample loss could lead to biased estimates of participation dynamics.

Comparing cross-sectional and full panel estimates of the remaining population in January 2009 can provide some insight into the Census Bureau's ability to adjust for sample loss in their analysis weights. While full panel estimates only include those individuals with data for every month they are in the SIPP universe in Waves 1 to 11, cross sectional estimates include all individuals present in January 2009, regardless of subsequent SIPP response status. Because the full panel weights are calibrated to January 2009 population characteristics, full panel estimates of January 2009 characteristics should be similar to cross-sectional estimates if those full panel estimates are unbiased by sample loss. Differences between cross-sectional and full panel estimates, on the other hand, reflect potential bias introduced by sample loss.

Table A.2 presents estimates of key characteristics that are analyzed in the study of participation dynamics. In this table, estimates derived from the cross-sectional weights are compared with estimates derived from the full panel weights. While for most characteristics, such as SNAP participation, the full panel estimates appear similar to the cross sectional estimates, some estimates are different. Estimates of the number of Asian, non-Hispanic individuals are higher when using the full panel weights, but there is general agreement between the sets of weighted estimates for individuals in the other race and ethnicity categories. Estimates of individuals employed 35+ hours in some weeks are lower when using the full panel weights, though the sets of weighted estimates are similar for those who worked full time in all weeks.[67] Finally, there are several differences in the eleven-wave panel estimates versus those in the cross-sectional sample across participation in government assistance programs. The estimates of individuals receiving SSI benefits in January 2009 are higher when using the full panel weights and the estimates of both individuals receiving TANF and individuals receiving veterans disability payments are lower when using the full panel weights. Although there are differences between the cross-sectional and eleven-wave panel estimates, many differences are small or exist for uncommon categories of variables such as "with job, did not work" that pertain to few households.

We also compared the distribution of individuals by monthly income when using the cross-sectional and full panel weights (Table A.3). The decile values of the distributions of total family income are similar in the cross-sectional and full panel estimates for all income levels at or above the 30th percentile, but differ slightly below this level. The 10th percentile value for the distribution of individuals by total family income is about $44 higher in the full panel estimates—$920 compared with $876 in the cross-sectional estimates. As a result, the 10th percentile of the distribution of the full panel estimate as a percentage of the cross-sectional estimate is 105.0 percent. For the 20th percentile value, the difference is 102 percent. For the 30th percentile and above, the full panel estimate differs from the percentage of the cross-sectional estimate by less than 2 percent. This indicates that the bottom 20 percent of the distribution is skewed towards lower income amounts in the full panel estimates. Because both sets of weights produce similar estimates of the lower end of the distribution of family earnings, the differences in the lower tail of the total family income distribution may suggest that the full panel weights do not fully

[67] Additionally, estimates of individuals who report having a job but not working are much lower when using the full panel weights. However, this group is a very small subset of the SIPP population.

account for the disproportionate loss of individuals with various sources of unearned income from the sample. Indeed, a similar comparison of deciles of unearned family income (not shown) found all income levels at each decile equal or higher for the full panel estimates—peaking in the 8 to 10 percent range for the 40th to 60th deciles. We came to a similar conclusion when assessing the 2004 panel.

While there are differences apparent in the January 2009 population between the full panel and cross-sectional estimates, we are most concerned about whether these differences affect estimates over the life of the panel. Therefore, we examine the effects of sample loss a second way by comparing SIPP full panel estimates to estimates from an independent source at different points over the life of the panel. In Table A.4, we compare the distribution of population characteristics in the SIPP with the distribution observed in the Annual Social and Economic (ASEC) supplement, administered as part of the Current Population Survey (CPS) each March. The SIPP and ASEC estimates are similar in 2009, and for many characteristics, the SIPP captures changes over time as they are observed in the CPS. However, estimates of some characteristics trend away from estimates in the CPS. Key differences include:

- Both SIPP and ASEC estimates of the proportion of individuals under age 19 decline over time, but the SIPP estimates decline by a greater amount. SIPP estimates of the proportion ages 19 to 39 decrease over time, while ASEC do not. For individuals age 40 and older, SIPP estimates increase by more than ASEC estimates, resulting in a larger relative increase for SIPP estimates.
- ASEC estimates of the white, non-Hispanic population decrease over time, while those from the SIPP increase very slightly over time. At the same time, SIPP estimates of the Hispanic population decrease slightly over time, while those from the ASEC increase.
- SIPP estimates of individuals receiving SNAP benefits are higher than the ASEC estimates, though they both increase over time at a similar rate.
- SIPP estimates of adults receiving SSI increase slightly over time; the ASEC estimates remain constant through most years, but increase slightly in the 2012 ASEC.
- SIPP estimates of the proportion of individuals living in two-parent families increase over time, while ASEC estimates decrease.

If we assume that the ASEC estimates are unbiased estimates of the full population over time, then we can conclude that there is some bias in the SIPP estimates, but that the bias is relatively small. For example, most of the differences between the January 2012 SIPP estimates and the March 2012 ASEC estimates were one percentage point or less. Given this small magnitude, we would not anticipate that bias in SIPP-based estimates of these characteristics over time would lead to meaningful bias of estimates of program dynamics.

In summary, our analysis of sample loss in the 2008 SIPP panel leads us to conclude that there is some evidence of bias from sample loss, and the extent of bias is similar to past SIPP panels, but such bias is not a significant concern. While just over half of the Wave 1 sample is not included in the full panel analysis file, the full panel weights appear to adequately correct for this sample loss when we examine key characteristics for January 2009. The correction is generally similar to that in the 2004 SIPP panel.

It should still be stressed that while there is no large bias in the characteristics we examined, it is a concern that the full panel analysis file is substantially smaller than the original 2008 SIPP sample. Having a smaller set of observations leads to reduced precision in the estimates of participation patterns and in estimates of what factors affect entry and exit. Furthermore, the 2008 panel sample size is slightly smaller than that in the 2004 panel. However, like the 2004 panel, the 2008 panel did not suffer from a large-scale cut between Waves 1 and 2 as did the 2001 panel. Additionally, the final 2008 panel SNAP dynamics analysis file will be six waves longer than that of the 2004 panel, so a greater degree of sample loss is expected.

B. Seam Bias

In the SIPP, the "seam effect" reflects the tendency of individuals to report changes in status on seams—the months that represent the start or end of each four-month reference period. This has important implications for the study of participation dynamics, which is focused primarily on individuals' reported changes in program participation. The seam effect can affect the estimated duration of participation spells as well as the timing of program entry and exit relative to other changes. In this section, we examine patterns of seam reporting to determine which transitions are affected. Unfortunately, on a given seam month, it is not possible to determine which reported transitions are "real" and which actually occurred in a different month. Therefore, as in prior Dynamics studies, we must conduct the analysis of participation dynamics in a way that does not rely on the short-term timing of transitions.

Table A.5 shows the distribution of key transition events by the months that those transitions are reported in the SIPP.[68] For most events, the transitions disproportionately occur on the left seam (the first month of the reference period). For example, 76 percent of reported entries into SNAP and 56 percent of exits occur on the first month. If there were no bias, we would expect each seam to account for about 25 percent of reported transitions.[69] This suggests that individuals who enter SNAP in a given wave tend to report that they started receiving SNAP benefits in the first month of that wave, and individuals who exit in a given wave also tend to report that they no longer received benefits in the first month of that wave. All else being equal, this would have the effect of lengthening estimated spell durations. The percent of reported entries at the left seam is larger than in the 2004 panel (76 percent in 2008 versus 69 percent in 2004), as is the percent of reported exits at the left seam (56 percent in 2008 versus 47 percent in 2004). However, the percent of reported exits at the left seam is substantially lower than it was in the 2001 panel (56 percent in 2008 versus 74 percent in 2001), indicating that while the level of the apparent seam bias is large, the extent is not unprecedented. The larger incidence of seam reporting in the 2001 panel, compared to 2004 and 2008, is likely attributable to the introduction of the Census Bureau's most extensive dependent interviewing in the 2004 panel, in which respondents who had reported receiving SNAP in the previous wave were reminded of this fact.

[68] Left seams from Wave 1 and right seams from Wave 14 are excluded from the estimates in Table A.5. In Wave 1, the left-seam transitions cannot be observed since there are no data on the month prior to the left seam. In Wave 14, while right-seam transitions can be observed if they occurred after reference months 1, 2, or 3, but not after month 4 in our analysis dataset which is restricted to Waves 1 to 14.

[69] Because the SIPP sample is split into 4 random rotation groups, with each rotation group having a different four-month reference period, seasonal bias or other factors would not affect the distribution of transition events across reference months.

Transitions in other events that could affect SNAP entry and exit are also subject to seam bias. For example, among all individuals age 16 and over, just less than half of job entries and exits occur on the left-seam. Similarly, individuals disproportionately report changes in earnings of more than 5 percent on left seams. The seam effect for changes in earnings is less than that of changes in TANF or SSI. For TANF, 70 percent of changes greater than 5 percent are reported on the left seam, while for SSI, 87 percent of changes greater than 5 percent are reported on the left seam. Changes in household size appear to be only slightly affected by seam reporting.

To determine whether patterns of seam reporting are associated with characteristics of the SIPP household, we compare left seam reporting of transition events for different subgroups in Table A.6. For individuals who report receipt of SNAP at some point during the 2008 panel, rates of seam reporting reflect those of the population as a whole. However, when we limit the analysis to individuals whose household respondent for the wave changed (and only examining those waves where the household respondent is different), seam reporting for most transitions approaches 100 percent. The seam effect is higher for both SNAP entries and exits when a proxy responds for the individual than for all individuals. Finally, the seam effect is higher for records where the entire month is imputed, relative to the full sample. These findings were similar in the 2004 panel.

The extent of seam bias in the 2008 SIPP panel constrains our ability to examine how program participation is affected by the timing of other events. Because of seam reporting, an observed transition could have occurred in the reported month or in any other month of a wave. Indeed, it is even possible that a trigger event that precedes a SNAP transition is reported after that transition is reported. As a result, as in prior SNAP dynamics analyses, our analysis accounted for the SIPP seam effect. We used trigger "windows" of 4 and 8 months to capture transition events that may have been reported on a seam, rather than attempting to correlate transition events and SNAP participation changes over two months.

IV. Data Inconsistencies

In this section, we provide a summary of inconsistencies we identified in the 2008 SIPP panel data. Inconsistencies may reflect reporting errors or data processing errors, and using data with errors could lead to biased estimates of participation dynamics. We discuss our analysis of two types of inconsistencies: (1) cross-sectional inconsistencies, where some respondent or household information conflicts with other information in the same month; and (2) longitudinal inconsistencies, where a respondent's information in one month is inconsistent with information provided in a subsequent month.

Our major conclusions and decisions were as follows:

- As in earlier panels, we found conflicting information for some individuals about whether or not the individual was employed in a given month. We assessed the implications of using the same recode of the SIPP's employment summary variable in the 2008 panel as we used in 2004 and 2001 and decided to continue using it.
- Some SNAP and TANF assistance units have conflicting information on the amount of benefits received in that unit. Moreover, in some cases, it is difficult to determine whether the one unit observed in the SIPP actually represents two separate assistance

units. We will use an algorithm developed for earlier studies to resolve these inconsistencies based on a set of simple assumptions.

- Underreporting of program participation is significantly greater in Wave 1 than in Wave 2. One possible explanation of this behavior is that respondents are "learning" how to respond accurately to the survey instrument. This could bias estimates of participation spells that are active in the first wave, as well as estimates of spells that start in the second wave. As in prior studies, we will reduce this bias by estimating entry and duration for all waves in the study panel, allowing individuals in the sample to contribute multiple SNAP spells to the analysis.

A. Cross-Sectional Inconsistencies

There are two key sets of cross-sectional inconsistencies we identified in the 2008 SIPP data. The first arises in determining which individuals are employed, unemployed, and out of the labor force in a given month. The second arises in the formation of SNAP and TANF units in the SIPP data.

1. Employment Status Indicators

In the 2001 SIPP panel, Mathematica identified a number of inconsistencies with key variables that determine employment status. In particular, some individuals had conflicting information on whether they were employed, and if so, the number of hours that they worked. Mathematica worked with Census Bureau staff to investigate these issues and determined that there were multiple reasons for these inconsistencies. As a result, for many of these inconsistencies it was difficult to determine which variables should be trusted and which should be ignored or modified. After a comprehensive assessment of the SIPP's employment status summary variable, RMESR, and other variables such as hours worked and job start and end dates, Mathematica decided on a recoding procedure that preserved the employment status value from RMESR for most of the sample, but recoded it using additional information from the "usual hours worked per week" variable (RMHRSWK) to form a new employment summary measure, EMPCAT.

Using the 2008 panel we cross-tabulated in month 1 of the panel the constructed EMPCAT variable with the RMESR and RMHRSWK SIPP variables to identify how many sample members would have their employment status recoded if EMPCAT were used in place of RMESR in the current study. We found that:

- The constructed EMPCAT variable generates slightly lower estimates of employment and higher estimates of unemployment than does the SIPP RMESR variable. Using the EMPCAT variable, about 46 percent of the sample would be categorized as employed, 4 percent are unemployed, 29 percent are out of the labor force, and the remaining 21 percent are not in the universe. In comparison, 47 percent of the sample is categorized as employed using the RMESR variable, 3 percent are unemployed, 29 percent are out of the labor force, and 21 percent are not in the universe.

- Over half of sample members that would be categorized as employed using RMESR but unemployed using EMPCAT have (1) a RMESR variable that indicates that they had a job in all months but were absent from work without pay for at least one week

and the absence was not due to a layoff; and (2) a RMHRSWK value that indicates he or she did not work.

- Only 60 individuals in the sample (less than 0.1 percent) are categorized as employed using EMPCAT but out of the labor force using RMESR. In all but two of those cases, the sample members reported working 1 to 34 hours in all weeks. In the other two cases, the individual reported working 1 to 34 hours in at least one week but not all weeks, and worked zero hours in the remaining weeks.

The employment status variables are important to our analysis because we investigate the role that changes in employment status have on program entry and exit. Based on this tabulation (and similar tabulations in other months of the panel), we will use EMPCAT in place of RMESR to define monthly employment measures. This is the same approach we used in the prior two studies.

2. SNAP and TANF Unit Formation Problems

In some cases, individuals who are members of the same SNAP or TANF unit have information that conflicts with other members of that unit.[70] In terms of SNAP units, we identified a handful of cases with one of two inconsistencies:

(1) The program unit had extra SNAP benefits. In each SNAP unit, the SIPP is only supposed to record the SNAP benefit amount on one individual's record – that of the unit reference person. However, we find that in some units, the benefit amount is assigned to multiple people—the unit reference person and one or more non-reference persons. Often, the individuals in the same unit have SNAP benefits of different amounts. It is unclear why these inconsistencies occur. It could be that the benefit amount assigned to non-reference people is superfluous (and should be ignored), that the unit's benefits have been pro-rated across multiple unit members (and should be summed across members of the unit), or that the unit has been incorrectly formed (and should be split into two units).

(2) The SNAP unit reference person was a participant in another SNAP unit. The SIPP records include "pointers" that indicate, for each individual, which other household member is their SNAP unit reference person. In some households, some members point to one individual as the unit reference person, who in turn points to another individual as the unit reference person. This second reference person is also covered by SNAP and points to him/herself as the reference person of his/her unit. In these cases, it could be that there is only one SNAP unit and the first set of pointers is erroneous. Alternatively, it could be that the household has multiple units with two reference persons, and the pointer on the first reference person is erroneous.

Each month, between 3 and 8 percent of SNAP units (unweighted) have one of these two inconsistencies (Table A.7). Similar problems exist for TANF units, where the same SIPP procedures for identifying unit reference people and income are used. For TANF units, the rates of inconsistencies are generally smaller than those for SNAP units. Although the TANF

[70] In this section, we refer to "units" as those members of a dwelling unit that receive benefits under the same case. We use the term "household" to refer to the SIPP household.

inconsistencies range from 3 to 8 percent of TANF units (unweighted) each month, they are lower than the SNAP rates in most months by several percentage points. These percentages are higher than those in the 2004 panel (2 to 5 percent of SNAP units and 3 to 7 percent of TANF units).

The percentage of SNAP units with inconsistencies is fairly constant at around 3 percent from month 1 to month 4, then jumps to 7 percent in month 5 and remains fairly constant (ranging from 6 to 8 percent) from month 5 onward. The extent of the jump between Waves 1 and 2 was also present in the 2004 panel. In the earlier panel, we performed additional diagnostic tabulations on the cases with inconsistencies. We concluded that the introduction of dependent interviewing beginning in the 2004 panel, in conjunction with changes in interview status from "self" to "proxy" between waves, may be responsible for a large proportion of the inconsistencies—the reporting of two SNAP benefit amounts within one SNAP unit.

The effect of dependent interviewing on the increase in inconsistencies between Wave 1 and 2 appears to be compounded by an increase use of proxy respondents in Wave 2. The increase in the use of proxy respondents may be due to Wave 1 interviews being conducted in person and Wave 2 interviews being conducted by telephone, as the SIPP tries to do only one in-person interview per year (and Wave 1 interviews are always in person).

These inconsistencies are a concern in part because they could affect our estimates of the number of SNAP units experiencing certain events and potential TANF trigger events. We developed basic assumptions to resolve these inconsistencies. In units where multiple individuals have income, we will assume that there is only one program unit (not multiple units for each individual with income), and we will assume that the only income to be counted is that of the designated reference person. In cases where one reference person points to another reference person, we again will assume that there is only one program unit, and that the individual that points to him/herself is the reference person of the unit.

B. Longitudinal Inconsistencies Between Wave 1 and Wave 2 Responses

In the 2008 SIPP panel, as well as in prior panels, patterns of responses between Waves 1 and 2 suggest a "learning" of the SIPP instrument. Underreporting of program participation is substantially larger in Wave 1 than Wave 2. It could be that individuals in Wave 1 are more likely to underreport—intentionally or unintentionally—because they are not familiar with the interview procedures; then as they learn the procedures, they provide more accurate information. This type of response pattern has two key implications for the analysis of participation dynamics. First, it would lead to an under-representation of participation spells in the first wave of the SIPP (and the participants that report may be systematically different from the participants that do not report). Second, it would lead to an overcount of new spells in the second wave of the SIPP. Unfortunately, this problem cannot be fixed in the data. Instead, we can at best use sensitivity analysis to explore how our estimates of participation dynamics might be affected by the differences between Wave 1 and Wave 2 responses.

Table A.8 shows that program participation in SNAP and TANF is underreported in Waves 1 and 2 when considering all participants. Participation is also underreported for children, but is generally overreported for adults. In the 2004 panel, SNAP and TANF receipt were underreported for adults. For all participants and for children, the underreporting is lower in the 2008 panel than in the 2004 panel.

Underreporting of program participation is consistently larger in Wave 1 than in Wave 2 (Table A.8). For each wave, we examine the number of participants in the common month of that wave.[71] For example, the number of individuals reporting SNAP receipt in the common month of Wave 1 (August 2008) is 15 percent below administrative totals for that month, while the number in the common month of Wave 2 (December 2008) is only 6 percent below administrative totals. The difference between Wave 1 and Wave 2 is larger for SNAP and TANF than for employment.

The increase in reported SNAP participation between Waves 1 and 2 could be the result of a number of factors. First, individuals who are present in both waves may report participation at higher rates in Wave 2. Second, it is possible that individuals who enter the SIPP sample in Wave 2 (for instance, individuals that move into a SIPP household) are disproportionately SNAP participants. Finally, the weighting adjustments in Wave 2 may disproportionately increase the weights of SNAP participants.

Table A.9 decomposes the observed change in SNAP participation from wave to wave by these various factors. For each wave, we estimate the number of SNAP participants in the common month (using cross-sectional weights). The estimated number of participants increased by 4.9 million between August and December 2008, 2.1 million between December 2008 and April 2009, 2.2 million between April and August 2009, and 2.1 million between August and December 2009. We decompose these changes into three categories: **(A)** changes in reporting of SNAP participation status among individuals present in the common months of the current and previous wave; **(B)** changes in reporting among individuals who are present in the current wave but were not in the SIPP sample in the common month of previous wave,[72] and **(C)** residual growth. Residual growth is the difference between the observed change and the sum of the first two categories. This growth can be explained by changes made to individuals' weights across waves to account for movement of other individuals into and out of the SIPP sample.

The estimates in Table A.9 support the theory that individuals are learning the SIPP survey between Waves 1 and 2. The large increase in participation between Waves 1 and 2 is driven not only by the large increase in actual SNAP participation, but also by a relatively large number of people who did not report participation in Wave 1 but reported participation in Wave 2. It does not appear that the change is driven by SNAP participants entering the SIPP sample in Wave 2, or by weighting adjustments between the two waves. The number of individuals present in both waves that report participation in Wave 2 but not Wave 1 (7.6 million) is higher than the analogous number observed in subsequent Waves (between 5.6 and 6.1 million). At the same time, the number reporting SNAP participation in Wave 1 but not Wave 2 (3.2 million) is relatively more consistent with the analogous number observed in subsequent Waves (3.8 million to 4.0 million). The net increase due to changes in reporting status among individuals present in both Waves is 4.5 million, higher than the net increase observed in later waves.

[71] The common month refers to the one month of each Wave that is common to each SIPP rotation group. Using the common month allows us to simplify the analysis to reflect one month of each Wave.

[72] Individuals are considered absent from the SIPP sample in a common month even if they were present in other months of that or prior waves. For example, an individual can respond in Wave 2, not respond in Wave 3, and respond again in Wave 4. For this analysis, we would consider that individual absent from the sample in Wave 3. Note that there are 221,015 (weighted) individuals in Wave 2 who were not present in the common month of Wave 1. These individuals were present in at least one other month of Wave 1 besides the common month.

Based on our assessment, we conclude that there appears to be some factor that leads individuals to underreport program participation in Wave 1, and correct that underreporting in Wave 2. This could lead to biased estimates of program participation dynamics if the spells that are unreported in Wave 1—in particular, spells that begin in Wave 1 but are unreported—are systematically different from those spells that are reported. In our analysis, we will test the sensitivity of our results to whether or not Wave 1 spells are included.

V. Comparisons of SIPP Characteristics of SNAP Participants with Administrative Data

The SNAP QC administrative data file provides data on a random sample of SNAP units. To assess the SIPP data, we compared the characteristics of SNAP participants in the SIPP with the characteristics of participants in the SNAP QC data file for calendar years 2009-2012 (Table A.10). In general, the SIPP data align closely to the SNAP QC data. However, there are some notable differences:

- The age distribution of SNAP participants in the SIPP is inconsistent with the distribution in the SNAP QC data. In particular, a higher proportion of individuals in SNAP units in the SIPP are adults than in the SNAP QC file. This is a known problem with the SIPP data. It is due, in part, to the fact that the SIPP unit formation procedures do not permit child-only SNAP units to exist. Instead, the SIPP forces adults to be part of the SNAP unit. Unfortunately, it is not possible to determine which units should be child-only units. The difference in the proportion of individuals in SNAP units that are adults between the 2008 SIPP panel and the SNAP QC files is about the same as it was in the 2004 panel.
- SIPP data have proportionately fewer households with zero earnings than SNAP QC data, and among households with income, levels are higher in the SIPP than in the QC data. These inconsistencies were also present in the 2004 panel, though differences are greater in the 2008 panel than they were in the previous one.

VI. SIPP Topical Module Data

Data from SIPP topical modules are essential to a study of program participation dynamics. Two topical modules inform our program participation research: (1) the Wave 1 Recipiency History Topical Module, which provides essential data on recipiency timing and history, and (2) the Wave 1 Employment History Topical Module, which provides data on labor force participation, employment, and unemployment.

These particular topical module data have been well vetted over two decades of SIPP-based dynamics research; concerns regarding accuracy of recipiency start dates and overall data accuracy are well documented. This section presents our continuation of this tradition, as we revisit specific topical module data concerns addressed in past SNAP dynamics research and assess comparability of these data across studies based on the 2008, 2004, 2001, and 1996 SIPP panels.

This section examines and addresses specific concerns that are fundamental to using SIPP topical module data. We find that while some data problems persist, topical module data on SNAP recipiency and employment history are actually improved in several areas from past panels. Overall, the topical module data for the 2008 SIPP panel are certainly sufficient to support our SNAP dynamics research. Further, we find the 2008 panel data to be strongly comparable to those collected in the 2004 panel and largely comparable to the other SIPP panels, with some caveats, which we discuss below.

The Census Bureau imposes confidentiality restrictions on data items that may reveal participant identity. However, some of these data elements are necessary for our analysis. In particular, beginning with the 2004 SIPP panel, the Wave 1 Recipiency History Topical Module public use data file no longer includes the start date for SNAP spells that begin prior to the interview month and the Employment History Topical Module no longer includes the month a respondent last worked. Because these data elements are critical to research on SNAP spell length, a key aspect of this dynamics research, Decision Demographics arranged for special permission to analyze these data within the Census Bureau. The study team is grateful to the Census Bureau for this access and support of USDA's research. In keeping with privacy concerns, we include only summary tables that sufficiently safeguard participant privacy.

A. Recipiency History Topical Module

A main objective of SIPP is to provide accurate and comprehensive information about the income and program participation of individuals and households in the United States. Since the 1986 SIPP panel, a Recipiency History Topical Module (RHTM) supplements the survey's core questions on program participation, collecting key information on the length of time persons have participated in government income transfer programs such as SNAP.

Historically, questions persist around quality of the RHTM data. Specific concerns have focused on missing data, imputation problems, and accuracy of data, particularly the SNAP start date. This section examines and addresses specific concerns that are fundamental to using RHTM data. Specific data quality issues that we analyze and discuss include:

1. Design changes between panels that affect comparability of findings
2. Quality of algorithms used to allocate SNAP start dates
3. Accuracy of SNAP spell duration data

We examine these items and also assess the extent of comparability of data across panels.

Many participation spells reported in the core survey are "left-censored," that is, they are spells that are in progress at the start of the panel, and thus we do not observe their start date during the panel period. RHTM questions mitigate left-censoring, gathering start dates for SNAP and other assistance program participation spells that began prior to the start of the longitudinal study period.

The RHTM is administered in the first wave of the 2008 SIPP panel. As shown in Table A.11, interview months were from September 2008 to December 2008, and the primary reference period for core questionnaire items was the four calendar months preceding the interview month (in this

case, May 2008 through November 2008). In the case of left-censored spells, respondents are asked when their active SNAP spell began.

Looking at these issues for the 1991 SIPP panel, Gleason et al. (1998) found evidence of data concerns with the RHTM data. They attributed problems to the fact that, for the 1991 SIPP panel, the recipiency history data were collected in Wave 2, eight months after the first reference month of the panel; they decided to exclude the month 1 spells from the main spell analysis. In contrast, Cody et al. (2005) found fewer problems with the 2001 panel topical module data. Specific tests, which we replicate for 2008 data, found that the 2001 recipiency history data were markedly better than the 1991 data and suitable for analysis for all waves. Mabli et al. (2011a) applied similar tests to the 2004 data and found that while problems persist, the data were indeed suitable for their dynamics analysis.

The analyses that follow largely build upon assessments of RHTM data made by these earlier studies.

1. Design Changes Across SIPP Panels And Resulting Comparability Issues

The key FNS objective of this dynamics study is, to "Develop measures of recent SNAP participation dynamics, including entry rates, spell lengths, exit rates, and re-entry rates, *comparable to previous estimates*." Since comparability across dynamics studies is core to our analysis objectives, our aim of this data assessment study is to produce analysis tables comparable to those presented in dynamics studies over the past two decades. This section discusses design changes that may affect comparability of findings.

Based on our analyses, the 2004- and 2008-based analyses are largely comparable. For the 2004 panel, the Census Bureau redesigned several aspects of the RHTM in response to a series of recommendations from the SIPP Continuous Instrument Improvement Group.[73] As discussed in Mabli et al. (2011a), we found that the 2004 SIPP panel incorporated several redesign elements to topical modules that improved the data quality but may have slightly compromised the comparability of findings across studies. These changes were maintained in 2008. Further, the 2008 SIPP introduced no significant methodological changes.

A detailed description of the 2004 panel changes can be found in Appendix A of Mabli et al. 2011a). Items that changed beginning in 2004 that make the 2004 and 2008 panel data slightly different in nature from the 2001 and earlier panel data include the following:

- The 2004 and 2008 RHTM SNAP recipiency questions are near the end of the interview to allow probes for categorical eligibility for SNAP based on questions about cash assistance. This should represent an improvement to the quality of the SNAP participation data over the 2001 and earlier panels, but may compromise comparability in that SNAP participation may be relatively underreported in the earlier panels compared.
- The 2004 redesign changed the nature of the SNAP start month and year questions for left-censored spells active in month 1. By changing the phrasing from "When did

[73] Moore (2007) provides a complete report on the changes and their effects on data quality, and Mabli et. al (2011a) discusses the implications for dynamics research in his Appendix A.

[NAME/you] ***apply*** for the Food Stamps you *received*? to "When did [NAME/you] start **receiving** Food Stamps CONTINUOUSLY, every month [.../through [month]]?" the requested date changed from the initial application date to the initial receipt date. Receipt dates may lag application dates by one or more months. The phrasing subtleties concerning application and receipt dates could cause the 2004 and 2008 reported spells to be slightly shorter than spells in the 2001 and earlier panels (for spells beginning before the first reference month). However, this possible one-month lag will not unduly affect our analysis of spell length duration because it is unlikely to change the median spell length. Accurate recall of SNAP start month for longer spells is likely to be challenging in any case.

- The redesign slightly adjusted the universe for the RHTM to compensate for previous minor omissions due to CAPI branching issues. This improves the overall quality of the SNAP recipiency data in 2004 and 2008 compared to earlier panels.
- The 2004 panel was the first to probe for SNAP start dates that came before a recipient's 18th birthday; this is employed again in the 2008 survey. This slightly increases coverage in 2004 and 2008 studies compared to earlier studies.
- To protect against the possibility that a user might recognize the identity of a SIPP respondent with a very old SNAP initiation date, the start year is "bottom-coded" on the public use files so that no dates before a certain point (1970 for the 2008 panel) are revealed. Beginning with the 2004-based study, and continuing in this 2008-based study, because we use in-house data to gain access to key variables not on the public use data files, we took the opportunity to employ the more accurate non-bottom-coded data.[74] As such, the spell lengths are more accurate in the 2004 and 2008 studies, relative to prior studies. However, because no more than the bottom 3 percent of data are suppressed, this caveat is not likely to affect comparability of spell length analyses between the 2004 and 2008 studies and the earlier studies; neither the median spell length nor even the top quintile is likely to be affected.

2. Results of Algorithms Used To Assign SNAP Start Dates

Because dynamics studies examine participation patterns, including spell lengths, we need to identify the start dates of left-censored spells for all members of recipient households. SIPP asks RHTM history questions only of sample members age 18 or older who are authorized to receive SNAP benefits; we refer to these respondents as "SNAP reference persons."[75]

The left-censored start date questions were restricted to those with active month 1 SNAP spells. In this study, which uses the individual as the unit of analysis, we need to know the start dates of left-censored spells for all members of recipient households (including both SNAP reference persons and other household members).

We used the same approach we employed in the 2004-based study[76] to determine the start date of a left-censored spell for an individual who was not the SNAP reference person but who lived in

[74] The two variables affected by use of real instead of bottom-coded data are EFBG120Y (Year started SNAP receipt for active month 1 spells), and EFSSTRYR (Year first received SNAP).
[75] The respondent can be 18 in any month of the four-month reference period.
[76] Also used by Gleason et al. (1998) and Cody et al. (2005).

the same household as the SNAP reference person during the first panel month. In general, this approach assigns parents' start dates to children, and assumes adults in the SNAP household had the same start date as the reference person unless they moved in after the reference person's start date.[77]

Sufficient Sample of SNAP Reference Persons

Table A.12 summarizes the start date status of individuals who report active SNAP spells in their first month of the survey.[78] These spells are all left-censored by definition and thus require the RHTM to collect the date when this active month 1 spell began. The table shows weighted and unweighted samples and the extent to which the start date of the month 1 spell is missing.

The 2008 SIPP panel has an unweighted sample of 4,076 active SNAP spells in month 1. This sample size is a fifth smaller than that of our 2004-based study, but is substantially more than the 2,700 found in 2001. The 4,000 cases represent a sufficient sample for our analysis. Compared to the 2004 study, our 2008 sample includes 16 percent fewer SNAP reference persons and 22 percent fewer other members of SNAP units.

Assessing Extent of Missing and Imputed SNAP Start Dates

Because this study looks extensively at spell length is it critical to understand how long an individual has been on SNAP. Table A.12 shows that all SNAP reference persons have information available about when they began receiving SNAP, although about a third of those start dates were imputed. (This finding is highly comparable to findings from 2004, in which 33 percent of 2004 SNAP reference person start dates were imputed.)

Most imputed dates are missing only the start month; the respondent provided the start year (72 percent of the unweighted imputations). In total, just 10 percent of unweighted reference persons in our study required full imputation of the SNAP starting date and 22 percent of other members of the SNAP household required full imputation.

Although we are able to assign a start date to all SNAP reference persons, we are unable to do so for about 5 percent of other members of SNAP units. Either start dates are missing for these cases

[77] Specifically, the four rules are: (1) If the individual was a child of a SNAP reference person and under age 18, the child's start date was the start of the reference person's spell if the spell began after the child was born; otherwise, the start date is the child's birth date. (2) If the individual was at least age 18**,** we determined when the individual and the SNAP reference person moved into their current residence using information in the Wave 2 topical module. The spell start date of the individual was then calculated using information on order of the move dates and the spell start date. For example, if the individual moved into his or her month 1 address after the reference person did but before the reference person's spell started, the spell start date of the individual was set to the start date of the reference person's spell. In some instances, we also used Wave 2 topical module information on the prior residence of household members before they moved into their current address. (3) If the individual was a child of an adult in the household who was not a reference person but has SNAP, the start date of the child was the start date of the parent (as calculated using rule 2) if the child was born before that start date. (4) If the individual was a child unrelated to any household member, then we used rule 2 if the child was at least age 15, and rule 1 otherwise. We used this procedure because the residence history questions were not asked of children who were under age 15.

[78] All of the topical module data in Tables A.12-A.21 are reported only for panel members to whom we have assigned a longitudinal panel weight, with the addition of newborns who join SIPP households during the study period. We assign those newborns their parents' or a surrogate's weight.

because we do not know when the person moved into the month-1 SNAP household or we do not know, with certainty, the order of a move date and a spell start date. Start dates for other unit members are imputed either because their pre-panel residence information was imputed or because the spell start dates of the SNAP reference person were imputed. Imputation patterns among the other members of SNAP units for whom we have provided start dates are similar to those of the reference persons, with most having only the month imputed. This is expected since other unit members were largely assigned data from the SNAP reference persons they live with. Overall, the percentage unallocated in 2008 is lower than the 8 percent of other members with unassigned dates in the 2004 panel.

3. Accuracy/Reasonableness of Spell Length Data

Because the Census Bureau only collects start dates from the SNAP reference person and we assign start dates to all others in SNAP units through the process described above, our analysis of underlying data quality is focused primarily on SNAP reference persons. This section presents our analysis of data issues surrounding the SNAP start date and sheds light on a two decades-old SIPP mystery.

Negative Spell Lengths in Past Dynamics Studies: No Longer Observed in 2008 Data

A concern with RHTM data that has beset past dynamics studies, but is resolved for this 2008 study, is the presence of negative SNAP spell lengths. A negative SNAP duration occurred in past studies when the SIPP core-based questions revealed that an individual was receiving SNAP in month 1, but the response to the RHTM question about the starting date of the month 1 spell was *after month 1*. In the 2004 SIPP panel, about 7 percent of the SNAP reference persons' month 1 spells started after month 1, resulting in *negative* elapsed durations. This is the same level documented by Cody et al. for the 2001 panel, while Gleason et al. found as many as 10 percent of reference persons had negative durations in the 1991 panel. While past authors posited theories, no definitive explanation existed.

As shown in Table A.13, which presents the elapsed length of the month-1 active spells for SNAP reference persons, our sample contains no individuals with negative spell lengths. Because we no longer observe negative-duration SNAP spells, we sought to better understand what caused these negative spells in the first place. With generous assistance from Census Bureau staff, we investigated their imputation routines from 2004 and earlier panels and learned that negative spell durations were the result of faulty start year editing procedures in the Census Bureau's imputation process. Specifically, in 2004, a cold-deck imputation procedure, used to correct missing and invalid SNAP start months, fixed the start month, but inadvertently assigned 171 respondents to a start year of 2004 that should have been 2003.[79] This analysis supports the theory purported in previous studies, that the Census Bureau meant to impute the previous year, but did not alter the year variable.

[79] Not all 171 cases were included in the 2004 analysis sample, as not all had valid Wave 1-8 longitudinal panel weights.

We also discovered that the SIPP editing routines for left-censored cases reset the RHTM reported month 1 start dates to one month prior to a respondent's first reference month.[80] This editing program, used to "clean" the interview data, does not allow a respondent to report that they began receiving SNAP in their first panel month. Rather, reported start dates equal to panel month 1 are reset to one month prior. This editing routine is likely a vestige of the former recipiency question (2001 and earlier panels), which asked when a respondent *applied for* their current SNAP benefits. The one-month date offset may have been intended to correct for an expected one-month lag between application for, and receipt of, SNAP assistance. However, when the question changed in 2004 to ask when a respondent first *received* SNAP benefits, this imposed one-month lag remained. As such, no respondents have a start month equal to their first reference month. This data artifact will cause us to measure these specific spells as one month longer than they probably actually are.

Left-censored spell respondents who report a SNAP start year equal to the interview year but do not provide a start month are also imputed to begin receiving SNAP one month prior to their first panel month. These respondents might have first received SNAP any time between January and November of 2008, depending on their rotation group (and thus with an elapsed spell duration of 1 to 4 months). However, the imputation routine assigns all of these cases an elapsed spell duration of just one month. This may bias our spell length estimate downward for these cases for 1 to 3 months per participant. The calendar month shift for the 2008 SIPP panel (first interview took place in September instead of February as in the 2004 and 2001 panels), inadvertently mitigated this imputation error, resulting in no negative spell durations. Imputation routines were the same, but no year lines were crossed, so no artificial negative spells resulted.

Table A.13 also captures the relationship between imputed start and spell duration, as the lower panels of the table compare elapsed spell lengths for individuals with imputed, non-imputed, and month-only imputed start dates. As one would expect, forgetting a start month is correlated with longer elapsed spells; 29 percent of those with only months imputed (meaning the respondent recalled the start year) have elapsed spell lengths of five or more years, compared to 25 percent of individuals with non-imputed spells. Our analysis suggests that Census Bureau imputation algorithms appear to favor longer spell lengths, a pattern present in the 2004 SIPP as well. Half of imputed start date cases have been on SNAP for three years or more, compared with 42 percent of non-imputed cases.

Assessing Whether Spell Lengths are Reasonable

To assess whether allocation procedures for other SNAP unit members result in reasonable spell lengths, Table A.14 compares elapsed durations of *all* SNAP participants with those of SNAP reference persons. SNAP reference persons have slightly longer spells than all participants do: 25 percent have been in progress for just 6 months or less and about a third have been in progress for 1 year or less, compared to 27 percent and 38 percent of all participants. These differences are very similar to those from 2004 and 2001.

[80] This procedure does not apply to respondents who supplied a start year earlier than the interview year or no start year at all; those start dates are allocated using hot deck and logical imputation procedures.

At the other extreme of duration, 28 percent of SNAP reference person spells have been in progress for more than 6 years, fewer than observed in 2004 and 2001. However, the median elapsed time for 2008 reference persons is 2 years, and the mean elapsed time is 5 years, nearly identical to 2004 (and 10 percent higher than 2001, as expected based on business cycle patterns). The large difference between the mean and median observed in all the studies reflects the predominance of long spells. As expected, the elapsed spell durations were greater for reference persons than for all persons, at least partly because elderly reference persons, who have longer spell durations, are less likely to have children or others present in the household to whom their long spell durations are assigned.

Using In-Sample Methods to Assess the Accuracy of the Recipiency History Data

In assessing the accuracy of the SNAP start dates and recipiency history profiles, we also use five "in-sample" assessment methods.[81] To assess our allocation procedures for the full SNAP sample, this analysis, presented in Tables A.15 through A.20, is based on SNAP spells among all persons who received SNAP (not just SNAP reference persons).

1. *In-Sample Assessment Method 1: Compare the proportion of spells that began in month 1 with the proportion of spells that began in other panel months (Table A.15).*

This analysis, repeated over the past three dynamics studies, had been intended to determine whether the proportion of month 1 spells that began in month 1 is similar to the proportion of ongoing spells that began in each of the other panel months. If the Wave 1 topical module information is accurate, then the month 1 proportions should be similar to the proportions in the other panel months, particularly those that correspond to the first month of each wave (e.g., months 5, 9, 13, 17, 21, 25, and 29).

However, we cannot conduct comparisons with Month 1, because, as described above, the 2008 data include no SNAP reference persons with spells that began in the first panel month.[82] Indeed, the RHTM data editing procedures, as described above, do not allow for start dates equal to month 1, and such comparisons conducted in past dynamics studies were based on artificial month 1 spells.

In the 2004 SIPP panel, 5 percent of ongoing SNAP spells appeared to begin in month 1. In actuality, when the procedures described above resulted in negative spell durations, Mabli et al. (2011a) reassigned RHTM start dates to month 1, an otherwise impossible date due to the Census Bureau's editing procedures. Indeed, for the three previous SIPP panels, this negative spell phenomenon led the authors to create artificial month-1 cases, masking the editing procedures that eliminated all month 1 starts.

Our investigation brings a new understanding of the data, however, it also introduces a complication in that 2008 findings are not be completely comparable to those of the prior studies. For example, mean 2008 spell length should be longer than it would have been had this data element not changed; now there will be neither spells with zero length, nor spells of negative

[81] We used these same approaches to assess the 2004 panel RHTM data, and they were also employed by Gleason et al. (1998) and Cody et al. (2005).

[82] To be precise, this sample of month 1 starters does include five babies born in this month to families already receiving SNAP; thus, their birth date becomes their SNAP start date

length, included in the duration analysis. In the two previous analyses, the negative spells were reassigned to zero elapsed length and retained. We do not anticipate that this change will affect median spell length.

Other than the revelation that past studies may have incorrectly identified spells as beginning in month 1, this table also shows that on average, 14 percent of on-going spells begin in each seam month. The variation we see – ranging from a low of 10 percent beginning in month 45 to a high of 19 percent beginning in month 5 – may in part reflect fluctuations in the business cycle.

2. *In-Sample Assessment Method 2: Compare spell durations by start month (Tables A.16 and A.17).*

Table A.16 shows a comparison of the cumulative duration of three types of left-censored and non-left-censored month 1 spells:

- Non-left-censored spells that started after month 1
- Non-left-censored spells that started in month 5
- Month 1 spells that began one to six months prior to the first panel month (i.e., left-censored spells with an elapsed duration of one to six months)

The median spell duration for non-left censored spells starting after month 1 is 11 months, compared with 13 months for non-left censored spells starting in month 5. We are encouraged that these medians are very close to one another given their different universes and that the data follow a pattern similar to that observed in the 2004-based study. These different universe medians in the 2008 study are closer to one another than those of either Cody et al. (2005) or Gleason et al. (1998), indicating sustained improvements in quality over time.

Table A.17 summarizes differences observed across the four key dynamics studies. In the analysis conducted by Gleason et al., with the 1991 panel, the difference between month 1 spells and other spells was substantially greater than found in the 2001 and 2004 studies; the median spell length for month 1 spells with zero elapsed duration was 28 months compared with 8 months for other non-left censored spells. This led Gleason et al. to conclude the data on spells with zero elapsed duration in month 1 were likely biased and not usable. Assessment analyses conducted with the 2001 and 2004 panels saw marked improvement in these data and the month 1 data were included.

Compared to earlier studies, the 2008 data show longer median spell durations for left-censored month-1 spells with elapsed durations of 1 to 6 months – 31 months compared to 19 months in 2004, 14 months in 2001, and 23 months in 1991. This may reflect an overall trend toward longer participation durations during The Great Recession, or it may reflect the longer observation period of the 2008 SIPP.

3. In-Sample Assessment Method 3: Compare spell durations by elapsed pre-panel time (Table A.18).

We compared the cumulative duration *during the panel* of left-censored month 1 spells (spells that that started prior to the panel). Table A.18 shows the comparison of these durations across five subgroups defined by their duration prior to the panel:

- Month 1 spells with an elapsed duration of 1 to 6 months
- Month 1 spells with an elapsed duration of 7 to 12 months
- Month 1 spells with an elapsed duration of 13 to 24 months
- Month 1 spells with an elapsed duration of more than 24 months
- All month 1 spells that began before month 1 (all left-censored spells)

The results show that left-censored spells with longer pre-panel durations have longer durations within the panel. The median spell length during the panel for spells with the shortest elapsed pre-panel durations (1 to 6 months) is 28 months, compared to 41 months for those with pre-panel durations of 7 to 12 months. Those with pre-panel durations of 13 to 24 months and more than 24 months have medians durations not measured with the panel observation period (but therefore in excess of 54 months). This pattern is expected since people with spells that were in progress for a long time prior to the start of the panel are less likely to stop participating. This indicates that our data are falling within patterns similar to those found in previous studies, only with longer observed durations.

4. In-Sample Assessment Method 4: Examine "artificial" cohort of left-censored spells (Table A.19).

We compared a cohort of left-censored spells in month 1 with a cohort of "artificial" left-censored spells. The artificial left-censored spells were created from all active spells in month 12 that started between panel months 2 and 12. We compared the duration (subsequent to month 12) of the artificial cohort spells to the duration (subsequent to month 1) of month 1 spells that were reported to begin 1 to 11 months before the panel. The distributions of spell durations should be similar for the two samples if the start dates in the topical module are accurate.

The duration of artificial left-censored spells is shorter than the duration of month 1 left censored spells. For the artificial cohort, the median spell length is 27 months (compared to 20 months in 2004) months, and for the month 1 left-censored cohort, the median spell length is 35 months (compared to 26 months in 2004). This is a differential of eight months between the two cohorts, similar to the 6-month differential found in 2004 (Mabli et al.) and about halfway between the differentials found by Cody et al. and Gleason et al.

In the 1991 data, Gleason et al. found that the artificial cohort spells were shorter than the Wave 1 cohort spells by nine months, and concluded that individuals in the Wave 1 cohort were under-reporting their pre-panel duration. With the 2001 panel, Cody et al. found the smallest differential, and in the opposite direction: the median spell for the 2001 artificial cohort was 21 months and the median spell for the month 1 cohort was 18 months. Buoyed by the similarity between the two cohorts, Cody et al. concluded that the 2001 data quality was good. The 2004

study found a difference of 6 months between the two medians, and in the same direction as the 1991 study.

The distinct historic and economic contexts of the four panels, and indeed of the two individual cohorts within each panel, have the potential to create significant differentiation in addition to whatever unique qualities the SIPP instruments may have created. With results from four panels available, it appears that the 2008 patterns are within a reasonable range, though show a slight weakening compared to 2004.

5. *In-Sample Assessment Method 5: Compare elapsed duration with subsequent duration (Table A.20).*

Finally, we compare the cumulative elapsed spell duration of month 1 spells that began before month 1 with the cumulative spell duration of these spells during the panel. Assuming that the distribution of SNAP spell durations has not changed over time and that the economic and policy climates were constant, these spells should be, on average, in the middle of their spells in month 1. Thus, the backward and forward spell duration distributions should be similar if this "stationarity" assumption is valid and if the Wave 1 topical module recipiency history information is accurate.

As was the case in the 2004 panel, the 2008 analysis finds that forward spell durations are shorter than backward spell durations. About 26 percent cases exited their forward spells within one year, whereas 23 percent of spells track backwards for one year or less. This 3-point differential rises to 8 percentage points by 36 months, when 44 percent of forward spells had ended versus only 36 percent of spells track backwards for 36 months or less. Backward durations do not reach the median level of spells within our 54-month observation period months, but the forward durations reach the median level at 52 months. This is likely mostly a function of differential recall -- providing information every 4 months for the forward-looking spell segments versus just once for the backward looking segment. Or, it could just be that there are longer spells going backwards, and previous SNAP dynamics studies have found that existing spells (spells defined by the 5th-month cross-sectional sample) have a much longer length than new spells. The spells in progress at month 1 of the reference period that form the basis of this table are analogous to a cross-sectional sample drawn at month 1.

Mabli et al. also found forward spells to be shorter than backward for the 2004 panel, but neither forward nor backward durations reached the median level of spells within the 30-month observation period. Cody et al. observed the median duration of 2001-panel forward spells (24 months) to be shorter than the median of backward spells (more than 30 months). Both these findings are counter to what was observed in the 1991 data by Gleason et al., who found that the forward durations were longer than the backward durations, supporting their conclusion that respondents reported their pre-panel durations to be shorter than they actually were.

Five In-Sample Approaches: Conclusion

These five in-sample approaches to assessing the topical module data demonstrate that the recipiency history data could be materially different from within-panel measures of SNAP participation begin dates. The recall demands for within-panel measures are limited to the immediate past four months, the SIPP reference period, and even within that short time

respondents display considerable seam bias in their responses. For the RHTM, however, the majority of left-censored spells required greater recall on the part of respondents. One effect of the recall demands is evident in the rising level of month-only imputations with rising left-censored spell length—respondents simply cannot remember back that far. Also, when comparing backward with forward spells, we can expect that the backward spells—all left-censored—are not measured as accurately as the forward spells.

Our 2008 data do not include spells with negative or zero elapsed duration as did previous panels. This lack of negative spells, which in the past were reassigned to zero elapsed duration, will improve the quality of the current analysis while making it somewhat incompatible with previous studies.

Two changes in the character of the 2004 SNAP RHTM data also had the potential to bias the results: the lack of bottom-coding and the change in phrasing in favor of SNAP receipt date rather than application date. Overall length of spells increased in 2004 compared with 2001, however both the median and mean spell length increased by about ten percent. Had the lack of bottom-coding had a significant effect, the mean spell length would have increased more than the median. The change in phrasing should have resulted in 2004 and 2008 spells being shorter than 2001 spells, other things being equal. Any change due to phrasing change probably would have been small, limited to the gap between application and receipt among successful SNAP applicants in 2001. If there was such a depressing influence on the change in spell length from 2001 to 2004, it cannot be identified.

Overall, the results of this evaluation place the 2008 RHTM data within a normal range of what can be expected from the 2004 and earlier. The RHTM data appear to be reliable and not in need of adjustment. However, whether the longer observation period of the 2008 panel will result in a shorter median spell length due to a preponderance of short spells (since the median length of new spells in previous studies has been relatively short), or longer spell length from new spells having the opportunity to persist for more months before becoming right-censored (possibly compounded by the Great Recession) is something that we will monitor carefully in the main study.

B. Employment History Topical Module

In the Wave 1 Employment History Topical Module (EHTM), respondents are asked about their employment history. Individuals who are unemployed in the first month of the panel are asked about any previous employment. In the 2001 panel there was some evidence that the information was biased, showing lower rates of historic employment for individuals in month 1 than later in the panel (Cody et al. 2005). As such, this was investigated for the 2004 panel and now again for the 2008 data. Our assessment of the most recent study found no bias apparent in the 2004 panel. As described below, while the data for 2008 show more variation than the 2004 data, we believe that EHTM data are suitable for constructing measures of "usual circumstances."

Table A.21 examines the proportion of individuals unemployed in month 1 (column 1) that were employed within the past 6 and 12 months. It also shows analogous rates for individuals unemployed in months 12, 24, 36, 48, and 56 (columns 2 – 6) that were employed in the past 6 and 12 months.

As the economy grew worse in month 12, 24, and 36 of the SIPP, as evidenced by the increasing unemployment rate (based on the CPS), we see a greater percentage of unemployed individuals that were recently employed. This may reflect greater turnover (greater job loss rates) during tough economic times. We cannot determine employment history for 9 percent of month 1 unemployed individuals. This is substantially higher than the 3 percent for which we could not determine employment history with the 2004 data.

Based on the consistency of the employment history data with a jump from relatively low unemployment to high unemployment, we believe that the employment history topical module data provide a sound basis for creating measures of "usual circumstances." For instance, for a given individual, we can determine whether being unemployed in month 6 was typical or not typical relative to the past year by combining their employment information during the first 5 months with either (a) the start date of their job(s) in month 1 (reported in the core data), if employed, or (2) their employment history from the topical module data). These estimates can be used to assess the relationship between usual circumstances and participation dynamics.

VII. Gaps in SNAP Participation

This section presents the results of our assessment of gaps in SNAP participation in the 2008 SIPP panel. We examine the incidence of gaps of different sizes; the lengths of spells prior to and following the gaps; characteristics associated with having a gap; and other data features related to gaps. The analysis was conducted to help inform the decision of whether to recode one-month gaps, or even two-month gaps, in participation by "closing them up." In the most recent previous reports, we have closed up one-month gaps but not two-month gaps.

A. Incidence of Gaps and Distribution across Reference Months

In the 2008 SIPP panel, 5 million families participating in SNAP had a one- or two-month gap in their participation spell (845 families, unweighted) (Table A.22). This makes up 8 percent of all families participating in SNAP, slightly more than in the 2004 panel (7 percent). The percentage with at least one one-month gap (5 percent) is larger than the percentage with at least one two-month gap (4 percent).[83] No families have three or more one-month gaps or three or more two-month gaps, though some have a mix of one- and two-month gaps.

Each SIPP interview takes place in the month following the end of the wave. The Wave 1 interview takes place in what could be referred to as month 5, for example. The respondent is most likely to report the month 4 information accurately because it was only one month prior to the interview. We find that nearly half of one-month gaps (47 percent) occur in the fourth month of the wave (Table A.23)—the month for which we expect the most accurate reporting. This is a sizable decrease from the 2004 panel (68 percent).

On the other hand, the information reported for the beginning of the next wave is likely to be the least accurate, which could lead to over-reporting of one-month gaps. Continuing with the example above, even if an individual reports SNAP participation in months 1 to 3 of Wave 1, and

[83] Because some families have both a one- and a two-month gap within the panel, these numbers sum to a percentage greater than the 7.9 percent of families with gaps.

no SNAP participation in month 4 of Wave 1, their interview for month 5 (month 1 of Wave 2) does not occur until four months later. If the respondent returned to SNAP in the middle of Wave 2, they may erroneously report participation for all months of Wave 2. (The seam bias analysis clearly shows that people do tend to report in this way.) Therefore, it may be that a gap did, in fact, begin in the fourth reference month, but it may be less likely that the gap truly ended after one month. The gaps in months 1 to 3, however, are likely to have been accurately reported, as they do not occur on a seam month.

Most two-month gaps occur in the middle (months 2 and 3) or the end (months 3 and 4) of the wave (Table A.23). Thirty percent of two-month gaps start in month 2, and 57 percent start in month 3. In the 2004 panel, these percentages were 41 and 44 percent, respectively. If we use the same argument above, that recall bias is present in the data, then the two-month gaps starting in month 2 should be the most accurate, as the start and end date do not occur on a seam month of the wave. The two-month gaps starting in month 3 would suffer from the same recall problem, namely that while the gap start month is accurate, the end month (month 4) might be inaccurate if recall bias affected responses for the next wave.

Taken as a whole, Table A.23 provides fairly reassuring evidence that the start months of one- and two-month gaps are being reported accurately, though it is uncertain whether the end months are accurate as well.

B. Duration of Participation Spells With and Without Closing Gaps

To assess the implication of closing gaps on the average spell length of SNAP participation for participants with gaps, we estimate lengths of SNAP spells prior to and following the gap. We then close the gap and re-estimate the average spell length. We first focus on one-month gaps and then describe whether closing up two-month gaps yields similar conclusions (Table A.24).

The average length of spells preceding the gap, among non-left-censored spells, is 10 months, nearly twice as long as the analogous duration in the 2004 panel (6 months). A non-left-censored spell is one that begins after the respondent's first month in the panel. We focus on non-left-censored spells because they comprise the majority of SNAP spells prior to the gap, with 71 percent of these spells being non-left-censored, and because spell lengths for left-censored spells can only be estimated using SIPP topical module data that are confidential, and that are somewhat different in nature than the monthly, within-panel observations of SNAP participation.

The average length of spells following the gap is 12 months, up from 7 months in the 2004 panel. While all spells following the gap are by definition not left-censored because they begin in the month after the gap, nearly half of them are right-censored, meaning that the respondent exits the SIPP panel while still participating in SNAP. The average length of the non-right-censored spells following the gap is 10 months.

The average spell length, among non-left-censored spells, once the gap is closed is 23 months. We note that all non-left-censored spells prior to the gap remain non-left-censored spells once the gap is closed. Thus, closing one-month gaps more than doubles the average spell length of non-left-censored spells for individuals with one month gaps. This is a sizable difference, but the impact on the average spell length among *all* SNAP participants, including those without gaps, is much smaller because less than 5 percent of participants have one-month gaps.

The average length of non-left-censored spells prior to the gap of about 10 months is interesting because it is not far off from the mean SNAP certification period of 12 months in FY 2010, and is even closer to the mean certification length of 9 months for households with children.[84] This finding supports the idea that one-month gaps truly reflect churning as States have described, with cases being closed due to failure to recertify and participants re-entering shortly after re-applying.

For participants with two-month gaps, the average spell length is 9 months prior to the gap (among non-left-censored spells), almost 15 months following the gap (including both right-censored and non-right-censored spells), and 29 months once both the two-month gaps and the one-month gaps are closed. While the length of the spell prior to the two-month gap is similar to the spell length prior to the one-month gap, the length of spell after the two-month gap is longer than the spell length after the one-month gap. This may suggest that there are different types of participants with two-month gaps than with one-month gaps. However, the length of the spell once the gap is closed is similar in magnitude to the one-month gap case.

C. Characteristics of Participants With and Without Gaps

Tabulating characteristics of SNAP participants with and without participation gaps of one to two months shows that individuals with gaps are more likely to have characteristics associated with shorter recertification periods than other SNAP participants (Table A.25). For example, individuals with gaps disproportionately live in families without elderly members as opposed to families with elderly members. We find that 85 percent of individuals with a one-month gap live in families without elderly members, compared to 81 percent of individuals without gaps. And, the average certification period for households with elderly members (20 months) is higher than the overall average certification period for the SNAP caseload (12 months).[85]

We find this same relationship for most other subgroups; characteristics associated with gaps are also associated with shorter certification periods. This includes families with children, with earned income, without SSI, and without Social Security. However, we find little association between living in a family with TANF or unemployed compensation and experiencing a gap.

The percentage of individuals with an increase in family income at the break in participation is slightly higher among individuals with a two-month gap than a one-month gap (Table A.25). It is also higher among individuals with multiple gaps (of either one- or two-month) than a single one- or two-month gap. Overall, the characteristics associated with having a gap in participation in the 2008 panel are similar to those in the 2004 panel.

D. Timing of Changes in Individuals' Family Characteristics

In Table A.26 we compare how characteristics of participating individuals differ before, during, and after the gap. We determine how often an individual with a one- or two-month gap in participation experiences a change in his or her family characteristics around the time of the gap (before the gap to within the gap, before the gap to after the gap, or within the gap to after the gap). This information is presented in the first column of Table A.26. This compares to the

[84] Eslami, Esa. "Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2010." Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, September 2011.
[85] Eslami, Esa. "Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2010." Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, September 2011.

percentage of individuals that experience such changes within a participation spell (indicating the change may not lead to a break in participation) in the second column or during a longer gap in participation of three or more months in the third column.

We learn from the table that changes in circumstances are common within spells. Eleven percent of individuals in families with no gaps in participation have an increase within the spell in the number of children, and 13 percent have a decrease in the number of children. Similarly, about 16 percent have an increase in the number of family members and 13 percent have a decrease in the number of family members. Fifty-one percent have an increase in earned income and 50 percent have a decrease in earned income.

However, changes are even more prevalent around the gap, for individuals in families with a relatively long gap in participation (three or more months). We generally accept that individuals with these long gaps are truly experiencing a gap in participation. For example, about two-thirds have either an increase or a decrease in earned income, 69 percent have a change in unearned income, and around half have a change in family size.

If the individuals in families with shorter gaps were also exiting and re-entering because of changes in circumstances, we would expect to see a relatively high prevalence of these changes in the first column. In other words, we would expect them to look more like the people with longer gaps than the people with shorter gaps. However, only about 11 percent of these individuals have changes in family size and 35 percent have changes in earned income (relative to two-thirds of those with gaps of 3 months or longer). We must note that the opportunities for such changes are fewer for individuals in families with these shorter gaps relative to individuals in the other two columns—the changes are measured over at most four months (one month before the gap, up to two months of the gap, and one month after the gap) for individuals in the first column. The changes can be captured over longer periods in the other columns. Although the difference in the number of months over which the changes can be captured is so different across columns, the percentages of changes in circumstances for the individuals in families with one- and two-month gaps suggests that a change in circumstances is not the cause of their participation gap.

E. Amount of Income Change Around Participation Gap

The previous table examined the extent of increases or decreases in income and income components. Because many individuals in the panel experience changes in income throughout the panel, however, it is useful to look at the *magnitudes* of changes in selected variables. Table A.27 presents the magnitude of income changes just prior to a one- or two-month gap in participation (from two months before the gap to one month before the gap), at the gap (from the month prior to the gap to the month(s) of the gap), or after the gap (the last month of the gap to the first month of the new spell).

Table A.27 is the first table to indicate that some of the individuals with gaps in participation may actually be gaps related to changes in circumstances. In particular, we see that 29 percent of individuals experience a change in earnings just before the gap, 24 percent at the gap, and 32 percent at the end of the gap. Major changes at any time during these months could trigger SNAP exits and entry, although changes of a few dollars would probably not lead to an exit or entry. In fact, we see that over half of the gaps with changes in earnings were changes of more than $400.

The distribution of magnitudes for changes in other income types is more widely distributed, often with the highest percentages of changes at the smallest and highest amounts.

F. Conclusions Regarding Gaps

To avoid overestimating the entry rate, researchers conducting the previous studies opted to "close up" one-month gaps (not two-month gaps), assuming that the respondent made a mistake in reporting and did not experience an actual break in participation. Anecdotal evidence from State SNAP agencies, however, indicates that "churning," short-term nonparticipation in the program, is somewhat common.

In assessing whether to close one-month gaps in this current analysis, we focused on three possible explanations for short-term gaps:

1. Individuals had a change in circumstances that led them to exit and then another change that led them to re-enter, within a very short time period.
2. Individuals reached the end of their certification period without completing the recertification process, leading them to exit the program; then within a month or two, reapplied and entered back into the program (what we refer to as churning below).
3. The gap is misreported and participation continued across this period.

If we had found solid evidence that the first case was most prevalent, we would suggest not closing the gaps, as the exits and entries would then appear real. Aside from the last table, concerning the magnitudes of the changes, however, we did not find much evidence to support this. Table A.26 showed us that individuals with short-term gaps do not seem to experience a similarly high level of changes in circumstances as seen with those with longer gaps. The same was true in the 2004 panel.

Thus we were left trying to identify if the gaps are due to churning or misreporting. From Table A.23, we find that although the percentage of one-month gaps reported in the last month of the wave decreased from 2004 to 2008 (68 to 47 percent), a disproportionately high number of one-month gaps continue to be reported in the last month of the wave – the month we expect to be most accurately reported, relative to the first three waves. Although reporting bias in the next wave may lead to an underrepresentation of the gap, it appears likely that there was a gap. From Table A.24 we see that the gap often occurs about ten months into a spell, which is not far off from the mean SNAP certification period of 12 months in FY 2010, and is even closer to the mean certification length of 9 months for households with children. Then, in Table A.25, we find that individuals who are more likely to have short gaps in participation are also the ones with the shorter certification periods. In other words, they come up for recertification more often, and have more opportunities to experience a short-term break in participation.

Because the tabulations are consistent with an explanation of churning, and the highest incidence is in a month that we expect to be most accurate, we believe, like in the 2004 panel, that the gaps in the 2008 panel may in fact be due to churning rather than misreporting.

The question that remains, then, is whether to close the gaps or not. On one hand, the gaps appear to be true breaks in participation—individuals exited the program and re-entered very quickly. On

the other hand, the exits and entries were not triggered by changes in circumstances, but instead by an end of the certification period. If we were to close the one-month gaps, our analysis would include longer single spells and examine trigger events only around their entry before the long spell. If we were not to close the one-month gaps, we would have multiple shorter spells and will include triggers for individuals who did not experience a change in circumstances that led to their entry. In other words, closing the gap would result in longer median participation spells, lower entry rates, and an entry trigger analysis based on a more reasonable set of entries. Not closing the gaps would result in shorter median participation spells and have an entry trigger analysis that has been diluted by families that entered without a change in circumstances. Given the percentage of individuals with gaps in Table A.22, however, this dilution is likely to be minimal.

While we believe that either approach is appropriate and defensible methodologically, we chose to close the gaps in the 2008 panel. If States and policymakers generally consider the churners to be longer-term participants, then closing the gaps allows the analysis to focus on entries, durations, and triggers among those who are not simply churning. Closing gaps in the 2008 panel will also maximize the comparability between the 2008 dynamics findings and those from the 2001 and 2004 panels.

VIII. Supplemental Data Sources

There is a long history in Dynamics reports of exploring how SNAP dynamics differ by characteristics of households, such as family composition, and presence of and sources of income. In past Dynamics studies, these subgroups have been created exclusively from data available on the public use SIPP files. To further enrich our understanding of SNAP caseloads, for the first time, this Dynamics study draws from three additional data sources: (1) the ACS summary files, (2) the Food Access Research Atlas, and (3) a proprietary mortgage foreclosure data resource. These data sources enable us to define subgroups by neighborhood contextual factors, geographic access to food, and foreclosure experience. Including subgroups formed from these additional data sources has the potential to add depth to our understanding of how participant contextual characteristics affect such program dynamics as SNAP spell length duration, entry and exit rates, and reentry patterns.

We have merged each new data source to our SIPP-based analysis file and conducted analyses to verify data quality and construct preliminary summary analysis variables. In this section we describe these data and how well they matched and merged to our existing analysis files. We also present a first look at the variables from which we will create the new analysis subgroups. This work is exploratory; as such, we will consult with FNS as to final subgroup construction. We provide a variety of preliminary subgroup cuts here to begin discussions.

1. American Community Survey Neighborhood Contextual Data

To create subgroups that describe the income and program participation levels of individuals' neighborhoods (in this case neighborhood is denoted by a sample member's census tract), we employ the 2008 to 2012 Census Bureau ACS population characteristics summary files

(public use data) tabulated according to the 2010 census tract geographic boundaries.[86] We link the ACS data to our SIPP-based analysis file by census tract.

While the public-use SIPP data contain no geographic identifiers below the State level, we have secured permission to use monthly census tract of residence information for SIPP respondents from within the Census Bureau. The 2010 census tracts assignments for SIPP are available only through Wave 10, so we held respondents' Wave 10 residence constant through Wave 14. The 2008 SIPP panel was created under the 2000 census tract system which is available for all waves, but the ACS data for the analysis period uses 2010 tracts. While we analyze characteristics at the tract level internally at the Census Bureau, we report results only at the national level with summary categories of tracts.

As described in Table A.28, the 2008 to 2012 ACS neighborhood summary data was successfully merged to 99 percent of the person-level records in our analysis file. Unmatched records are mainly due to missing census tract identifiers on the SIPP files, which could occur when a respondent's address cannot be geocoded, or when a respondent replies to SIPP via telephone and does not supply an address. No census tract identifiers for which we have participants on our SIPP panel are missing on the ACS summary file. As such, any potential bias introduced will be small because it is only 1 percent of the sample.

Our primary neighborhood-based variables of interest are low income/poverty status and level of SNAP recipiency of a neighborhood. These two local area characteristics will add depth to our knowledge about a SNAP dynamics. In particular, we examined the percentage of families with income below 100 percent of the federal poverty threshold, the percentage of families with income below 200 percent of the federal poverty threshold, and the percentage of individuals who receive SNAP benefits. Table A.29 provides results of our initial exploration of these data. The estimates look reasonable and the data are complete. As expected, relative to all individuals, SNAP participants live in census tracts in which their "neighbors" (individuals residing within their same census tract) are more likely to receive SNAP and have incomes under the poverty level.

Our first look at these variables uses the characteristics of the census tract in which an individual resides in Month 1. However, subgroup membership status can change from month to month as individuals move between tracts. When we pull the final sample, we will assign subgroup status using SNAP dynamics procedures as employed by Mabli et al. (2011a). As shown in Table A.28, an average of 7 percent of families in the 2008 SIPP moved each wave.

We will consult with FNS as we construct specific subgroup definitions. We provide initial examples in Table A.29 for a first look and to facilitate discussion. Two subgroup variables denoting neighborhood SNAP participation levels are shown:

- Percent living within a neighborhood in which at least 25 percent of residents receive SNAP benefits (the approximate median), and

[86] The ACS is a part of the U.S. Census Bureau's Decennial Census Program and is designed to provide current demographic, social, economic, and housing estimates throughout the decade. Annually, the survey randomly samples around 3.5 million addresses and produces statistics that cover 1-year, 3-year, and 5-year periods for geographic areas. Here, we use the 5-year estimates that are available for census tracts.

- Percent living within a neighborhood in which at least 33 percent of residents receive SNAP benefits.

We will also create a subgroup variable denoting income status of the census tract. Nearly half of SNAP participants' neighbors have incomes below 200% of the poverty thresholds, compared to a third of non-SNAP respondents in our analysis file. One in four individuals who are receiving SNAP when the SIPP panel begins live in a neighborhood in which at least a third of residents are poor, compared to just 7 percent of non-respondents individuals in our sample. Again, to facilitate discussion, we provide examples of subgroup variables for this exploratory analysis. These include:

- Percent living within a tract in which at least 25 percent of residents have incomes under the poverty level
- Percent living within a tract in which at least 33 percent of residents have incomes under the poverty level
- Percent who live in a Low Income Neighborhood. This variable, which is derived in part from the ACS, comes to us from the ERS Food Atlas data, described below. Here, a low-income census tract is one in which: the poverty rate is 20 percent or greater; or the median family income is less than or equal to 80 percent of the State-wide median family income; or the tract is in a metropolitan area and has a median family income less than or equal to 80 percent of the metropolitan area's median family income.

2. ERS 2010 Food Access Research Atlas Data

To create subgroups that describe the degree to which individuals have access to food, we turn to the 2010 Food Access Research Atlas, a food access data file produced by the Economic Research Service, USDA.[87] This dataset defines geographic areas in which households have limited food access, in order to provide a spatial overview of a community's ability to access healthy food. The atlas is created from several integrated data sources: the 2010 Decennial Census, the 2006-10 American Community Survey, and a 2010 list of supermarkets (derived from merging the 2010 Store Tracking and Redemption System (STARS) directory of stores authorized to accept SNAP benefits and the 2010 Trade Dimensions TDLinx directory of stores).

Like the ACS data, the food access data are linked to our SIPP-based analysis file by census tract. As described in Table A.28, the food access census tract-level data were successfully merged to 99 percent of the person-level records in our analysis file, and 98 percent of the SNAP participants in our sample. As such, we anticipate little bias due to missing data particularly since only such a small share did not merge. Again, because we have census tracts assignments for SIPP respondents only through Wave 10, we held respondents' Wave 10 residence constant

[87] We originally proposed to use a food access database developed by Jones and Mabli (2012) that was constructed with 2009 STARS data to examine the retail food environment for emergency food pantry clients. However, as we described in our October 2013 study plan, the ERS data boast four advantages: (1) they contains distance-based measures of access, whereas Jones and Mabli (2012) used only density-based measures consisting of counts of stores within a census tract. (2) Separate measures of food access are available for urban and rural geographies, which allow for sensitivity testing to geographic demarcations. (3) The time period more closely maps to the 2008 SIPP panel period and has more comprehensive store information. (4) ERS data will allow for greater comparability across studies.

through Wave 14. While we analyze characteristics at the tract level, we report only national summaries.

ERS defines low access to healthy food as being far from a supermarket, supercenter, or large grocery store ("supermarket" for short). A census tract is considered to have low access if a significant number or share of individuals in the tract is far from a supermarket. We will characterize households living in census tracts with low access to food, primarily by using the variable "LA1and10," which is a binary indicator of whether a low-income tract has at least 500 people or 33 percent of the population living more than 1 mile (in urban areas) or more than 10 miles (in rural areas) from the nearest supermarket, supercenter, or large grocery store. We will also test the sensitivity to demarcations of 1 and 10 miles in urban and rural areas by using the binary variables "LA1and20" and "LAhalfand10", which base access on 1 and 20 miles and on 0.5 and 10 miles.

Table A.29 presents our initial exploration of these data, based on the census tract in which an individual resides in Month 1. (Again, when we assign subgroups for the final analysis file, we will do so based on precise residence at time of the SNAP event.[88]) These estimates look reasonable and the data are complete. As expected, relative to all individuals, fewer SNAP participants have ready access to healthy food; 37 percent of SNAP participants have such access, compared to 43 percent of all individuals in our sample.

3. Mortgage Foreclosure Data

In addition to the SIPP restricted-use geographic identifiers, the Census Bureau generously granted us access to a unique internal mortgage foreclosure data set. Privately collected mortgage foreclosure actions were collected via *RealtyTrac*. Specifically, *RealtyTrac* mined nationwide foreclosure events from registers of Deeds offices across the country from the period January 2005 through December 2011, and the Census Bureau identified SIPP respondents each month by matching foreclosure event address for each month (O'Donnell 2005-2011).

The Census Bureau linked the mortgage data to our SIPP respondents by addresses. Because these data are developed specifically for SIPP respondents, we achieved a 100 percent match rate of the household-level mortgage data to the person-level analysis sample (Table A.28). The foreclosure data do not cover the whole study period, so we limit analysis of these subgroups to the associated first 10 waves.

The Census Bureau has analyzed three basic pre-foreclosure and foreclosure events, which we present in the bottom panel of Table A.29, along with a summary variable that specifies whether any of these three events occurred (not shown on table):

- Notices of defaults
- Notices of foreclosure sales or auctions, and
- Final notices of bank ownership.

[88] Our October 2013 study plan details procedures for subgroup assignment to examine spell length, as well as entry, exit, and reentry events.

There are circumstances that could contribute to a significant left censorship of the default process, including the gradual build-up of *RealtyTrac* to a truly national service. Those circumstances, plus a lack of confidence in strict temporal accuracy, lead us to treat foreclosure as a simple binary characteristic, whereby individuals have either experienced or not experienced a foreclosure event during the SNAP Dynamics study period. While the percentages affected and the differences between SNAP participants and nonparticipants are small, our initial assessment of the data indicate that SNAP participants were more likely than nonparticipants to experience foreclosure events during the panel period.

There are two caveats to these data. First, there are 16 States that do not require a lender to file a notice of default in the public records: Alabama, Arizona, Colorado, Georgia, Minnesota, Mississippi, Missouri, Montana, New Hampshire, Oregon, Tennessee, Texas, Virginia, Washington, West Virginia, and Wyoming. By comparison, data for these States may be incomplete. While our initial analysis shows events recorded for respondents in these States, it is possible that foreclosure events are underreported and that biases exist by State of residence. When creating our final foreclosure subgroups, we will test whether to exclude these States from the comparison analysis. Second, we find that foreclosure events occurred for property owners and nonowners; we will investigate this interaction and variable definitions further before creating the final subgroup variable.

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Attachment 1

Tables for the

Dynamics of SNAP Participation from 2008 to 2012

Data Assessment Appendix

Table A.1

Sample Loss Rates, by Select Characteristics in 2008 SIPP Panel [a]

	Initial Sample Size	Percentage of Initial Sample Lost	Remaining Sample Size
Total	105,451	51.4%	51,204
Income as Percent of Poverty [b]			
Under 10 Percent	4,437	61.3	1,716
10 to Less than 50 Percent	4,317	56.7	1,871
50 to Less than 100 Percent	9,591	53.1	4,501
100 to Less than 150 Percent	10,641	52.3	5,078
150 to Less than 200 Percent	10,378	51.9	4,994
200 to Less than 300 Percent	18,041	50.7	8,891
300 to Less than 400 Percent	14,185	50.2	7,070
400 to Less than 500 Percent	10,218	49.4	5,168
500 Percent or More	23,461	49.5	11,854
Age (All Individuals)			
Under 19	28,542	55.5	12,702
19 to 39	28,205	58.7	11,638
40 to 64	35,112	47.8	18,332
65+	13,592	37.2	8,532
Total	105,451	51.4	51,204
Age (Individuals with Income Less Than 100 Percent of Poverty)			
Under 19	6,923	58.6	2,863
19 to 39	5,450	62.2	2,062
40 to 64	4,597	50.3	2,285
65+	1,375	36.1	878
Total	18,345	55.9	8,088

Universe: Initial Sample is all Wave 1 respondents in the panel as of August 2008; remaining sample is all respondents still in the sample as of Wave 11 (Dec 2011-Mar 2012, depending on rotation group).

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] These estimates exclude infants born after Wave 1, but before the end of Wave 11 of the panel. A subset of these infants who had mothers, fathers, or guardians with positive 11-wave weights was assigned positive 11-wave panel weights. In all, 2,211 infants were assigned positive 11-wave panel weights, for a total sample size of 53,415 individuals.

[b] Income and age characteristics are taken from the first panel month.

Table A.2

Demographic and Economic Characteristics of Sample Members, using Cross-Sectional and 11-Wave Panel Weights, 2008 SIPP Panel

Characteristic [a]	Cross-Sectional Estimates	11-Wave Panel Estimates	11-Wave Panel as Percentage of Cross-Section
Weighted Sample Size	300,057,076	300,108,407	100.0%
Age			
Under 19	78,499,841	78,853,541	100.5
19 - 39	84,594,974	84,352,496	99.7
40 - 64	99,282,679	99,222,879	99.9
65 +	37,679,582	37,679,491	100.0
Race/Ethnicity			
White Alone Non-Hispanic	197,034,414	196,468,299	99.7
Black Alone Non-Hispanic	35,356,159	35,713,087	101.0
Hispanic	47,309,093	47,438,458	100.3
Asian/Pacific Islander Alone Non-Hispanic	11,206,603	11,588,421	103.4
Other Non-Hispanic	9,150,808	8,900,143	97.3
Employment Status			
No Time on Layoff, No Time Looking for Work			
Employed 35+ Hours All Weeks	107,397,295	108,040,497	100.6
Employed 35+ Hours Some Weeks	1,556,631	1,405,533	90.3
Employed 1-34 Hours per Week	31,104,413	32,313,655	103.9
Some Time Laid Off and/or Looking for Work			
Employed 35+ Hours Some Weeks	1,695,482	1,594,126	94.0
Employed 1-34 Hours Some Weeks	1,264,005	1,296,271	102.6
No Time Working	12,113,015	11,992,608	99.0
Did Not Work, Not Laid Off, Not Looking for Work	82,219,032	81,335,529	98.9
With Job, Did Not Work	1,994,790	1,366,768	68.5
Disability Status			
Had Work-Preventing Physical/Mental/Health Condition	16,416,030	16,881,273	102.8
Had Work-Limiting Physical/Mental/Health Condition	26,119,875	27,042,851	103.5
Participants of Government Assistance Programs			
TANF	3,589,445	3,428,219	95.5
SNAP	29,730,802	29,123,436	98.0
SSI	7,616,171	8,354,371	109.7
Social Security	47,700,654	47,956,048	100.5
Veterans Disability Payments	3,815,045	3,508,376	92.0
WIC	7,366,081	7,390,240	100.3

Table continues

Table A.2, *continued*

Characteristic [a]	Cross-Sectional Estimates	11-Wave Panel Estimates	11-Wave Panel as Percentage of Cross-Section
Individuals In Households of this Size			
1	32,990,331	33,690,055	102.1
2	80,392,996	81,421,491	101.3
3	57,080,360	56,819,408	99.5
4	62,197,776	62,654,508	100.7
5+	67,395,613	65,522,945	97.2
Individuals In Families of this Type			
Two-Parent Families	187,525,743	189,690,150	101.2
Families Headed by Single Female	40,113,543	39,272,244	97.9
Families Headed by Single Male	72,417,791	71,146,014	98.2

Universe: "Cross-Sectional Estimates" provides weighted counts of individuals in the January 2009 cross-sectional sample.
"11-Wave Panel Estimates" provides weighted counts in January 2009 of individuals with 11-wave panel weights.

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] Characteristics are as of January 2009.

Table A.3

Decile Values of Selected Monthly Income Distributions for January 2009, Using Cross-Sectional and 11-Wave Panel Weights, 2008 SIPP Panel

Characteristic [a]	Cross-Sectional Estimates	11-Wave Panel Estimates	11-Wave Panel as Percentage of Cross-Section
Individuals by Total Family Income			
10th Percentile	876	920	105.0%
20th Percentile	1,680	1,721	102.4
30th Percentile	2,431	2,450	100.8
40th Percentile	3,252	3,268	100.5
50th Percentile	4,162	4,170	100.2
60th Percentile	5,228	5,238	100.2
70th Percentile	6,537	6,504	99.5
80th Percentile	8,340	8,230	98.7
90th Percentile	11,247	11,036	98.1
100th Percentile	73,493	73,271	99.7
Individuals by Family Earnings			
10th Percentile	0	0	—
20th Percentile	0	0	—
30th Percentile	1,244	1,280	102.9
40th Percentile	2,165	2,168	100.1
50th Percentile	3,197	3,167	99.1
60th Percentile	4,320	4,300	99.5
70th Percentile	5,700	5,659	99.3
80th Percentile	7,500	7,396	98.6
90th Percentile	10,407	10,202	98.0
100th Percentile	71,300	71,300	100.0
Individuals Age 60 or Older by Family Social Security			
10th Percentile	0	0	—
20th Percentile	0	0	—
30th Percentile	707	701	99.2
40th Percentile	993	993	100.0
50th Percentile	1,196	1,200	100.3
60th Percentile	1,426	1,430	100.3
70th Percentile	1,696	1,696	100.0
80th Percentile	2,002	2,009	100.3
90th Percentile	2,417	2,418	100.0
100th Percentile	5,675	5,675	100.0

Universe: "Cross-Sectional Estimates" provides weighted counts of individuals in the January 2009 cross-sectional sample.
"11-Wave Panel Estimates" provides weighted counts in January 2009 of individuals with 11-wave panel weights

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] Characteristics are as of January 2009.

Table A.4

Comparison of Percentage Distribution of Population Characteristics in the 2008 SIPP Panel and CPS ASEC, 2009-2012

	Jan 2009 SIPP vs. 2009 CPS ASEC			Jan 2010 SIPP vs. 2010 CPS ASEC			Jan 2011 SIPP vs. 2011 CPS ASEC			Jan 2012 SIPP vs. 2012 CPS ASEC		
	SIPP [a]	ASEC [b]	SIPP Minus ASEC	SIPP	ASEC	SIPP Minus ASEC	SIPP	ASEC	SIPP Minus ASEC	SIPP	ASEC	SIPP Minus ASEC
Age												
Under 19	26.0%	26.1%	-0.1%	25.7%	26.1%	-0.4%	25.3%	25.9%	-0.6%	24.6%	25.4%	-0.8%
19 - 39	28.1	28.4	-0.3	27.5	28.3	-0.8	27.1	28.1	-1.0	27.0	27.9	-0.9
40 - 64	33.3	33.0	0.3	33.9	33.0	0.9	34.2	33.2	1.1	34.3	33.3	1.0
65 +	12.6	12.5	0.1	13.0	12.7	0.3	13.4	12.8	0.6	14.1	13.4	0.7
Gender												
Male	49.0	49.1	-0.1	48.8	49.1	-0.4	48.7	49.2	-0.5	48.6	49.0	-0.3
Female	51.0	50.9	0.1	51.2	50.9	0.4	51.3	50.8	0.5	51.4	51.0	0.3
Marital Status												
Married	41.5	41.5	0.0	41.3	40.8	0.5	41.2	40.5	0.7	41.0	40.7	0.3
Divorced	8.1	7.7	0.4	8.2	7.8	0.4	8.2	8.0	0.2	8.3	8.1	0.2
Separated	1.4	1.8	-0.4	1.5	1.8	-0.3	1.4	1.8	-0.4	1.3	1.8	-0.5
Widowed	4.7	4.7	-0.1	4.7	4.7	0.0	4.8	4.7	0.1	4.9	4.6	0.3
Never Married	44.2	44.3	0.0	44.3	44.8	-0.5	44.4	45.1	-0.7	44.5	44.8	-0.3
Race/Ethnicity												
White Non-Hispanic	65.6	65.4	0.2	65.9	64.9	1.0	66.1	64.5	1.6	66.1	63.2	3.0
Black Non-Hispanic	11.8	12.1	-0.3	11.9	12.1	-0.3	11.9	12.1	-0.3	11.8	12.0	-0.2
Hispanic	15.7	15.8	0.0	15.5	16.1	-0.5	15.4	16.3	-1.0	15.3	17.0	-1.6
Asian/Pacific Islander	3.9	4.3	-0.4	3.8	4.5	-0.7	3.7	4.6	-0.8	3.7	5.0	-1.3
American Indian	3.0	2.4	0.6	3.0	2.4	0.6	3.0	2.5	0.5	3.0	2.9	0.1

Table continues

Table A.4, *continued*

	Jan 2009 SIPP vs. 2009 CPS ASEC			Jan 2010 SIPP vs. 2010 CPS ASEC			Jan 2011 SIPP vs. 2011 CPS ASEC			Jan 2012 SIPP vs. 2012 CPS ASEC		
	SIPP [a]	ASEC [b]	SIPP Minus ASEC	SIPP	ASEC	SIPP Minus ASEC	SIPP	ASEC	SIPP Minus ASEC	SIPP	ASEC	SIPP Minus ASEC
Participants of Government Assistance Programs												
TANF												
All Adults and Children	1.9	1.5	0.4	1.8	1.6	0.2	1.6	1.7	-0.1	1.5	1.8	-0.3
SNAP												
All Adults and Children	11.6	9.2	2.4	13.7	11.3	2.4	14.6	12.8	1.9	15.2	13.1	2.1
All Children [c]	6.1	6.9	-0.8	7.6	8.4	-0.8	8.3	9.7	-1.3	8.7	9.7	-1.0
SSI												
All Adults	2.5	1.8	0.7	2.6	1.8	0.8	2.7	1.8	0.9	2.8	2.0	0.8
Social Security												
All Adults	15.5	14.3	1.3	16.2	14.3	1.9	16.7	14.5	2.2	17.3	15.2	2.1
Veterans Disability Payments	1.2	0.9	0.3	1.3	0.9	0.4	1.2	0.9	0.3	1.3	1.0	0.2
WIC	2.4	1.2	1.3	2.5	1.3	1.3	2.2	1.2	1.0	2.0	1.3	0.8
Individuals In Families of this Type												
Two-Parent Families	63.3	62.8	0.5	63.6	61.9	1.7	64.1	61.2	2.8	64.2	60.8	3.4
Families Headed by Single Male	13.1	13.5	-0.4	12.6	14.0	-1.5	12.3	14.2	-1.9	12.2	14.3	-2.0
Families Headed by Single Female	23.6	23.7	-0.1	23.9	24.1	-0.3	23.7	24.6	-0.9	23.6	24.9	-1.3

Universe: SIPP: All individuals in SIPP panel in January of given year, weighted by adjusted (includes infants) 11-panel longitudinal weight

ASEC: All individuals in given year's March CPS ASEC, weighted by March supplement weight

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] SIPP estimates were generated using 11-wave panel weights.

[b] CPS ASEC program participation measures refer to the full calendar year preceding the ASEC year, e.g., the 2009 ASEC reflects the March 2009 population according to their calendar year 2008 participation.

[c] March CPS ASEC estimates of SNAP children were based on HFOODNO * HSUP-WGT.

Table A.5

Distribution of Transition Events by Reference Month, 2008 SIPP Panel [a]

Transition Event	Total	Percentage of Transitions from Prior Month to Indicated Month			
		Month 1	Month 2	Month 3	Month 4
SNAP					
Entry	75,070,655	76.1%	5.9%	8.4%	9.7%
Exit	58,841,814	56.2	19.2	12.9	11.7
Employment Among Individuals 16 and Over					
Entry	141,051,780	46.6	17.1	17.3	19.0
Exit	143,815,204	42.2	17.1	19.6	21.1
More than 5% Change in Income Among Individuals 16 and Older					
Earnings	1,146,379,307	56.1	14.2	13.7	16.0
TANF	11,966,225	69.7	12.8	8.5	9.1
SSI	51,024,193	86.8	5.3	3.6	4.2
Household Composition					
Different Household (Total)	129,844,526	27.9	22.6	24.7	24.8
Different Household (Adult)	98,578,134	27.7	22.8	25.0	24.6
Different Household (Child Under 15)	31,266,392	28.3	21.9	24.0	25.7

Universe: All individuals in first 14 waves of SIPP (includes infants) weighted by 11-wave longitudinal weight
Left-censored spells and spells beginning in Wave 1 are excluded from the entry estimates.
Right-censored spells and spells ending in Wave 14 are excluded from the exit estimates.

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] Changes in income and household composition in Wave 1 are excluded.

Table A.6

Rates of Seam Reporting For Select Subgroups, 2008 SIPP Panel [a]

Transition Event	All Individuals	Adults Receiving SNAP Benefits During Panel	Individuals in Households with Change in Household Respondent	Interview Status (Adults only)		
				Interview (Self)	Proxy	Individual's Month Imputed
SNAP						
Entry	76.1%	76.6%	97.0%	72.9%	79.8%	89.1%
Exit	56.2	56.3	93.3	49.7	62.0	77.7
Employment Among Individuals 16 and Over						
Entry	46.6	44.3	97.0	45.5	47.4	50.7
Exit	42.2	42.9	97.2	39.4	44.9	55.2
More than 5% Change in Income Among Individuals 16 and Older						
Earnings	56.1	54.0	98.1	54.1	58.9	62.6
TANF	69.7	69.4	99.1	66.5	79.7	77.6
SSI	86.8	86.9	99.9	85.1	89.8	96.5
Household Composition						
Different Household (Total)	27.9	28.8	43.3	27.1	28.4	42.8
Different Household (Adult)	27.7	28.8	41.5	27.1	28.2	42.7
Different Household (Child Under 15)	28.3	30.3	51.3	100.0	56.9	100.0

Universe: All individuals in first 14 waves of SIPP (includes infants) weighted by 11-wave longitudinal weight
Left-censored spells and spells beginning in Wave 1 are excluded from the entry estimates.
Right-censored spells and spells ending in Wave 14 are excluded from the exit estimates.

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] Changes in income and household composition in Wave 1 are excluded.

Table A.7

Frequency of Within-Unit Inconsistencies for SNAP and TANF, 2008 SIPP Panel, Unweighted

Reference Month	Units with SNAP	Percentage of SNAP Units with Problems	Units with TANF	Percentage of TANF Units with Problems
1	3,633	2.5%	593	5.2%
2	3,721	2.5	596	4.7
3	3,817	2.5	608	4.6
4	3,910	2.6	618	4.7
5	3,940	6.6	595	4.7
6	3,893	6.4	570	4.7
7	3,923	6.1	573	4.7
8	3,967	5.9	568	4.9
9	4,074	6.8	539	4.6
10	4,010	6.5	516	4.5
11	4,042	6.5	520	4.8
12	4,090	6.4	536	5.4
13	4,117	7.5	512	4.5
14	4,087	7.1	499	4.8
15	4,117	7.0	509	4.7
16	4,151	6.9	501	4.4
17	4,356	7.7	519	4.4
18	4,287	7.3	508	4.5
19	4,300	7.1	509	4.5
20	4,325	6.9	511	4.3
21	4,372	8.1	465	3.2
22	4,328	7.9	454	3.7
23	4,330	7.8	460	3.9
24	4,365	7.5	459	3.7
25	4,326	7.4	454	4.4
26	4,272	7.1	433	4.2
27	4,289	6.9	430	4.0
28	4,298	7.0	433	4.2
29	4,409	7.4	447	5.4
30	4,354	7.2	434	4.6
31	4,357	7.1	433	3.9
32	4,373	7.0	422	4.0
33	4,365	8.1	439	4.3
34	4,311	7.4	426	4.9
35	4,310	7.3	425	4.7
36	4,327	7.1	428	4.7
37	4,348	7.7	420	7.1
38	4,288	7.3	397	6.0
39	4,307	7.1	399	6.3
40	4,303	7.2	403	5.7

Table continues

Table A.7, *continued*

Reference Month	Units with SNAP	Percentage of SNAP Units with Problems	Units with TANF	Percentage of TANF Units with Problems
41	4,307	6.8	380	4.5
42	4,249	6.4	360	4.4
43	4,245	6.3	365	5.2
44	4,238	6.4	361	5.3
45	4,296	7.2	340	5.9
46	4,265	6.5	329	6.4
47	4,249	6.4	329	6.1
48	4,262	6.1	332	6.3
49	4,304	7.3	339	7.4
50	4,243	6.7	341	7.6
51	4,233	6.5	338	7.7
52	4,241	6.5	340	7.6
53	4,287	7.1	341	4.7
54	4,247	6.7	332	4.8
55	4,215	6.6	334	4.5
56	4,211	6.5	337	4.7

Universe: SIPP Waves 1-14, all unweighted households with SNAP or TANF income in given month

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Table A.8

Difference in Program Participation Levels Between Waves 1 and 2 of the 2008 SIPP Panel

Transition Event	Aug. 2008 SIPP (Wave 1)	Aug. 2008 Administrative Data	Aug. 2008 Percentage Difference	Dec. 2008 SIPP (Wave 2)	Dec. 2008 Administrative Data	Dec. 2008 Percentage Difference	Difference in Wave 1 and Wave 2 Differences
SNAP Participants							
Total	24,507,616	28,662,205	-14.5%	29,393,999	31,109,106	-5.5%	-9.0%
Adult	13,604,081	14,781,356	-8.0	16,544,850	16,179,466	2.3	-10.2
Children (under age 18)	10,903,536	13,880,849	-21.4	12,849,149	14,929,640	-13.9	-7.5
TANF Participants							
Total	3,060,026	3,947,195	-22.5	3,579,560	4,145,601	-13.7	-8.8
Mothers	971,214	933,164	4.1	1,161,739	993,664	16.9	-12.8
Children (under age 6)	2,088,812	3,014,031	-30.7	2,417,821	3,151,937	-23.3	-7.4
Employment	133,927,632	158,576,800	-15.5	136,353,395	158,576,800	-14.0	-1.5

Universe: SIPP: All Wave 1 or Wave 2 SNAP or TANF participants, weighted with August (Wave 1) and December (Wave 2) 2008 cross-sectional weights;
Employment row "Administrative Data" column: CPS ASEC estimate is of those who "ever-had" earnings during 2008;
Administrative Data: SNAP participants are all SNAP QC cases eligible and participating weighted to administrative totals; TANF participants is caseload as reported by Office of Family Assistance, Office of the Administration for Children & Families.

Source: Decision Demographics, tabulations of the 2008 SIPP Panel; the FY 2008 and FY 2009 SNAP QC data, limited to August 2008 and December 2008, exclusive of Guam and the Virgin Islands; the March 2009 CPS ASEC data (for employment "administrative" estimates). TANF estimates, exclusive of Guam, Puerto Rico, and the Virgin Islands, from http://www.acf.hhs.gov/programs/ofa/resource/caseload2008

Notes: Employment reflects all individuals with earnings and is compared with estimates from the CPS (CPS employment is shown in administrative data column).

Table A.9

Decomposition of Changes in SNAP Participation Estimates across the Common Months of Waves 1 through 5 in the 2008 SIPP

	Aug. 2008	Dec. 2008	April 2009	Aug. 2009	Dec. 2009
Total Participants in Wave	24,521,852	29,414,280	31,469,558	33,713,006	35,861,976
Net Increase Over Prior Wave		4,892,429	2,055,277	2,243,449	2,148,970
Decomposition of Change					
Participants Present During Common Months of Current and Previous Wave					
SNAP participant during the current wave but not during the previous wave		7,641,082	6,149,500	5,961,654	5,629,629
SNAP participant during the previous wave but not during current wave		3,158,051	3,814,464	4,049,917	3,767,640
Net increase in reporting (A)		**4,483,031**	**2,335,036**	**1,911,737**	**1,861,989**
Participants Present During the Current Wave but not in the SIPP Sample in the Common Month of Previous Wave					
SNAP participant not in sample in prior wave, not new to sample this wave [a]		221,015	1,895,566	2,110,413	2,820,753
SNAP participant new to sample this wave		714,018	440,754	653,700	522,779
Subtotal (B)		**935,033**	**2,336,321**	**2,764,113**	**3,343,532**
Summary of Growth					
Combined Net Growth (A + B)		5,418,064	4,671,357	4,675,849	5,205,521
Residual Growth [b] (C) (Net prior wave increase - Combined net growth)		-525,635	-2,616,079	-2,432,401	-3,056,551
SNAP Reporting Rates					
Percentage of Participants not in Sample in Prior Wave, not New This Wave		24.3%	13.7%	13.6%	13.0%
Percentage of Participants New to Sample This Wave		15.7%	12.5%	16.3%	13.1%

Universe: Cross-sectionally weighted SNAP participants for month indicated
Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] There are 221,015 (weighted) participants in Wave 2 who were not present in the common month of Wave 1. These participants were present in at least one other month of Wave 1 besides the common month.

[b] A positive residual growth would suggest a relatively greater increase in weights among participants than nonparticipants. The observed negative residual growth implies a smaller increase in weights among participants than among nonparticipants.

Table A.10

SNAP Participants by Percentage Distribution of Characteristics in Administrative Data and in the 2008 SIPP Panel

	Monthly Average, 2009			Monthly Average, 2010			Monthly Average, 2011			Monthly Average, 2012		
Characteristic	SNAP QC [a]	SIPP	Difference	SNAP QC [a]	SIPP	Difference	SNAP QC [a]	SIPP	Difference	SNAP QC [a]	SIPP	Difference
Age												
0-4	16.5%	13.8%	-2.7%	15.7%	13.2%	-2.5%	15.3%	12.2%	-3.1%	14.6%	10.9%	-3.7%
5-17	30.8	27.8	-3.0	30.4	27.2	-3.2	29.8	27.2	-2.6	29.8	27.3	-2.6
18-59	44.6	48.9	4.3	45.9	50.2	4.3	46.3	50.5	4.2	46.5	50.7	4.1
60+	8.1	9.5	1.4	8.0	9.5	1.5	8.7	10.1	1.5	9.1	11.2	2.1
Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SNAP Unit Benefit Amount												
$1 - 25	2.6	3.2	0.7	2.5	2.6	0.1	2.9	3.1	0.2	3.2	3.7	0.5
$26-$75	3.9	5.8	1.9	3.2	4.7	1.5	3.2	4.4	1.2	3.9	5.4	1.5
$76-$150	7.1	12.3	5.2	7.1	11.8	4.7	7.7	11.8	4.1	7.6	12.1	4.5
$151-$200	15.7	14.5	-1.2	17.5	16.5	-1.1	18.4	17.1	-1.3	18.5	16.5	-2.0
$201-$300	9.9	17.2	7.3	9.6	15.3	5.7	9.2	14.5	5.3	9.4	14.4	5.0
$301-$400	18.1	17.2	-0.9	17.5	17.6	0.1	17.7	18.1	0.3	17.4	17.8	0.4
$401-$499	11.3	10.5	-0.8	10.1	10.9	0.8	9.1	10.4	1.2	9.3	10.5	1.2
$500+	31.5	19.3	-12.2	32.4	20.6	-11.8	31.6	20.7	-11.0	30.7	19.7	-11.0
SNAP Unit Earnings												
$0	60.4	51.0	-9.4	59.0	48.8	-10.1	58.7	48.2	-10.5	57.5	48.3	-9.1
$1-199	2.6	1.4	-1.2	2.5	1.0	-1.5	2.5	1.1	-1.4	2.6	1.1	-1.5
$200-399	3.2	2.7	-0.5	3.1	2.3	-0.8	3.0	2.1	-0.8	3.0	2.2	-0.7
$400-599	3.5	2.8	-0.7	3.7	3.1	-0.6	3.4	2.9	-0.5	3.7	2.6	-1.1
$600-799	4.5	3.5	-1.0	4.3	2.8	-1.5	4.2	3.2	-1.1	4.2	3.2	-1.0
$800-999	4.5	4.2	-0.3	4.6	3.7	-0.9	4.4	3.3	-1.1	4.2	3.3	-0.9
$1000-1199	4.5	3.9	-0.6	4.4	4.2	-0.2	4.1	4.6	0.5	4.7	3.6	-1.1
$1200-1399	4.5	5.3	0.8	4.7	5.2	0.5	4.4	5.0	0.6	4.4	4.8	0.5
$1400-1599	3.7	3.9	0.3	3.7	4.7	1.1	3.9	5.3	1.4	3.8	4.6	0.7
$1600-1999	4.7	6.2	1.6	4.9	6.5	1.6	5.3	6.1	0.8	5.4	6.9	1.5
$2000-2499	2.6	5.6	3.0	3.4	6.1	2.8	3.6	6.0	2.5	3.9	6.5	2.6
$2500+	1.4	9.5	8.1	2.0	11.6	9.6	2.4	12.1	9.7	2.6	12.8	10.2

Table continues

Table A.10, *continued*

Characteristic	Monthly Average, 2009			Monthly Average, 2010			Monthly Average, 2011			Monthly Average, 2012		
	SNAP QC [a]	SIPP	Difference	SNAP QC [a]	SIPP	Difference	SNAP QC [a]	SIPP	Difference	SNAP QC [a]	SIPP	Difference
SNAP Unit TANF Benefits												
$0	86.9	87.7	0.8	88.8	90.1	1.3	89.0	90.8	1.8	89.8	91.9	2.1
$1-200	2.1	2.8	0.7	1.7	2.5	0.7	1.7	2.6	0.9	1.7	2.4	0.7
$201-$400	4.5	4.6	0.1	3.7	3.5	-0.2	3.6	2.9	-0.7	3.5	2.6	-0.9
$401+	6.5	4.9	-1.7	5.7	3.9	-1.8	5.6	3.7	-1.9	5.0	3.1	-1.9
Covered by TANF [b]												
Total	13.1	12.3	-0.8	11.2	9.9	-1.3	11.0	9.2	-1.8	10.2	8.1	-2.1
Adult	4.6	5.4	0.8	4.0	4.6	0.6	3.8	4.3	0.5	3.6	4.0	0.4
Child	8.5	6.8	-1.6	7.2	5.3	-1.9	7.2	4.9	-2.3	6.6	4.1	-2.5
Covered by SSI [c]												
Total	11.4	13.2	1.8	10.9	13.1	2.2	12.2	13.0	0.9	12.5	13.4	0.9
Adult	9.9	11.3	1.4	9.3	11.3	2.0	10.0	11.2	1.2	10.2	11.6	1.3
Child	1.4	1.9	0.5	1.7	1.9	0.2	2.1	1.8	-0.4	2.3	1.8	-0.5

Universe: All individuals in the 2008 SIPP Panel during months of specified year, weighted by adjusted (includes infants) 11-panel longitudinal weight

Source: Decision Demographics tabulations of the 2008 SIPP panel; tabulations from Fiscal Year (FY) 2009-2012 SNAP QC data files, exclusive of Guam and the Virgin Islands; from http://www.acf.hhs.gov/programs/ofa/data-reports/caseload/caseload_current.htm

Notes: [a] Using the FY 2009-2012 SNAP QC data files, we constructed calendar year (CY) files that are representative of average months in CY 2009, CY 2010, CY 2011, and January-September, 2012. The 2012 data are cut off at September because the FY 2013 data (covering October 2012 through September 2013) are not yet available.

[b] TANF assigned to all individuals in the SNAP unit.

[c] Individuals with missing age in the SNAP QC data file are categorized as adults in this panel.

Table A.11

SIPP 2008 Panel Timing

Interview No.	Wave No.	Interview Date	Rotation Group	Earliest Reference Month of Wave	Common Month of Wave	Notes	Interview Refers to (previous 4 months): 1 Month ago	2 Months ago	3 Months ago	4 Months ago
1	1	Sep 08	1	May 08	Aug 08	1st at-risk/new entrant month: July 2008	**Aug 08**	Jul 08	Jun 08	May 08
2	1	Oct 08	2	Jun 08			Sep 08	**Aug 08**	Jul 08	Jun 08
3	1	Nov 08	3	Jul 08			Oct 08	Sep 08	**Aug 08**	Jul 08
4	1	Dec 08	4	Aug 08			Nov 08	Oct 08	Sep 08	**Aug 08**
5	2	Jan 09	1	Sep 08	Dec 08	Cross-sectional sample: December 2008	**Dec 08**	Nov 08	Oct 08	Sep 08
6	2	Feb 09	2	Oct 08			Jan 09	**Dec 08**	Nov 08	Oct 08
7	2	Mar 09	3	Nov 08			Feb 09	Jan 09	**Dec 08**	Nov 08
8	2	Apr 09	4	Dec 08			Mar 09	Feb 09	Jan 09	**Dec 08**
9	3	May 09	1	Jan 09	Apr 09		**Apr 09**	Mar 09	Feb 09	Jan 09
10	3	Jun 09	2	Feb 09			May 09	**Apr 09**	Mar 09	Feb 09
11	3	Jul 09	3	Mar 09			Jun 09	May 09	**Apr 09**	Mar 09
12	3	Aug 09	4	Apr 09			Jul 09	Jun 09	May 09	**Apr 09**
13	4	Sep 09	1	May 09	Aug 09		**Aug 09**	Jul 09	Jun 09	May 09
14	4	Oct 09	2	Jun 09			Sep 09	**Aug 09**	Jul 09	Jun 09
15	4	Nov 09	3	Jul 09			Oct 09	Sep 09	**Aug 09**	Jul 09
16	4	Dec 09	4	Aug 09			Nov 09	Oct 09	Sep 09	**Aug 09**
17	5	Jan 10	1	Sep 09	Dec 09		**Dec 09**	Nov 09	Oct 09	Sep 09
18	5	Feb 10	2	Oct 09			Jan 10	**Dec 09**	Nov 09	Oct 09
19	5	Mar 10	3	Nov 09			Feb 10	Jan 10	**Dec 09**	Nov 09
20	5	Apr 10	4	Dec 09			Mar 10	Feb 10	Jan 10	**Dec 09**
21	6	May 10	1	Jan 10	Apr 10		**Apr 10**	Mar 10	Feb 10	Jan 10
22	6	Jun 10	2	Feb 10			May 10	**Apr 10**	Mar 10	Feb 10
23	6	Jul 10	3	Mar 10			Jun 10	May 10	**Apr 10**	Mar 10
24	6	Aug 10	4	Apr 10			Jul 10	Jun 10	May 10	**Apr 10**

Table continues

Table A.11, *continued*

Interview No.	Wave No.	Interview Date	Rotation Group	Earliest Reference Month of Wave	Common Month of Wave	Notes	Interview Refers to (previous 4 months): 1 Month ago	2 Months ago	3 Months ago	4 Months ago
25	7	Sep 10	1	May 10	Aug 10		**Aug 10**	Jul 10	Jun 10	May 10
26	7	Oct 10	2	Jun 10			Sep 10	**Aug 10**	Jul 10	Jun 10
27	7	Nov 10	3	Jul 10			Oct 10	Sep 10	**Aug 10**	Jul 10
28	7	Dec 10	4	Aug 10			Nov 10	Oct 10	Sep 10	**Aug 10**
29	8	Jan 11	1	Sep 10	Dec 10		**Dec 10**	Nov 10	Oct 10	Sep 10
30	8	Feb 11	2	Oct 10			Jan 11	**Dec 10**	Nov 10	Oct 10
31	8	Mar 11	3	Nov 10			Feb 11	Jan 11	**Dec 10**	Nov 10
32	8	Apr 11	4	Dec 10			Mar 11	Feb 11	Jan 11	**Dec 10**
33	9	May 11	1	Jan 11	Apr 11		**Apr 11**	Mar 11	Feb 11	Jan 11
34	9	Jun 11	2	Feb 11			May 11	**Apr 11**	Mar 11	Feb 11
35	9	Jul 11	3	Mar 11			Jun 11	May 11	**Apr 11**	Mar 11
36	9	Aug 11	4	Apr 11			Jul 11	Jun 11	May 11	**Apr 11**
37	10	Sep 11	1	May 11	Aug 11		**Aug 11**	Jul 11	Jun 11	May 11
38	10	Oct 11	2	Jun 11			Sep 11	**Aug 11**	Jul 11	Jun 11
39	10	Nov 11	3	Jul 11			Oct 11	Sep 11	**Aug 11**	Jul 11
40	10	Dec 11	4	Aug 11			Nov 11	Oct 11	Sep 11	**Aug 11**
41	11	Jan 12	1	Sep 11	Dec 11	Wave 1-11 Longitudinal Weight Used in Data Assessment Memo	**Dec 11**	Nov 11	Oct 11	Sep 11
42	11	Feb 12	2	Oct 11			Jan 12	**Dec 11**	Nov 11	Oct 11
43	11	Mar 12	3	Nov 11			Feb 12	Jan 12	**Dec 11**	Nov 11
44	11	Apr 12	4	Dec 11			Mar 12	Feb 12	Jan 12	**Dec 11**
45	12	May 12	1	Jan 12	Apr 12		**Apr 12**	Mar 12	Feb 12	Jan 12
46	12	Jun 12	2	Feb 12			May 12	**Apr 12**	Mar 12	Feb 12
47	12	Jul 12	3	Mar 12			Jun 12	May 12	**Apr 12**	Mar 12
48	12	Aug 12	4	Apr 12			Jul 12	Jun 12	May 12	**Apr 12**

Table continues

Table A.11, *continued*

Interview No.	Wave No.	Interview Date	Rotation Group	Earliest Reference Month of Wave	Common Month of Wave	Notes	Interview Refers to (previous 4 months): 1 Month ago	2 Months ago	3 Months ago	4 Months ago
49	13	Sep 12	1	May 12	Aug 12		**Aug 12**	Jul 12	Jun 12	May 12
50	13	Oct 12	2	Jun 12			Sep 12	**Aug 12**	Jul 12	Jun 12
51	13	Nov 12	3	Jul 12			Oct 12	Sep 12	**Aug 12**	Jul 12
52	13	Dec 12	4	Aug 12			Nov 12	Oct 12	Sep 12	**Aug 12**
53	14	Jan 13	1	Sep 12	Dec 12	Longitudinal Weight: through Wave 14	**Dec 12**	Nov 12	Oct 12	Sep 12
54	14	Feb 13	2	Oct 12			Jan 13	**Dec 12**	Nov 12	Oct 12
55	14	Mar 13	3	Nov 12			Feb 13	Jan 13	**Dec 12**	Nov 12
56	14	Apr 13	4	Dec 12			Mar 13	Feb 13	Jan 13	**Dec 12**
57	15	May 13	1	Jan 13	Apr 13	Wave 15 not included in this study	**Apr 13**	Mar 13	Feb 13	Jan 13
58	15	Jun 13	2	Feb 13			May 13	**Apr 13**	Mar 13	Feb 13
59	15	Jul 13	3	Mar 13			Jun 13	May 13	**Apr 13**	Mar 13
60	15	Aug 13	4	Apr 13			Jul 13	Jun 13	May 13	**Apr 13**
61	16	Sep 13	1	May 13	Aug 13	Wave 16 not included in this study	**Aug 13**	Jul 13	Jun 13	May 13
62	16	Oct 13	2	Jun 13			Sep 13	**Aug 13**	Jul 13	Jun 13
63	16	Nov 13	3	Jul 13			Oct 13	Sep 13	**Aug 13**	Jul 13
64	16	Dec 13	4	Aug 13			Nov 13	Oct 13	Sep 13	**Aug 13**

Source: Table based on information available at http://www.census.gov/sipp/

Table A.12

Extent of Missing and Imputed Start Dates of Month 1 Spells by SNAP Reference Person Status, 2008 SIPP Panel

	Number						Percentage					
	All Individuals		SNAP Reference Persons		Other Members of the SNAP Unit		All Individuals		SNAP Reference Persons		Other Members of the SNAP Unit	
	Weighted	Sample Size	Weighted	Sample Size	Weighted	Sample Size	Weighted	Sample Size	Weighted	Sample Size	Weighted	Sample Size
SNAP Participants in Month 1	23,204,655	4,076	9,884,869	1,793	13,319,785	2,283	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Begin Date Provided	22,564,143	3,971	9,884,869	1,793	12,679,274	2,178	97.2	97.4	100.0	100.0	95.2	95.4
Missing Begin Date	640,512	105	0	0	640,512	105	2.8	2.6	0.0	0.0	4.8	4.6
SNAP Participants in Month 1 with Begin Date Provided	22,564,143	3,971	9,884,869	1,793	12,679,274	2,178	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Begin Date Provided	14,873,465	2,557	6,488,045	1,149	8,385,420	1,408	65.9	64.4	65.6	64.1	66.1	64.6
Imputed Begin Date	7,690,678	1,414	3,396,825	644	4,293,853	770	34.1	35.6	34.4	35.9	33.9	35.4
SNAP Participants in Month 1 with Imputed Begin Date	7,690,678	1,414	3,396,825	644	4,293,853	770	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Only Month is Imputed	3,928,374	723	2,472,772	464	1,455,602	259	51.1	51.1	72.8	72.0	33.9	33.6
Both Month and Year Imputed	3,762,304	691	924,053	180	2,838,251	511	48.9	48.9	27.2	28.0	66.1	66.4
Full Imputation Required (Percentage)	16.2%	17.0%	9.3%	10.0%	21.3%	22.4%						

Universe: Month 1 SNAP participants weighted by 11-wave panel weights
Source: Decision Demographics tabulations of Wave 1 of the 2008 SIPP Panel

Table A.13

Elapsed Length of Month 1 Spells and Imputation Status, 2008 SIPP Panel

	SNAP Reference Persons		
	Weighted Estimate	Sample Size	Weighted Percentage
All Individuals			
Number of Elapsed Years Spell was in Progress (up to Month 1)	9,884,869	1,793	100.0%
Less than Zero (began after Month 1) [a]	0	0	0.0
Zero (began in month 1) [a]	0	0	0.0
Less than 1 Year	3,248,289	538	32.9
1 Year	1,154,646	189	11.7
2 Years	1,089,286	197	11.0
3 Years	643,955	117	6.5
4 Years	566,226	102	5.7
5 Years	393,141	75	4.0
More than 5 Years	2,789,326	575	28.2
Imputed Begin Date			
Number of Elapsed Years Spell was in Progress (up to Month 1)	3,396,825	644	100.0%
Less than Zero (began after Month 1) [a]	0	0	0.0
Zero (began in month 1) [a]	0	0	0.0
Less than 1 Year	1,103,799	189	32.5
1 Year	291,853	52	8.6
2 Years	311,131	56	9.2
3 Years	246,997	44	7.3
4 Years	157,776	32	4.6
5 Years	127,640	29	3.8
More than 5 Years	1,157,628	242	34.1
Nonimputed Begin Date			
Number of Elapsed Years Spell was in Progress (up to Month 1)	6,488,045	1,149	100.0%
Less than Zero (began after Month 1) [a]	0	0	0.0
Zero (began in month 1) [a]	0	0	0.0
Less than 1 Year	2,144,490	349	33.1
1 Year	862,793	137	13.3
2 Years	778,155	141	12.0
3 Years	396,958	73	6.1
4 Years	408,451	70	6.3
5 Years	265,501	46	4.1
More than 5 Years	1,631,698	333	25.1

Table continues

Table A.13, *continued*

	SNAP Reference Persons		
	Weighted Estimate	Sample Size	Weighted Percentage
Only Imputed Begin Month			
Number of Elapsed Years Spell was in Progress (up to Month 1)	2,472,772	464	100.0%
Less than Zero (began after Month 1) [a]	0	0	0.0
Zero (began in month 1) [a]	0	0	0.0
Less than 1 Year	944,194	161	38.2
1 Year	199,116	34	8.1
2 Years	214,974	41	8.7
3 Years	167,066	31	6.8
4 Years	112,488	21	4.5
5 Years	110,111	24	4.5
More than 5 Years	724,823	152	29.3

Universe: Month 1 SNAP Reference Persons weighted by 11-wave panel weights
Source: Decision Demographics tabulations of Wave 1 of the 2008 SIPP Panel
Notes: [a] These rows are retained in this table, despite the zero values, because negative and zero-length spells have been a consistent problem in past SNAP dynamics studies, and this resolution marks an important improvement of these data.

Table A.14

Elapsed Length of Month 1 Spells Beginning before Month 1, 2008 SIPP Panel

	All Individuals		SNAP Reference Persons	
	Percentage	Cumulative Percentage	Percentage	Cumulative Percentage
Number of Elapsed Years				
0.5 or less	27.2%	27.2%	24.8%	24.8%
> 0.5 - 1.0	10.8	38.1	9.2	34.0
> 1.0 - 1.5	8.7	46.8	7.5	41.5
> 1.5 - 2.0	4.8	51.6	4.0	45.6
> 2.0 - 3.0	10.0	61.6	10.5	56.1
> 3.0 - 4.0	6.5	68.1	6.4	62.5
> 4.0 - 5.0	5.9	74.0	5.8	68.2
> 5.0 to 6.0	3.7	77.7	4.0	72.2
> 6.0 to 10	10.4	88.0	10.8	83.1
More than 10	12.0	100.0	16.9	100.0
Median	1.9		2.3	
Mean	4.1		5.2	

Universe: Month 1 SNAP participants weighted by 11-wave panel weights
Source: Decision Demographics tabulations of Wave 1 of the 2008 SIPP Panel

Table A.15

SNAP Spells Beginning in that Panel Month as a Percentage of On-Going Spells, 2008 SIPP Panel

Panel Month	On-Going SNAP Spells	SNAP Spells that Began in this Month [a]	
Month 1	22,564,143	30,588	0.1%
Month 2	23,786,455	866,412	3.6
Month 3	24,380,152	926,243	3.8
Month 4	25,133,785	1,156,090	4.6
Month 5	28,373,672	5,477,119	19.3
Month 6	28,077,328	393,019	1.4
Month 7	28,359,458	872,938	3.1
Month 8	28,693,892	926,596	3.2
Month 9	31,483,388	5,100,027	16.2
Month 10	31,024,838	657,246	2.1
Month 11	30,667,493	404,377	1.3
Month 12	30,891,859	745,703	2.4
Month 13	32,774,834	4,952,595	15.1
Month 17	34,261,186	4,632,654	13.5
Month 21	35,660,246	4,602,501	12.9
Month 25	35,772,894	4,346,850	12.2
Month 29	36,006,116	4,253,527	11.8
Month 33	36,440,902	4,001,376	11.0
Month 37	36,824,738	4,194,498	11.4
Month 41	37,084,908	4,194,245	11.3
Month 45	34,471,428	3,427,147	9.9
Month 49	32,380,642	3,580,435	11.1
Month 53	31,843,422	3,590,827	11.3
Average: Months 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, & 53	34,106,029	4,766,468	14.4

Universe: All SNAP participants in given month weighted by 11-wave panel weights
Source: Decision Demographics tabulations of the 2008 SIPP Panel
Notes: [a] Month 1 includes only infants born in Month 1 to families already receiving SNAP.

Table A.16

Cumulative Exit Rate for Three Samples of Spells, by Duration, 2008 SIPP Panel [a]

Duration of Spell (Months)	Non-Left-Censored Spells: Non-Left Censored Spells Starting After Month 1	Non-Left-Censored Spells: Non-Left Censored Spells Starting in Month 5	Left-Censored Spell: Month 1 Spells with Elapsed Durations of 1 to 6 Months
1	4.5	4.4	0.0
2	9.3	8.4	1.5
3	12.7	11.4	3.3
4	29.4	24.7	4.7
5	33.5	30.3	10.1
6	36.9	32.1	14.5
7	38.5	33.0	17.0
8	45.2	38.3	18.3
9	47.3	40.9	21.2
10	49.2	42.6	24.7
11	**51.2**	44.4	26.4
12	55.2	48.1	30.6
13	56.6	**50.2**	32.3
14	57.5	50.3	34.2
15	58.4	50.9	35.4
16	61.1	53.0	36.6
17	62.1	55.2	38.2
18	62.9	55.5	39.2
19	63.7	55.6	39.8
20	66.0	60.7	40.6
21	66.7	60.8	41.7
22	67.2	61.0	42.9
23	67.6	61.0	43.2
24	69.7	63.9	44.0
25	70.0	64.0	44.9
26	70.4	64.2	46.3
27	70.8	64.7	47.3
28	71.9	66.0	48.0
29	72.9	66.0	49.7
30	73.4	67.0	49.9
31	73.5	67.0	**50.9**
32	74.6	68.0	52.3
33	74.9	68.1	53.5
34	75.0	68.1	53.7
35	75.3	68.5	54.1
36	76.3	70.6	54.3
37	76.8	70.8	55.0
38	76.9	70.8	55.5
39	77.0	70.9	55.7
40	77.6	71.7	55.8

Table continues

Table A.16, *continued*

Duration of Spell (Months)	Non-Left-Censored Spells: Non-Left Censored Spells Starting After Month 1	Non-Left-Censored Spells: Non-Left Censored Spells Starting in Month 5	Left-Censored Spell: Month 1 Spells with Elapsed Durations of 1 to 6 Months
41	77.9	71.8	56.3
42	78.3	72.4	57.5
43	78.7	72.6	57.6
44	79.3	73.8	57.8
45	79.9	74.8	58.2
46	79.9	74.8	58.4
47	80.2	75.4	58.9
48	80.9	76.2	59.0
49	81.0	76.5	59.6
50	81.6	77.5	59.9
51	81.6	77.5	60.3
52	81.6		61.2
53	81.6		62.7
54	81.6		62.7
Sample Size	12,441	895	1,045

Universe: SNAP participants weighted by 11-wave panel weights
Source: Decision Demographics tabulations of the 2008 SIPP Panel
Notes: [a] Median duration in bold.

Table A.17

Median Spell Durations for Five Samples of Non-Left Censored Spells: 2008, 2004, 2001, & 1991 SIPP Panels

	Month 1 Spells with Zero Elapsed Duration	Non-Left Censored Spells Starting After Month 1	Non-Left Censored Spells Starting in Month 5	Month 1 Spells with Negative Elapsed Durations	Month 1 Spells with Elapsed Durations of 1 to 6 Months
2008 SIPP Data [a]	NA	11	13	NA	31
2004 SIPP Data (Mabli et al.)	10	8	10	10	19
2001 SIPP Data (Cody et al.)	12	8	8	19	14
1991 SIPP Data (Gleason et al.)	28	8	8	16	23

Universe: SNAP participants weighted by panel weights; 2008 SIPP weighted by 11-wave panel weight
Source: Decision Demographics tabulations of the 2008 SIPP Panel; Mabli et al.; Cody, et al.; Gleason, et al.
Notes: [a] Sample for 2008 does not include any SNAP reference persons with Month 1 spells with zero duration.

Table A.18

Cumulative Exit Rates for Month 1 Left-Censored Spells, by Panel Month and Elapsed Duration, 2008 SIPP Panel [a]

Duration of Spell (Months)	Month 1 Spells with Elapsed Durations of 1 to 6 Months	Month 1 Spells with Elapsed Durations of 7 to 12 Months	Month 1 Spells with Elapsed Durations of 13 to 24 Months	Month 1 Spells with Elapsed Durations of More than 24 Months	All Left-Censored Spells
1	2.0	2.9	1.1	0.4	1.2
2	4.3	4.4	1.1	0.8	2.2
3	6.4	4.4	2.5	2.0	3.5
4	15.0	14.5	6.9	8.8	10.8
5	19.3	18.0	9.7	10.7	13.7
6	20.8	18.1	11.5	11.8	14.9
7	22.2	19.4	12.3	12.5	15.8
8	27.1	24.6	15.8	16.6	20.2
9	30.2	26.1	16.0	18.0	21.9
10	32.1	27.2	16.0	18.2	22.6
11	33.4	27.2	16.6	18.5	23.2
12	35.0	29.4	19.2	22.7	26.3
13	36.5	30.0	20.4	23.7	27.4
14	37.2	30.0	20.4	24.1	27.8
15	38.1	30.3	21.4	24.6	28.5
16	40.0	31.9	23.2	26.2	30.1
17	40.4	33.0	24.8	26.7	30.8
18	40.7	33.4	25.2	27.1	31.2
19	41.5	33.6	25.2	27.5	31.6
20	43.1	35.1	26.7	28.8	33.1
21	43.6	36.4	27.4	29.0	33.5
22	44.8	36.4	28.9	29.1	34.1
23	45.3	36.4	29.1	29.1	34.3
24	46.5	40.3	32.1	31.0	36.4
25	47.2	42.0	32.4	31.1	36.8
26	48.3	42.8	32.6	31.5	37.4
27	48.7	43.0	33.1	31.5	37.6
28	**51.6**	44.9	33.5	33.1	39.4
29	51.8	46.2	33.5	34.0	40.1
30	52.6	46.9	33.7	34.7	40.7
31	53.3	46.9	35.4	34.8	41.2
32	53.8	47.9	36.8	35.6	42.3
33	53.4	47.9	37.0	35.4	42.6
34	53.9	48.6	37.0	35.6	42.7
35	53.4	48.6	37.2	35.7	42.9
36	55.2	48.6	38.3	37.4	44.2
37	53.4	48.6	39.2	36.4	44.7
38	55.2	48.6	39.7	37.5	44.8
39	53.5	48.6	40.1	36.6	45.0
40	56.2	49.7	41.2	39.1	46.3

Table continues

Table A.18, *continued*

Duration of Spell (Months)	Month 1 Spells with Elapsed Durations of 1 to 6 Months	Month 1 Spells with Elapsed Durations of 7 to 12 Months	Month 1 Spells with Elapsed Durations of 13 to 24 Months	Month 1 Spells with Elapsed Durations of More than 24 Months	All Left-Censored Spells
41	54.5	**51.6**	41.9	36.8	46.9
42	56.2	51.6	41.9	39.5	47.1
43	54.7	51.6	41.9	37.1	47.3
44	56.6	52.4	43.3	40.5	48.1
45	55.1	52.4	44.5	37.3	48.5
46	56.6	52.4	44.8	40.8	48.7
47	55.2	52.4	44.8	37.7	48.9
48	58.5	53.9	47.2	42.5	**50.7**
49	55.7	54.1	47.4	38.2	51.0
50	58.9	54.4	47.4	42.8	51.2
51	55.9	54.4	48.0	38.7	51.6
52	60.8	55.2	48.6	44.1	52.9
53	56.1	55.2	48.6	38.8	52.9
54	60.8	55.2	48.6	44.2	53.0
Sample Size	1,045	388	503	2,030	3,966

Universe: Left-censored month 1 SNAP participants weighted by 11-wave panel weights
Source: Decision Demographics tabulations of the 2008 SIPP Panel
Notes: [a] Median duration in bold.

Table A.19

Cumulative Exit Rates for Artificial and Month 1 Left-Censored Spells, 2008 SIPP Panel [a]

Duration of Spell (Months)	Artificial Left-Censored Spells	Month 1 Left-Censored Spells with Elapsed Durations of 1 to 11 months	Difference
1	0.0	0.0	0.0
2	0.3	1.1	0.8
3	0.6	2.5	1.8
4	1.4	3.5	2.1
5	5.4	7.5	2.1
6	8.6	10.8	2.1
7	9.7	12.6	2.9
8	13.7	13.6	-0.1
9	16.6	16.2	-0.3
10	18.4	19.5	1.1
11	21.3	21.5	0.2
12	26.7	25.9	-0.8
13	28.7	27.2	-1.5
14	30.0	28.9	-1.2
15	31.2	30.2	-1.1
16	33.7	31.5	-2.2
17	35.5	33.7	-1.8
18	36.6	35.0	-1.6
19	37.2	35.5	-1.7
20	41.8	36.1	-5.7
21	43.3	36.9	-6.4
22	44.2	37.9	-6.3
23	45.0	38.5	-6.5
24	48.3	39.2	-9.1
25	48.7	40.3	-8.4
26	49.7	41.6	-8.1
27	**50.9**	42.4	-8.5
28	52.2	43.2	-8.9
29	52.8	44.7	-8.1
30	54.3	44.9	-9.4
31	54.5	46.3	-8.3
32	55.8	47.9	-7.8
33	56.4	49.0	-7.3
34	56.6	49.4	-7.2
35	57.4	**50.0**	-7.3
36	59.2	50.4	-8.8
37	59.8	51.7	-8.1
38	59.9	52.1	-7.8
39	60.1	52.6	-7.6
40	61.0	52.7	-8.3

Table continues

Table A.19, *continued*

Duration of Spell (Months)	Artificial Left-Censored Spells	Month 1 Left-Censored Spells with Elapsed Durations of 1 to 11 months	Difference
41	61.5	53.2	-8.2
42	62.3	54.4	-7.9
43	62.8	54.5	-8.4
44	64.0	54.6	-9.3
45	65.0	54.9	-10.1
46	65.1	55.1	-10.0
47	65.6	55.4	-10.2
48	66.7	55.7	-11.0
49	67.0	56.4	-10.6
50	68.0	56.7	-11.3
51	68.0	57.2	-10.8
52	68.0	57.9	-10.1
53	68.0	59.0	-9.0
54	68.0	59.2	-8.8
Sample Size	1,778	1,377	

Universe: Artificial Left-Censored Spells: Month 12 SNAP participants with spells that started between months 2 and 12 weighted by 11-wave panel weights
Month 1 Left-Censored Spells: Month 1 SNAP participants with a spell that began 1 to 11 months prior to the panel weighted by 11-wave panel weights
Source: Decision Demographics tabulations of the 2008 SIPP Panel
Notes: [a] Median duration in bold.

Table A.20

Forward and Backward Spell Duration Distributions of Month 1 Left-Censored Spells, 2008 SIPP Panel [a]

Duration of Spell (Months)	Backward Elapsed Duration (Cumulative Distribution)	Forward (Within Panel) Cumulative Exit Rates	Difference
1	1.2	1.2	0.0
2	1.9	2.2	0.3
3	3.1	3.5	0.4
4	10.0	10.8	0.9
5	12.1	13.7	1.5
6	13.0	14.9	1.8
7	13.8	15.8	2.0
8	17.6	20.2	2.7
9	18.4	21.9	3.5
10	18.8	22.6	3.8
11	19.1	23.2	4.1
12	22.7	26.3	3.6
13	23.5	27.4	3.9
14	23.8	27.8	4.0
15	24.2	28.5	4.2
16	25.8	30.1	4.3
17	26.3	30.8	4.5
18	26.6	31.2	4.6
19	27.0	31.6	4.7
20	28.4	33.1	4.7
21	28.5	33.5	5.1
22	28.6	34.1	5.5
23	28.6	34.3	5.7
24	30.2	36.4	6.1
25	30.3	36.8	6.5
26	30.6	37.4	6.9
27	30.6	37.6	7.0
28	31.8	39.4	7.7
29	32.5	40.1	7.6
30	33.0	40.7	7.7
31	33.1	41.2	8.1
32	33.8	41.8	8.1
33	34.2	42.2	8.0
34	34.2	42.3	8.1
35	34.4	42.5	8.0
36	35.7	43.8	8.1
37	34.8	43.0	8.1
38	34.9	43.1	8.1
39	35.1	43.2	8.1
40	36.2	44.6	8.3

Table continues

Table A.20, *continued*

Duration of Spell (Months)	Backward Elapsed Duration (Cumulative Distribution)	Forward (Within Panel) Cumulative Exit Rates	Difference
41	36.3	45.2	8.9
42	36.5	44.7	8.3
43	36.7	44.9	8.2
44	38.5	45.8	7.3
45	38.5	46.2	7.6
46	38.6	46.4	7.8
47	38.7	46.4	7.7
48	41.4	48.3	6.8
49	41.7	48.6	6.9
50	41.7	48.9	7.2
51	42.1	49.3	7.2
52	43.3	**50.2**	6.9
53	43.3	50.3	7.0
54	43.3	50.3	7.0
Sample Size	3,966	3,966	

Universe: Left-censored month 1 SNAP participants weighted by 11-wave panel weights
Source: Decision Demographics tabulations of the 2008 SIPP Panel
Notes: [a] Median duration in bold.

Table A.21

Distribution of Adults by Employment History, 2008 SIPP Panel

	Percentage of Adults					
	Month 1 [a]	Month 12	Month 24	Month 36	Month 48	Month 56
Average Unemployment Rate (CPS)	5.8	9.3	9.5	9.0	8.2	8.1
Total Not Employed Adults (Age 18-75)	69,232,874	67,729,858	70,036,130	70,536,461	67,118,653	64,791,546
Employed within Previous 6 Months	11.0%	18.2%	14.0%	12.9%	12.3%	12.7%
Employed within Previous 12 Months	16.5	26.3	25.1	22.6	21.5	21.6
Don't Know	8.9	0.0	0.0	0.0	0.0	0.0
Total Employed Adults (Age 18-75)	138,109,089	139,555,050	135,798,999	135,452,153	129,035,715	121,975,067
Employed All of Previous 6 Months	NA	91.2	91.3	91.6	91.5	91.9
Employed All of Previous 12 Months	NA	82.1	83.1	83.3	84.0	84.1

Universe: All panel adults age 18-75 in given month weighted by 11-wave panel weights

Source: Decision Demographics tabulations of the 2008 SIPP Panel and Current Population Survey 2008-2013, data from http://www.bls.gov/data/#employment, Series ID LNU04000000

Notes: [a] Age at Month 4

Table A.22

Percentage of SNAP Participants with One- and Two-Month Gaps, 2008 SIPP Panel

Number of One-Month Gaps	Percentages: Number of Two-Month Gaps				Number of One-Month Gaps	Weighted Counts: Number of Two-Month Gaps				Number of One-Month Gaps	Unweighted Counts: Number of Two-Month Gaps			
	0	1	2	3+		0	1	2	3+		0	1	2	3+
0	92.1%	2.8%	0.4%	0.0%	0	61,975,830	1,854,774	235,949	0	0	10,344	296	30	0
1	4.2	0.4	0.1	0.0	1	2,798,641	281,370	38,672	0	1	455	43	5	0
2	0.1	0.0	0.0	0.0	2	76,693	0	9,930	0	2	14	0	2	0
3+	0.0	0.0	0.0	0.0	3+	0	0	0	0	3+	0	0	0	0

Universe: All individuals, excluding infants born after Wave 1, with one or more SNAP spells during first 14 waves of SIPP panel, weighted by 11-wave longitudinal weight

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Table A.23

Distribution of One-Month and Two-Month Gaps within the Reference Period, 2008 SIPP Panel

	Weighted Number	Percentage
One-Month Gaps		
Gap at Month 1	449,788	13.7%
Gap at Month 2	739,784	22.5
Gap at Month 3	552,631	16.8
Gap at Month 4	1,549,726	47.1
Two-Month Gaps		
Gap Starting in Month 1	241,220	8.9
Gap Starting in Month 2	807,423	29.8
Gap Starting in Month 3	1,553,619	57.4
Gap Starting in Month 4	102,984	3.8

Universe: All individuals, excluding infants born after Wave 1, with one or more SNAP spells during first 14 waves of SIPP panel, weighted by 11-wave longitudinal weight

Source: Decision Demographics weighted tabulations of the 2008 SIPP panel

Table A.24

Duration of Spells with Gaps and Once Gaps are Closed, 2008 SIPP Panel

	One-Month Gap	Two-Month Gap [a]
Length of Spell Prior to Gap		
Average if not Left-Censored	9.8	9.2
Percentage Left-Censored	29.4%	28.5%
Length of Spell Following Gap		
Average	11.7	14.6
Average if not Right-Censored	9.9	15.9
Percentage Right-Censored	48.2%	59.5%
Length of Spell if Gap Closed [a]		
Average	28.0	33.0
Average if not Left-Censored	23.0	29.0
Average if not Right-Censored	22.6	29.1
Average if not Left- or Right-Censored	19.7	25.9
Percentage Left- or Right-Censored	57.6%	65.1%

Universe: All individuals excluding infants born after Wave 1 with one or more SNAP spells during first 14 waves of SIPP panel, weighted by 11-wave longitudinal weight

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] The second column contains estimates for closing both one- and two-month gaps.

Table A.25

Characteristics of Individuals with and without Gaps, 2008 SIPP Panel

	No Gaps	One 1-Month Gap	One 2-Month Gap	Multiple Gaps
Total individuals	61,975,830	2,798,641	1,854,774	642,615
Average Percentage of Months in SIPP Panel Spent Participating in SNAP	50.9%	61.2%	69.1%	72.6%
Average Family Benefit	$242	$268	$250	$285
Percentage in Families with Children	67.9	76.7	73.4	84.5
Percentage in Families without Children	32.1	23.3	26.6	15.5
Percentage in Families with Elderly	19.5	15.1	11.5	7.5
Percentage in Families without Elderly	80.5	84.9	88.5	92.5
Percentage in Families of Size 1	15.5	12.7	15.2	10.5
Percentage in Families of Size 2	16.4	15.5	21.1	14.2
Percentage in Families of Size 3 or More	68.1	71.8	63.7	75.3
Percentage in Families with Earned Income	67.4	72.3	70.5	75.3
Percentage in Families without Earned Income	32.6	27.7	29.5	24.7
Percentage in Families with Unearned Income	68.0	66.7	63.7	51.6
Percentage in Families without Unearned Income	32.0	33.3	36.3	48.4
Percentage in Families with SSI	7.8	6.8	5.0	7.3
Percentage in Families without SSI	92.2	93.2	95.0	92.7
Percentage in Families with Social Security	23.3	20.6	17.2	14.7
Percentage in Families without Social Security	76.7	79.4	82.8	85.3

Table continues

Table A.25, *continued*

	No Gaps	One 1-Month Gap	One 2-Month Gap	Multiple Gaps
Percentage in Families with Unemployment Compensation	3.2	2.5	1.8	12.1
Percentage in Families without Unemployment Compensation	96.8	97.5	98.2	87.9
Percentage in Families with TANF	7.0	8.3	10.7	5.2
Percentage in Families without TANF	93.0	91.7	89.3	94.8
Percentage in Families with Income Increase in Gap Month	—	14.4	19.0	12.7
Percentage in Families with Income Increase in Month Prior to Gap	—	21.0	20.4	19.3
Percentage in Families with Income at or Below Poverty	42.6	46.3	47.1	50.7
Percentage in Families with Income Above Poverty	57.4	53.7	52.9	49.3

Universe: All individuals excluding infants born after Wave 1 with one or more SNAP spells during first 14 waves of SIPP panel, weighted by 11-wave longitudinal weight

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Table A.26

Timing of Changes in Family Characteristics Relative to the Participation Gap, 2008 SIPP Panel

Characteristics	In Families with 1- or 2-Month Gap Experiencing Change Across Gap [a]	Families with no Gap that had Change within Spell	In Families with 3- or More Month Gap Experiencing Change Across Longer Gap [a]
Increase in Family Size	6.9%	15.6%	27.5%
Decrease in Family Size	5.0	12.9	31.7
No Change in Family Size	88.8	77.8	50.3
Increase in Benefit Level	26.1	19.3	29.0
Decrease in Benefit Level	25.1	17.3	34.6
No Change in Benefit Level	71.5	75.8	59.6
Increase in Number of Children	4.9	11.3	16.8
Decrease in Number of Children	3.2	12.6	30.5
No Change in Number of Children	92.4	80.5	59.8
Increase in Number of Elderly	0.4	3.7	5.7
Decrease in Number of Elderly	0.5	1.8	16.4
No Change in Number of Elderly	99.1	95.1	79.6
Increase in Earned Income	21.9	51.2	58.7
Decrease in Earned Income	19.3	50.0	55.6
No Change in Earned Income	65.1	40.1	33.7
Increase in Unearned Income	20.1	53.8	60.4
Decrease in Unearned Income	16.3	50.3	53.8
No Change in Unearned Income	68.8	38.2	31.2
Increase in SSI	4.8	15.8	20.3
Decrease in SSI	2.7	13.9	25.3
No Change in SSI	92.8	81.6	66.8

Table continues

Table A.26, *continued*

Characteristics	In Families with 1- or 2-Month Gap Experiencing Change Across Gap [a]	Families with no Gap that had Change within Spell	In Families with 3- or More Month Gap Experiencing Change Across Longer Gap [a]
Increase in Social Security Income	3.3	18.9	24.3
Decrease in Social Security Income	3.7	15.1	26.7
No Change in Social Security Income	93.5	77.7	62.6
Increase in Unemployment Compensation	2.7	11.4	17.1
Decrease in Unemployment Compensation	2.8	12.2	21.5
No Change in Unemployment Compensation	95.9	85.1	70.1
Increase in TANF	1.1	8.7	9.3
Decrease in TANF	0.8	8.6	19.3
No Change in TANF	98.3	89.5	76.6

Universe: All individuals excluding infants born after Wave 1 with one or more SNAP spells during first 14 waves of SIPP panel, weighted by 11-wave longitudinal weight

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] Characteristic changes across any two of the three time periods: before gap, within gap, following gap

Table A.27

Amount of Income Change around Participation Gap, 2008 SIPP Panel

	Percentage of Gaps with Individuals Experiencing Change in Month Income Amount [a]		
Change in Monthly Income	Month Prior to Gap	Month(s) of Gap	Month Following Gap
Earned Income	29.3%	24.3%	31.7%
$1-$200	8.2	6.1	8.9
$201-$400	2.6	3.4	6.3
$401+	18.5	14.8	16.5
Unearned Income	23.5	22.3	27.7
$1-$200	7.1	8.5	12.0
$201-$400	5.4	3.3	5.0
$401+	11.0	10.5	10.7
SSI	3.8	3.4	4.3
$1-$200	1.9	1.0	1.0
$201-$400	0.1	0.2	0.1
$401+	1.7	2.2	3.2
Social Security	4.4	2.7	4.2
$1-$200	1.3	1.0	1.2
$201-$400	1.0	0.5	0.7
$401+	2.1	1.2	2.3
Unemployment Compensation	4.3	4.2	3.5
$1-$200	0.9	1.0	0.2
$201-$400	1.2	0.9	1.9
$401+	2.3	2.3	1.4
TANF	1.8	2.8	2.5
$1-$200	0.4	0.9	1.3
$201-$400	0.6	1.4	1.0
$401+	0.8	0.5	0.2

Universe: All individuals excluding infants born after Wave 1 with one or more SNAP spells during first 14 waves of SIPP panel, weighted by 11-wave longitudinal weight

Source: Decision Demographics tabulations of the 2008 SIPP Panel

Notes: [a] Individuals experience change from the month prior to the column heading to the month identified in the column heading.

Table A.28

Three Supplemental Data Sources: Rates of Linkage to 2008 SIPP Panel

	All Individuals with 11-panel Longitudinal Weight					
	Total		Receiving SNAP in Month 1 [a]		Ever Received SNAP During Panel Period [a]	
	Number	Percent	Number	Percent	Number	Percent
Unweighted Sample	51,908	100.0%	4,076	100.0%	11,189	100.0%
Census Tract-Level Data						
American Community Survey Contextual Data from 2008-2012						
Matched Individuals	51,222	98.7	3,998	98.1	11,025	98.5
Individuals without a Match	686	1.3	78	1.9	164	1.5
ERS 2010 Food Access Research Atlas						
Matched Individuals	51,251	98.7	3,998	98.1	11,028	98.6
Individuals without a Match	657	1.3	78	1.9	161	1.4
Household-Level Data						
Census internal *RealtyTrac* Data from 2005-2011						
Matched Individuals	51,908	100.0	4,076	100.0	11,189	100.0
Individuals without a Match	0	0.0	0	0.0	0	0.0
Between-wave Movers as a Percent of all Individuals (average)		6.8				
In State that does not Require Lenders to File a Notice of Default (i.e., records may be incomplete) [a]	10,635	20.5				

Universe: All individuals in the 2008 SIPP Panel with 11-panel longitudinal weight

Source: Decision Demographics tabulations of the 2008 SIPP Panel, the 2008-2012 Census Bureau ACS geographic boundaries and population characteristics summary files, the 2010 ERS Food Access Research Atlas, internal mortgage foreclosure data file developed internally by the Census

Notes: [a] The following 16 States do not require a lender to file a notice of default in the public records; as such data for these States may be incomplete: Alabama, Arizona, Colorado, Georgia, Minnesota, Mississippi, Missouri, Montana, New Hampshire, Oregon, Tennessee, Texas, Virginia, Washington, West Virginia, and Wyoming.

Table A.29

Supplemental Data Summary Measures by 2008 SIPP Panel SNAP Participation

	All Individuals	Individuals Who Reported SNAP Receipt in Month 1		Individuals Who Ever Received SNAP during Panel Period	
	(Weighted)	On SNAP	Not on SNAP	Ever SNAP	Never SNAP
Measures of Relative Poverty [a]					
Percent of Population in Resident Census Tract:					
Receives SNAP	11.9%	21.7%	11.0%	18.7%	9.9%
Has Income below 200% of Poverty	33.8	48.8	32.5	45.0	30.5
Has Income below 100% of Poverty	14.9	24.4	14.1	21.6	12.9
Percent who Live in a Census Tract in which at Least:					
25% of Residents Receive SNAP	11.3	33.9	9.3	25.7	7.1
33% of Residents Receive SNAP	5.0	18.9	3.8	13.7	2.5
25% of Residents are under Poverty Level	17.0	42.7	14.8	34.1	12.0
33% of Residents are under Poverty Level	7.9	24.8	6.5	18.8	4.8
Percent who Live in a Low Income Neighborhood (as defined by the Dept. of Treasury's New Markets Tax Credit (NMTC) Program) [b]	36.7	69.0	33.8	59.8	30.0
Measures of Food Access [a]					
Percentage who Live in a Census Tract that is Classified as a Low Access Tract at:					
1 mile for Urban Areas or 10 miles for Rural Areas (ERS Food Atlas variable: LA1and10)	42.5	37.1	42.9	38.4	43.7
1/2 mile for Urban Areas or 10 miles for Rural Areas (ERS Food Atlas variable: LAHalfand10)	72.6	70.1	72.7	70.9	73.0
1 mile for Urban Areas or 20 miles for Rural Areas (ERS Food Atlas variable: LA1and20)	39.1	32.4	39.6	34.3	40.5

Table continues

Table A.29, *continued*

	All Individuals	Individuals Who Reported SNAP Receipt in Month 1		Individuals Who Ever Received SNAP during Panel Period	
	(Weighted)	On SNAP	Not on SNAP	Ever SNAP	Never SNAP
Measures of Whether an Individual Has Been Affected by Foreclosure					
Percentage Ever Experienced, during Panel Period:					
A Notice of Default	4.9	5.0	4.9	6.4	4.5
A Notice of Foreclosure Sale	2.9	3.2	2.9	4.1	2.6
Bank Owned Property (Foreclosure)	1.8	2.4	1.7	2.6	1.5
Unweighted Sample Size [c]	51,908	4,076	47,054	11,189	40,719

Universe: All individuals in the 2008 SIPP Panel, weighted by 11-panel longitudinal weight

Source: Decision Demographics tabulations of the 2008 SIPP Panel, the 2008-2012 Census Bureau American Community Survey (ACS) geographic boundaries and population characteristics summary files, the 2010 ERS Food Access Research Atlas, 2005-2011 internal mortgage foreclosure data file developed internally by the Census Bureau from RealtyTrac data.

Notes: [a] As of Month 1 of their panel period. When subgroups are created, more precise measures of time will be used, consistent with study subgroup definition procedures.

[b] The NMTC defines a low-income Census tract as a tract in which: the poverty rate is 20 percent or greater; or the median family income is less than or equal to 80 percent of the State-wide median family income; or the tract is in a metropolitan area and has a median family income less than or equal to 80 percent of the metropolitan area's median family income.

[c] Individuals with a positive longitudinal panel weight

Attachment 2

Data Assessment Table Crosswalk

2008 SIPP Data Assessment		2004 SIPP Data Assessment	
Table No.	**Title**	**Table No. [a]**	**App. A Page**
A.1	Sample Loss Rates, by Select Characteristics in 2008 SIPP Panel	A.2	8
A.2	Demographic and Economic Characteristics of Sample Members, using Cross-Sectional and 11-Wave Panel Weights, 2008 SIPP Panel	A.3	10
A.3	Decile Values of Selected Monthly Income Distributions for January 2009, Using Cross-Sectional and 11-Wave Panel Weights, 2008 SIPP Panel	A.4	12
A.4	Comparison of Percentage Distribution of Population Characteristics in the 2008 SIPP Panel and CPS ASEC, 2009-2012	A.5	15
A.5	Distribution of Transition Events by Reference Month, 2008 SIPP Panel	A.6	18
A.6	Rates of Seam Reporting For Select Subgroups, 2008 SIPP Panel	A.7	19
A.7	Frequency of Within-Unit Inconsistencies for SNAP and TANF, 2008 SIPP Panel, Unweighted	A.8	24
A.8	Difference in Program Participation Levels Between Waves 1 and 2 of the 2008 SIPP Panel	A.9	26
A.9	Decomposition of Changes in SNAP Participation Estimates across the Common Months of Waves 1 through 5 in the 2008 SIPP	A.10	28
A.10	SNAP Participants by Percentage Distribution of Characteristics in Administrative Data and in the 2008 SIPP Panel	A.11	30
A.11	SIPP 2008 Panel Timing	(new)	NA
A.12	Extent of Missing and Imputed Start Dates of Month 1 Spells by SNAP Reference Person Status, 2008 SIPP Panel	A.12	37
A.13	Elapsed Length of Month 1 Spells and Imputation Status, 2008 SIPP Panel	A.13	38
A.14	Elapsed Length of Month 1 Spells Beginning before Month 1, 2008 SIPP Panel	A.15	42

2008 SIPP Data Assessment		2004 SIPP Data Assessment	
Table No.	**Title**	**Table No. [a]**	**App. A Page**
A.15	SNAP Spells Beginning in that Panel Month as a Percentage of On-Going Spells, 2008 SIPP Panel	A.16	44
A.16	Cumulative Exit Rate for Three Samples of Spells, by Duration, 2008 SIPP Panel	A.17	45
A.17	Median Spell Durations for Five Samples of Non-Left Censored Spells: 2008, 2004, 2001, & 1991 SIPP Panels	A.18	46
A.18	Cumulative Exit Rates for Month 1 Left-Censored Spells, by Panel Month and Elapsed Duration, 2008 SIPP Panel	A.19	47
A.19	Cumulative Exit Rates for Artificial and Month 1 Left-Censored Spells, 2008 SIPP Panel	A.20	49
A.20	Forward and Backward Spell Duration Distributions of Month 1 Left-Censored Spells, 2008 SIPP Panel	A.21	52
A.21	Distribution of Adults by Employment History, 2008 SIPP Panel	A.22	53
A.22	Percentage of SNAP Participants with One- and Two-Month Gaps, 2008 SIPP Panel	A.23	55
A.23	Distribution of One-Month and Two-Month Gaps within the Reference Period, 2008 SIPP Panel	A.24	56
A.24	Duration of Spells with Gaps and Once Gaps are Closed, 2008 SIPP Panel	A.25	57
A.25	Characteristics of Individuals with and without Gaps, 2008 SIPP Panel	A.26	59
A.26	Timing of Changes in Family Characteristics Relative to the Participation Gap, 2008 SIPP Panel	A.27	60
A.27	Amount of Income Change around Participation Gap, 2008 SIPP Panel	A.28	62
A.28	Three Supplemental Data Sources: Rates of Linkage to 2008 SIPP Panel	(new)	NA
A.29	Supplemental Data Summary Measures by 2008 SIPP Panel SNAP Participation	(new)	NA

Source for 2004 SIPP Tables: Mabli et al. (2011a)

[a] Two tables from the 2004 SIPP Data Assessment were not used:

A.1 Obtaining Eight-Wave Longitudinal Sample from Initial Sample, 2004 Panel

A.14 Month 1 Spells that Began after Month 1 and Imputation Stat

Appendix B

Subgroup Definitions in SNAP Dynamics Research

In this appendix, we provide information about when in the study individuals are assigned to subgroups, how selected subgroup definitions have evolved across a series five SNAP dynamics research reports, and how we define new exploratory subgroups using data from sources other than SIPP.

A. Subgroup Assignment

Subgroup definitions are not mutually exclusive, so individual SNAP participants can belong to more than one subgroup and appear in multiple tables. For example, a study participant may be simultaneously defined as a single parent, a disabled individual, a noncitizen, an individual with family earnings, and an individual in families receiving SSI and contribute data to each of these tables. Furthermore, subgroup memberships may fluctuate over the panel observation period as family composition, demographic characteristics, and/or economic circumstances change from month to month.

Methodologically, participants must be assigned to one or more subgroup at a consistent point in the study. For example, if a participating family starts its spell with earnings, but then loses the earnings, their participation spell will continue, but they will have changed from a subgroup with earnings to a subgroup without earnings. We do not want to divide their spell into two distinct spells, one for the period in which they had earnings and one for the period in which they did not, so we need to choose one. Below, we explain the point in time at which we place individuals into certain subgroups for each of the dynamics measures we investigate.

At-risk and entrants. Subgroup membership for the at-risk population and SNAP entrants is determined on a month-by-month basis. For these measures only, the subgroup assignment is allowed to change on a monthly basis if respondents' characteristics change. Each month, from month 3 to month 55, individuals are placed into the at-risk subgroup based on their current characteristics. We then examine the subsequent month to see if they entered. We identify those who enter in the subsequent month as new entrants and classify them based on their previous month characteristics. For example, of all the person months in which individuals met the definition of at-risk, 2.5 percent were single parents. Of all the persons in every month examined who entered SNAP, 5.9 percent were single parents.

Entry rates. For entry rates, we determine each individual's subgroup membership as of the month preceding entry for monthly entry rates, as of the last month preceding the wave of entry for wave-based entry rates, and as of the last month preceding the year of entry for annual entry rates.

New SNAP spells. We determine the subgroup of new spells in the same manner as the monthly entry rate: the month preceding SNAP entry.

Subsequent and completed spells of the cross-sectional sample. The cross-sectional samples consist of all SNAP spells active as of a given month near the beginning of the panel period. For the 2001 and 2004 panels, this month is May 2001 and May 2004; for the 2008 panel the cross-sectional sample month is December 2008. In each case, the cross-sectional sample month is the first common month in the second SIPP wave. We also make subgroup determinations as of that month.

Re-entry rates. An "off spell" is a period of time when a person who has received SNAP is not participating in the program. An off spell begins when a person leaves the program; the somewhat counter-intuitive exit rate from these off spells actually represents ***re-entry*** into SNAP. Subgroups are assigned as of the month before the off spell began.

Exit triggers. Since exit trigger events use a four-month reference period, the subgroup for exit trigger analysis is determined four months previous to exiting a SNAP spell.

B. Subgroup Definition Changes Over Time

As described in Chapter III, we present SNAP dynamics data for the total population and 13 subgroups, profiled over time based on five studies: Burstein 1993; Gleason et al. 1998; Cody et al. 2007; Mabli et al, 2011a; and the current project. The reports use data from SIPP panels that started in 1984, 1991, 2001, 2004, and 2008, respectively. Table III.1 summarizes these studies and the SIPP data employed for each. For simplicity and comparability to earlier Dynamics studies, this appendix refers to each study by the date the SIPP panel started.

The definitions of some subgroups have changed over time due to changes in the underlying SIPP data and methodological advances. We describe these below. In particular, we highlight: (1) changes to the universe as defined by poverty level, which affected the 1991 data, and (2) the use of family versus household as the unit of analysis, which affected subgroup determinations starting in 2001.

1. Universe as defined by the official poverty level

In the 1991 data, the population at risk of SNAP entry was the total population of person-months that was not in the SNAP program. In 1984, 2001, 2004, and 2008, there is a further restriction on the universe at risk of entry, which is that it includes only those below 300 percent of poverty level. Poverty status restrictions only affect the at-risk and entering population tabulations. For the life-table analyses of SNAP spells that make up the majority of the data presented in Chapter III, all spells are included regardless of the ratio of income to poverty.

2. Households, families and subgroup determination

The second distinction that results in subgroup definition divergences involves the Census concepts of household versus family. The 1984/1991 data use the Census "household" to define and construct subgroups; SIPP defines household as all individuals living in an occupied housing unit. In 2001/2004/2008, however, we use Census "family units" to define and construct subgroups. Census defines the primary family in a SIPP household as all individuals who are related to the head of that household, including members of related subfamilies. Since related members of a family are more likely than nonrelated members of a household to pool financial and food resources to purchase, prepare, and eat together, this definition is more analogous to a SNAP unit; thus the family is the more relevant unit of analysis for a study of SNAP dynamics. We present data for four subgroups in Chapter III for whom this is a particularly important issue. The first two subgroups are:

- Single parents, and
- Children of single parents.

The single parent's subgroup actually corresponds to two different definitions: in 1984/1991 it is adults in *households* with children and one adult, while in 2001/2004/2008 it is adults in *families* with children and one adult. Similarly, the children of single parents subgroup corresponds to the following two definitions: in 1984/1991 it is children in *households* with children and one adult, while in 2001/2004/2008 it is children in *families* with children and one adult. While a single parent with children is probably the modal formation in these definitions, many variations of household and family relationships can correspond to individuals age 18 and over being part of the same household or family as individuals under 18. That simple age test determines whether a 1984/1991 household or a 2001/2004/2008 family qualifies to be part of these subgroups.

The next two subgroups that we track in Chapter III are:

- Married adults with children, and
- Children of married adults,

In 1984/1991, data to form those subgroups were not available, but analogous subgroups based on household-level tests were included:

- Adults in households with children and multiple adults, and
- Children in households with children and multiple adults.

Married adults with children and children of married adults are *family* constructs that probably comprise the modal categories of households in which multiple adults and children who share a household find themselves. Again, many other variations of household and family relationships can correspond to multiple individuals age 18 and co-residing in a household with individuals under age 18; this simple age test, along with sharing of a household, determines the subgroup. Thus, the 1984/1991 subgroups were more broadly constituted.

In the 2001/2004/2008 analyses, we employ four mutually exclusive subgroup definitions at the *family* level. While the first two subgroup titles appear to be close to what was provided in 1984/1991 for households, but by separating the married contingent from the others, we actually create two sets of subgroups that are fairly different from each other.

- Adults in *families* with children and multiple adults
- Children in *families* with children and multiple adults
- Adults in *families* with children and a married head
- Children in *families* with children and a married head

Table B.1 provides at-risk population, SNAP entrants, and SNAP entry rates for the above four categories in 2008. It is clear that families with married heads and children account for the majority of the population at risk, but it is also clear that the SNAP entry rates and the percent of entrants accounted for by the families headed by other multiple adults are disproportionately high. The wave-based SNAP entry rates are about four times higher for the multiple adults categories, the same differential found in the 2001- and 2004-based analyses.

Table B.1 At-Risk Populations, SNAP Entrants, and SNAP Entry Rates, 2008 Panel

Subgroup	At Risk: Income <300% of Poverty	Percent of All SNAP Entrants	Wave-Based SNAP Entry Rate
Total: All Person-Months	100.0	100.0	2.6
Family Composition			
Adults in families with children and multiple adults	3.1	9.2	7.8
Children in families with children and multiple adults	1.7	6.2	9.4
Adults in families with children and a married head	21.4	19.7	2.4
Children in families with children and a married head	17.2	18.3	2.8

Universe: Individuals at risk (not receiving SNAP benefits for at least 2 months; <300% poverty threshold at some point during panel period as indicated) and new SNAP entrants. SNAP spells can begin in panel months 3-55 for monthly rates.

Entry Rates: Person months of those at risk (not receiving SNAP benefits for at least 2 months and income <300% of poverty at some point during panel period). SNAP spells can begin in 5-53 for wave-based rates.

Source: Decision Demographics tabulations of the 2008 SIPP Panel.

Notes: Subgroup characteristics as of reference month for at-risk and SNAP entrants; as of panel month 4 for wave-based entry estimates.

In Chapter III, we limited the 2001/2004/2008 data to:

- Married adults with children (Adults in *families* with children and a married head), and
- Children of married adults (Children in *families* with children and a married head).

Therefore, the categories that we label "married adults with children," and "children of married adults" in these time series tables represent different populations for the 1984/1991 panel analyses than they do in the 2001/2004/2008 panels. The household- versus family-level construct is also relevant for three other subgroups profiled in Chapter III:

- Individuals in families without any elderly or disabled members
- Individuals living in families with earnings, and
- Individuals living in families with TANF income

Each of these subgroups is constituted slightly differently at the family level, as they were in 2001/2004/2008, than at the household level, as they were in 1984/1991, depending on whether there is more than one family unit in a household and whether there are individuals with the identified characteristic in the relevant family or household. The subgroup now known as "individuals in childless families without any elderly or disabled members" was "able-bodied childless adults" in 1984, and "individuals in households with only able-bodied prime-age childless adults" in 1991; however, both concepts referred to individuals in households that contained no children, no elderly, and no disabled individuals. The differences for these groups between the studies are minor, especially in comparison to the adults and children subgroup distinctions mentioned above. For those who are interested in contrasting nonelderly disabled adults with nonelderly nondisabled childless adults as *individuals*, there are subcategories in Chapter II in the main body of the current study that pertain to those groups defined as individuals.

C. Definitions of New Exploratory Subgroups Based on Supplemental Data Sources

To enrich our understanding of SNAP caseloads, in this study based on the 2008 SIPP panel, we added data from three external sources to our SIPP longitudinal file to create additional subgroups not available from SIPP data alone. We assign individuals to these new subgroups in the manner described above. New subgroups fall into three categories:

(1) Characteristics of Individual's Neighborhoods, based on the American Community Survey (ACS) summary files from 2008 – 2012

(2) Geographic Access to Food, based on the Economic Research Service (ERS) Food Access Research Atlas for 2010 (USDA, ongoing)

(3) Mortgage Foreclosure Status during the study period, based on an internal Census Bureau foreclosure database built from foreclosure data for 2008 – 2011 mined by *RealtyTrac*

We linked the first two data sources to the SIPP data via the census tract identification number, which is restricted-access geographic information available only within the Census Bureau. It allows us to identify the neighborhood in which each SIPP individual lives. Foreclosure data mined from property addresses of SIPP individuals are also Census Bureau-proprietary information available only by special arrangement. Work on these new subgroups is exploratory and we will continue to hone the subgroup categories with feedback from FNS as we prepare final analysis tables. Precise definitions for the new subgroups are complex, so we describe their composition here rather than in expansive table footnotes.

1. Characteristics of Individual's Neighborhood

We merged census tract-level ACS summary data to our SIPP longitudinal file by tract.[89] "Neighborhood" refers to the census tract in which the individual resides[90]. Three sets of complementary subgroups and their definitions follow:

- **Individuals living in high poverty neighborhood vs. Individuals not living in high poverty neighborhood.** To determine whether an individual lives in a "high poverty neighborhood," we first merged neighborhood characteristics from the ACS to individual records by census tract. This included the poverty rate of an individual's census tract, expressed as the percentage of each individual's tract population that is poor (family income below 100 percent of federal poverty thresholds). We calculated the median census tract poverty rate for individuals who received SNAP at some point during the study period (19.6 percent). We then evaluated individuals' records to determine whether the poverty rate of their particular census tract is above or below that median poverty rate. Being in a subgroup labelled "high poverty neighborhood" does not mean that an individual himself is poor, only that the tract in which he lived has higher than the median poverty rate.
- **Individuals living in low-income neighborhood vs. Individuals not living in low-income neighborhood.** We repeated the procedure described above for poor neighborhoods, but "low-income" refers to incomes below 200 percent of federal poverty thresholds, and low-income neighborhood" is thus defined as one with more low-income households than the median for SNAP participants. The median for SNAP participants in our study is 45.4 percent that had incomes below 200 percent of poverty. Though the gross income-eligibility threshold under federal SNAP rules for households without elderly or disabled members is 130 percent of poverty, a measure based on 200 percent of poverty is useful, relative to other thresholds, because many States have broad-based categorical eligibility rules that allow a gross income threshold of up to 200 percent of poverty[91]. However, we include the separate 100

[89] We summarized this process in our Data Assessment Memo (Decision Demographics 2014).
[90] To determine the median, we use neighborhood residence of sample members in month 5, the first month of Wave 2. Sensitivity analyses showed no difference in using different months to determine the median.
[91] Even where 130 percent is the limit, 130 percent is a ***monthly*** income limit, and many individuals with annual incomes between 130 and 200 percent of poverty are eligible (below 130 percent of poverty) for part of the year.

and 200 percent of poverty threshold measures as part of our exploration of these new concepts and their relation to measures of SNAP dynamics.

- **Individuals living in high SNAP participation neighborhood vs. Individuals not living in high SNAP participation neighborhood.** We repeated the procedure described for identifying poor neighborhoods, but used SNAP participation percentages in place of poverty percentages; the threshold for "high SNAP participation" is one which is above the median. "SNAP participation" refers to the percentage of a tract's population that receives SNAP benefits. The median for SNAP participants in our study is 16.4 percent, meaning that half of individuals live in Census tracts in which the average SNAP participation rate is greater than or equal to 16.4 percent (and half live in tracts in which the SNAP participation rate is lower than 16.4 percent).

2. Geographic Access to Food

The ERS designed the Food Access Research Atlas data (USDA, ongoing)[92] to provide a spatial overview of communities' access to healthy food. ERS integrated the 2010 Decennial Census, 2006–2010 ACS, and a 2010 list of supermarkets (derived from merging the 2010 Store Tracking and Redemption System (STARS) directory of stores authorized to accept SNAP benefits and the 2010 Trade Dimensions TDLinx directory of stores). Like the ACS neighborhood data, we linked the food access data to our SIPP-based analysis file by census tract. We created two sets of complementary subgroups to study the relationship between food access and SNAP participation patterns, based on metrics used and documented by ERS:

- **Individuals in low food access census tracts vs. Individuals not in low food access census tracts**. ERS defines low access to healthy food as being far from a supermarket, supercenter, or large grocery store ("supermarket" for short). A census tract is considered to have "low access" if a significant number or share of individuals in the tract is far from a supermarket. The specific measure used evaluates whether a tract has at least 500 people or 33 percent of its population living more than 1 mile in urban areas or more than 10 miles in rural areas from the nearest supermarket, supercenter, or large grocery store.

- **Individuals in low-income census tracts with low food access vs. Individuals not in low-income/low-food access tracts.** "Low-income census tracts with low food access" are defined in the same manner as "low food access tracts", but here the ERS Food Atlas database couples the measure with "*Low-income* census tracts," delineated according to the Department of Treasury's New Markets Tax Credit (NMTC) Program. The NMTC defines a low-income census tract as one in which: the poverty rate is 20 percent or greater; the median family income is less than or equal to 80 percent of the statewide median family income; or the tract is in a metropolitan

[92] http://www.ers.usda.gov/data-products/food-access-research-atlas/download-the-data.aspx.

area and has a median family income less than or equal to 80 percent of the metropolitan area's median family income.

3. Mortgage Foreclosure Status

The Census Bureau granted us access to an internal mortgage foreclosure data set, comprised of foreclosure events mined from nationwide Registers of Deeds offices from 2005–2011 (we use 2008–2011 data corresponding to our study dates). Foreclosure events, which we match to property addresses, may include notices of defaults, notices of foreclosure sales or auctions, and final notices of bank ownership (O'Donnell and Coulson, 2013). We created a single set of complementary subgroups to study the relationship between foreclosure exposure and SNAP dynamics:

- **Individuals in housing units affected by foreclosure event vs. Individuals not in housing units affected by foreclosure event**. This measure refers to any of the above listed foreclosure events occurring during the study period and associated with the housing unit in which the SIPP respondent lives. Sample size does not permit us to limit this analysis to only homeowners. Indeed, about half of individuals who live in foreclosure-affected housing units are not homeowners, but they may also experience disruption and hardship due to the foreclosure.

Of the new exploratory subgroups, the foreclosure subgroups are the most experimental. Caveats to the *RealtyTrac* data include the following:

- Sample size limits what we can do with these data. Less than 6 percent of our sample experiences a foreclosure event, creating small foreclosure-affected subgroups.
- Data are available for only the first 11 waves of data.
- Not all states require a lender to file a notice of default in the public records.[93]

[93] Alabama, Arizona, Colorado, Georgia, Minnesota, Mississippi, Missouri, Montana, New Hampshire, Oregon, Tennessee, Texas, Virginia, Washington, West Virginia, and Wyoming do not require lenders to file such notices. However, we found foreclosure event rates to be nearly identical for individuals living in these no-notice-required states compared to those living in states requiring filing. National companies probably do most filing.

Appendix C

Cross-Study Tables Crosswalk

Revised Dynamics Report, 2008–2012		2011 Reports: 2004 SIPP		2007 Report: 2001 SIPP	
No.	**Title**	**No.**	**Page**	**No.**	**Page**
	Descriptive Analysis				
II.1	SNAP Entry Rates for Alternate At-Risk Populations, 2008 SIPP Panel	II.1	40	II.1	36
II.2	SNAP Entry Rates for Alternate At-Risk Populations over Time	II.2	41	II.5	44
II.3	Average Monthly SNAP Entry and Replacement Rates by Year, 2004 and 2008 SIPP Panels	II.3	43	II.6	45
II.4	Characteristics of Alternate At-Risk Populations and SNAP Entrants, 2008 SIPP Panel	II.4	46	II.2	39
II.5	Monthly, Wave-Based, and Annual SNAP Entry Rates by Subgroup, 2008 SIPP Panel	II.5	49	II.3	41
II.6	Age at Which Adults First Enter SNAP, 2008 SIPP Panel	II.6	52	II.4	43
II.7	Frequency and Rate of SNAP Entry Following Specific Entry Trigger Events, 2008 SIPP Panel	II.7	55	II.7	48
II.8	Rate of SNAP Entry Trigger Events, Mutually Exclusive Categories, 2008 SIPP Panel	II.8	58	II.8	51
II.9	Overlap in SNAP Entry Trigger Events, 2008 SIPP Panel	II.9	59	II.9	52
II.10	Monthly SNAP Entry Rates by Trigger Event and Degree of Deviation from Usual Circumstances, 2008 SIPP Panel	II.10	61	II.11	55
II.11	Average Monthly Entry Rates for Those at Risk Before and After ARRA Implementation by Family Poverty Status, 2008 SIPP Panel	NA	NA	NA	NA
II.12	SNAP Participation Spell Length: Life Table Analysis of Spell Length for New Entrants, 2008 SIPP Panel	II.11	68	II.12	60
II.13	SNAP Participation Spell Length for New Entrants by Subgroups, 2008 SIPP Panel	II.12	71	II.13	63
II.14	SNAP Participation Spell Length: Life Table Analysis of Subsequent Spell Length for Cross-Sectional Sample, 2008 SIPP Panel	II.13	76	II.14	66
II.15	Comparison of Cumulative Exit Rates in the 2004 and 2008 SIPP Panel Cross-Sectional Samples	NA	NA	NA	NA
II.16	Subsequent SNAP Participation Spell Length for Cross-Sectional Sample by Subgroups, 2008 SIPP Panel	II.14	78	II.15	68
II.17	SNAP Participation Spell Length: Life Table Analysis of Completed Spell Length for Cross-Sectional Sample, 2008 SIPP Panel	II.15	81	II.16	70
II.18	Historic Comparison of Spell Lengths and Exit Rates for Completed Spells for Cross-Sectional Samples, 1991 through 2008 SIPP Panels	II.16	82	NA	NA
II.19	Completed Length of SNAP Spells for the Cross-Sectional Sample by Subgroups, 2008 SIPP Panel	II.17	84	NA	NA
II.20	Number of Months that Individuals Who Were Unemployed When Entering SNAP Remain on SNAP After Finding Employment, and Median SNAP Spell Length for Each Group, 2008 SIPP Panel	NA	NA	NA	NA
II.21	Median SNAP Spell Length for Unemployed Individuals and for Individuals in Families with Unemployed Members by Length of Time until Unemployed Participant Finds a Job, 2008 SIPP Panel	NA	NA	NA	NA

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II.22	Median SNAP Spell Length by Number of Unemployment Spells, 2008 SIPP Panel	NA	NA	NA	NA
II.23	Spell Lengths for SNAP Participants Before and After ARRA Implementation, 2008 SIPP Panel	NA	NA	NA	NA
II.24	Characteristics of SNAP Exiters, and Exit Rates by Characteristic, 2008 SIPP Panel	NA	NA	NA	NA
II.25	Exit Rates by Frequency of SNAP Exit Trigger Events, 2008 SIPP Panel	II.18	91	II.18	74
II.26	Frequency of SNAP Exit Trigger Events by Subgroups, 2008 SIPP Panel	II.19	95	II.19	75
II.27	Re-Entry Rates: Life Table Analysis of Off-SNAP Spells, 2008 SIPP Panel	II.20	100	II.21	81
II.28	SNAP Re-Entry Rates by Subgroups, 2008 SIPP Panel	II.21	103	II.22	82
II.29	Proportion of Panel Period on SNAP: Total Time on SNAP for All Individuals and SNAP Participants, 2008 SIPP Panel	II.22	108	II.23	85
II.30	Proportion of Panel Period on SNAP: Total Time on SNAP for SNAP Participants and Subgroups, 2008 SIPP Panel	II.23	112	NA	NA
II.31	Characterization of SNAP Participants by Spell Type, 2008 SIPP Panel	II.24	116	II.24	88
II.32	Average Monthly SIPP-Based Growth, Replacement, and Exit Rates, 2008–2012	II.26	124	NA	NA
II.33	Average Monthly SIPP-Based Growth, Replacement, and Exit Rates, 2008 – 2012, by Subgroup	II.27	126	NA	NA
II.34	SNAP Turnover Rates Over Time, 1984 through 2008 SIPP Panels	II.25	119	II.17	71
	Historic Subgroup Analysis				
III.1	Historic Subgroup SNAP Dynamics Data: Total Population	III.5.1	135	NA	NA
III.4.1	___: Single Adults with Children	III.5.2	138	NA	NA
III.4.2	___: Children of Single Parents	III.5.3	141	NA	NA
III.4.3	___: Married Adults with Children	III.5.4	144	NA	NA
III.4.4	___: Children of Married Parents	III.5.5	147	NA	NA
III.4.5	___: Elderly Adults	III.5.6	151	NA	NA
III.4.6	___: Nonelderly Disabled Adults	NA	NA	NA	NA
III.4.7	___: Individuals in Childless Families without any Elderly or Disabled Members	III.5.7	154	NA	NA
III.4.8	___: Noncitizens	III.5.8	158	NA	NA
III.4.9	___: Individuals in Families with Earnings	III.5.9	160	NA	NA
III.4.10	___: Individuals in Families with TANF	III.5.10	163	NA	NA
III.4.11	___: Individuals in Families with Social Security Income	NA	NA	NA	NA
III.4.12	___: Individuals in Families with Supplemental Security Income	NA	NA	NA	NA
III.4.13	___: Individuals in Families with Zero Income	NA	NA	NA	NA

Sources: Mabli et al. (2011a) for 2004 SIPP; Cody et al. (2007) for 2001 SIPP.