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Food Stamp Program Entry and Exit

An Analysis of Participation Trends in the 1990s

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Abstract

This study examines the degree to which changes in entry and exit patterns into and out of the Food Stamp Program (FSP) contributed to the FSP caseload growth of the early 1990s and to the decline of the late 1990s. A rise in the FSP entry rate was the driving force behind caseload growth in the early 1990s. However, individuals tended to stay longer in the FSP during this period than at other points of the 1990s, which also contributed to the growth. Caseload decline of the late 1990s was driven predominantly by shorter participation length, although lower entry rates also contributed. The entry rate for single mothers remained relatively constant over the 1990s, but participation length declined in the late 1990s. Despite eligibility restrictions in the late 1990s, the entry rate for noncitizens also remained fairly constant. While the entry rate for able-bodied adults fell after time limits were imposed in the mid-1990s, their participation length appeared unaffected by these limits, which may reflect the tendency for able-bodied adults to have short participation spells even without time limits. Among all new entrants in the FSP in the 1990s, more than half exited the program within 8 months and two-thirds exited within 1 year. Among individuals participating in the FSP for longer than 1 year, the typical participation length declined over the 1990s.

Food Assistance and Nutrition Research Program

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EXECUTIVE SUMMARY

During the 1990s, the Food Stamp Program (FSP) caseload experienced periods of both substantial growth and substantial decline. Between 1990 and 1994, the caseload increased from 20 million to 29 million participants—an increase of more than 44 percent. After 1994, the caseload fell by more than 12 million participants—a decline of 43 percent. In 1997 alone, the caseload fell by 12.5 percent. The period of decline ended in 2001, and by January 2004, the caseload had risen by about 38 percent. These trends coincided with significant changes in the national economy as well as major changes in FSP policies.

Increases and decreases in the monthly number of FSP participants result from changes in rates of entry and exit. Caseloads can grow because individuals enter the program at a faster rate, because individuals exit the program at a slower rate, or both. Likewise, caseloads can decline because individuals exit at a faster rate, enter at a slower rate, or both. However, little is known about how these factors combined to influence FSP caseload trends in the 1990s. While caseload sizes changed in response to policy and economic changes, policymakers do not know the degree to which the response reflected a change in entry patterns versus a change in the length of time individuals participated in the program. Understanding whether caseload trends are driven by changes in entry or changes in exit is important both for judging the success of existing policies and for developing effective policies in the future.

This study examines patterns in the rates of FSP entry and exit, and how those patterns contribute to the caseload trends of the 1990s. Specifically, we examine monthly replacement rates (defined as the number of new FSP entrants in a month divided by the previous month's caseload) and exit rates (defined as the number of people participating in the previous month but not the current month divided by the previous month's caseload). As another way of examining changes in exit rates, we examine changes in the length of participation spell: if participation spells tend to get shorter, then exit rates are increasing, but if participation spells tend to get longer, then exit rates are decreasing.

The five research questions addressed in this study are:

1. How did growth rates, replacement rates, and exit rates change over the course of the 1990s?
2. Are the changes in the growth rates explained by changes in the replacement rate, changes in the exit rate, or both?
3. How long did individual FSP participation spells tend to last?
4. Have FSP spell lengths changed over time?
5. Did replacement rates, exit rates, and spell lengths vary for FSP subpopulations, including the elderly, able-bodied adults, single mothers, and the working poor?

RESULTS

This study examines patterns of FSP entry and exit for all participants and for various subgroups. We examine how rates of entry and exit changed and how those changes influenced caseload growth. This study also updates earlier estimates of participation spell patterns. We construct all estimates twice, using two sources of data: (1) the Food Stamp Program Quality Control (FSPQC) database and (2) the Survey of Income and Program Participation (SIPP). The results yield the following conclusions:

- Caseload changes during the 1990s were driven both by changes in the rate that people entered the program as well as by the length of time that people participated.
- Much of the caseload growth of the early 1990s was caused by increasing replacement rates, although lengthening participation spells also contributed to the growth.
- Much of the caseload decline of the late 1990s was caused by shorter participation spells. In particular, participation spells among long-term participants were reduced substantially.
- During the entire 1990 to 1999 period, more than half of new entrants exited the program within between six and eight months, and about two-thirds of new entrants exited within one year.
- In any given month, the caseload consisted of a large portion of long-term participants. In March 1996, between one-third and one-half of participants were in the middle of spells longer than four and a half years (a substantial decline from earlier estimates which indicated that in 1992 one-half of participants were in the middle of spells longer than eight years).
- Single mothers entered the FSP at a relatively constant rate throughout the 1990s. The length of time that single mothers participated in the FSP declined over the course of the 1990s.
- Because able-bodied adults have always experienced short FSP participation spells, the time limits on FSP benefits imposed through welfare reform had only a minor impact on the length of their participation spells.
- There is no evidence that the welfare reform changes of 1996, which denied eligibility to certain types of noncitizens, lowered rates of food stamp program entry among noncitizens.

The specific answers to the study's five research questions are discussed below. Results are discussed across three distinct periods of caseload change, each about three years in duration and reflecting different stages of the caseload growth cycle. The first was a period of caseload growth from 1990 to 1993; the second was a period of some caseload decline between 1993 and 1996; the third was a period of sharp caseload decline from 1996 to 1999.

TABLE ES-1

AVERAGE MONTHLY GROWTH RATES, REPLACEMENT RATES, AND EXIT RATES, 1990 THROUGH 1999

	FSPQC-Based Estimates			SIPP-Based Estimates		
	Average Growth Rate[a]	Average Replacement Rate[b]	Average Exit Rate[c]	Average Growth Rate[a]	Average Replacement Rate[b]	Average Exit Rate[c]
Overall	-0.2	7.0	7.2	0.0	4.4	4.4
Caseload Growth 1990-1993	0.9	7.5	6.7	1.4	5.3	3.9
Caseload Decline I 1993-1996	-0.4	6.8	7.2	0.0	4.2	4.2
Caseload Decline II 1996-1999	-0.9	6.7	7.6	-1.3	3.8	5.1

SOURCE: 1990-2002 FSPQC data; 1990-1996 SIPP panels (1996 SIPP-based estimates are adjusted).

[a]Reflects the average monthly percent change in the number of FSP participants. Computed as average monthly difference between the replacement rate and the exit rate.

[b]Computed as the average monthly number of new entrants as a percent of the previous months number of participants.

[c]Computed as the average monthly number of individuals that left the FSP as a percent of the previous month's number of participants.

Question 1: How did growth rates, replacement rates, and exit rates change over the course of the 1990s?

Both FSPQC and SIPP data indicate that replacement rates fell and exit rates increased during the 1990s (Table ES-1). Replacement rates were at their lowest levels during the period of caseload decline in the late 1990s. Thus, as the caseload peaked and subsequently began to decline, there were fewer new entrants relative to the previous month's caseload. At the same time, exit rates were at their highest during the decline, so relative to the previous month's caseload, the number leaving the FSP each month grew.

Replacement rates and exit rates tended to be higher in FSPQC than in SIPP analyses. In FSPQC data, the average replacement and exit rates for the 1990s were 7.0 and 7.2 percent, respectively. In SIPP, the rates for the same period were each 4.4 percent. A likely explanation for this difference is that the frequency of reported entry and exits increased in the 1996 SIPP panel. Changes to the survey implemented in 1996 may have led to changes in the way entries and exits were reported. At the same time, it is possible that FSPQC may slightly overstate entry and exit rates. Nevertheless, because FSPQC data are weighted to match administrative participation counts, these estimated growth rates are considered more reliable.

TABLE ES-2

PERCENT OF CHANGE IN GROWTH RATE EXPLAINED BY CHANGES IN REPLACEMENT AND EXIT RATES, 1990 THROUGH 1999

	FSPQC-Based Rates		SIPP-Based Rates	
Growth Rate Change	Percent Explained by Change in Replacement Rate	Percent Explained by Change in Exit Rate	Percent Explained by Change in Replacement Rate	Percent Explained by Change in Exit Rate
Growth (1990-1993) to Decline I (1993-1996)	55.7	44.3	77.2	22.8
Decline I (1993-1996) to Decline II (1996-1999)	30.3	69.7	28.2	71.8
Growth (1990-1993) to Decline II (1996-1999)	47.8	52.2	53.8	46.2

Question 2: Are the changes in the growth rates explained by changes in the replacement rate, changes in the exit rate, or both?

The rapid growth in FSP participation in the early 1990s changed to a slight decline in the mid 1990s. This shift can be explained more by a reduction in the rate people entered the program (the replacement rate) than by an increase in the rate that people exited the program (Table ES-2). However, the two data sources used in this study yield different estimates of the relative importance of changes in the rate at which individuals enter the program. According to FSPQC data, the fact that individuals entered the FSP at lower rates explains just over half of the shift between rapid growth and slight decline, while according to SIPP data, lower rates of entry explain 77 percent of the shift.

The slight decline of the mid 1990s then changed to a rapid decline in the late 1990s because participants were exiting at higher rates (and thus had shorter participation spells). Both data sets estimate that rising exit rates explain more than two-thirds of the shift in growth rates between the mid-1990s and the late 1990s. These changes are particularly policy-relevant given that the steep decline followed the sweeping welfare reform changes of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). During this period, the exit rates were higher than at any other point in the decade.

But the overall conclusion for the 1990s is that neither the replacement rate nor the exit rate was solely responsible for explaining caseload changes. When we examine the relative roles of replacement and exit rate changes in the shift from the caseload growth period of 1990 to 1993 to the caseload decline period of 1996 to 1999, both FSPQC and SIPP indicate that the two factors have equal weight in explaining the caseload changes. As a result, policymakers should consider

the implications of policy and economic changes on both the rate at which people enter the program and on the length of time that they participate.

Question 3: How long did individual FSP participation spells tend to last?

According to both SIPP and FSPQC data, over half of all new entrants into the FSP exited the program by somewhere between six and eight months, and approximately two-thirds of new entrants exited by the end of one year in the program. Only about one out of every three new entrants participated in the program for longer than one year. Among those new entrants with spells longer than one year, the duration of their spells was estimated to be longer in SIPP data (where more than 20 percent of new entrants participated for over two years) than in FSPQC data (where just over 10 percent of new entrants participated for more than two years).

Examining participation spells of new entrants tells only part of the story. While new entrants that become short-term participants cycle off of the program after a few months, new entrants that become long-term participants tend to accumulate on the caseload. Thus, in any given month, a large proportion of the caseload will be long-term participants.

According to FSPQC data, half of all individuals participating in March 1996 were in the middle of participation spells longer than two years, and one-third of all participants had participation spells lasting longer than four and a half years. SIPP data estimate that the caseload that month had an even higher proportion of long-term cases. According to SIPP, half of the individuals participating in March 1996 were in the middle of participation spells lasting longer than four and a half years. Both data sources indicate that there were far fewer long-term participants in 1996 than in 1991, where prior studies using SIPP data estimate that half of participants were in the middle of participation spells lasting longer than eight years. The reasons for the substantial differences between FSPQC and SIPP estimates of participation spells in March 1996 are not fully understood. However, it is possible that the respective data collection methods lead FSPQC to underestimate participation spells and lead SIPP data to overestimate participation spells.

Question 4: Have FSP spell lengths changed over time?

FSPQC data estimate that participation spells became shorter over the 1990s. According to FSPQC data, 25 percent of individuals that entered the program in the early 1990s exited by the end of their fourth month, and 50 percent by the end of their seventh month. In the late 1990s, 25 percent of program entrants exited by their third month and 50 percent by their sixth month. While these differences may seem modest, the fact that at least 50 percent of new entrants were exiting faster led to substantial declines in the caseload.

SIPP data, on the other hand, estimate that participation spells were relatively constant over time. Among individuals who entered the FSP in the early 1990s as well as in the late 1990s, SIPP estimates indicate that the 25 percent exit by their fourth month and 50 percent exit by their eighth month.

Among households with relatively long participation spells, both FSPQC and SIPP data estimate that spells became shorter over the 1990s, but the estimates differ on the magnitude of the decrease. According to FSPQC data, the 75th percentile spell length (the point at which 75 percent of individuals who entered the program exit) fell from 13 months in the early 1990s to 12 months in the late 1990s. According to SIPP data, the 75th percentile fell from 26 months to 16 months. Some of this change may be driven by changes in the data, as rates of entry and exit experience an unexplained increase in later years of SIPP data.

Question 5: Did replacement rates, exit rates, and spell lengths vary for FSP subpopulations?

According to SIPP data, participation trends among single mothers are explained predominantly by the exit rate.[1] The replacement rate for single mothers stayed relatively constant during the 1990s. On the other hand, the exit rate was low during the growth of the early 1990s and was high during the declines of the late 1990s. Thus, compared with the rest of the FSP population, single mothers tended to enter the program at a more stable rate but the length of time they participated varied more. According to SIPP data, the exit rate explained 57.6 percent of single mother caseload trends in the early 1990s and 63.6 percent in the late 1990s.

Compared with other subgroups, single mothers had relatively long participation spells. The median spell for the entire period was 11 months, which reflects a decline from 13 months in the early 1990s to 8 months in the late 1990s.

Somewhat surprisingly, the replacement rate for noncitizens did not decline after the eligibility restrictions of PRWORA. The replacement rate for noncitizens in the 1996 to 1999 period (4.7 percent) was almost the same level as in the 1990 to 1993 period (4.9 percent). The length of participation among noncitizens did change, however. The exit rate increased from 3.8 percent in the early 1990s to 5.3 percent in the late 1990s, and the median participation spell fell from 12 months to 8 months among this population.

Another group with eligibility restrictions is the group composed of able-bodied adults without dependents (ABAWDs). In 1996, welfare reform subjected ABAWDs to time-limited food stamp participation (unless they were meeting work requirements, ABAWDs could receive no more than three months of FSP benefits). The replacement rate for ABAWDs fell from 13.3 percent in the early 1990s to 10.1 percent in the late 1990s, suggesting that ABAWDs potentially were deterred from entering the FSP. The exit rate for this population increased somewhat from 10.5 percent in the early 1990s to 11.8 percent in the late 1990s. ABAWDs had the shortest participation spells of all subgroups examined, with half of all ABAWDs exiting by the end of their fourth month and three-fourths exiting by the end of their ninth month. Despite time limits

[1] Subgroup analysis is conducted on SIPP data only. Subgroup analysis is not possible in the FSPQC because estimates are derived from repeat cross-section analysis. As a result, we cannot distinguish changes in status of existing caseload households (e.g., from non-working poor to working poor) from new entrant households.

imposed through PRWORA, the short ABAWD participation spells remained relatively constant during the 1990s. This may reflect the fact that able-bodied adults always tended to have short participation spells, even without time limits.

Caseload trends for the elderly are driven more by entry patterns than exit patterns—the exit rate among the elderly remained between 2.5 and 2.7 percent over the 1990s. Compared with other groups, the elderly had the longest participation spells. Among all new entrant elderly individuals during the 1990s, half had spells of 15 months or longer. Spells were longest during the early 1990s, when half of the elderly had spells of 20 months or longer. Participation spells for the elderly experienced the sharpest decline among all of the subgroups, with the median falling to 12 months in the late 1990s.

Conclusion

To conclude, caseload changes appear to be driven by changes in both the rate individuals entered the program and the length of time that they stay on the program. The caseload growth period of the early 1990s was driven predominantly by an increase in the rate individuals entered the program; the caseload decline of the late 1990s was driven predominantly by a shortening of the length of time individuals participated. Throughout the 1990s, about two-thirds of new entrants exit the program within one year. Participation spells for those participating for more than one year shortened over the 1990s, and there is some evidence that participation spells for those participating under one year also shortened. Among subgroups, single-mothers tended to enter at a constant rate but responded to economic and policy changes through changes in spell length. A similar pattern was observed for noncitizens. Participation spells for ABAWDs, who have always had short participation spells, appear to have been unaffected by time limits imposed in the 1990s.

I. INTRODUCTION

During the 1990s, the Food Stamp Program (FSP) caseload experienced substantial growth, followed by an equally substantial decline. In the four years between 1990 and the caseload peak in 1994, the FSP caseload grew by almost 9 million individuals, an increase of over 44 percent (Figure 1). Monthly growth rates were largest before 1992, when the caseload grew at an average of over 1 percent per month (Figure 2). Then, between 1994 and 2001, the caseload decreased by more than 12 million people. Caseload declines were sharpest in 1997, when the number of participants decreased by an average of more than 1 percent per month; the caseload fell by 12.5 percent that year.

Researchers and policymakers have thoroughly examined the factors that influence FSP caseload changes. Economic conditions have a significant effect on caseload size. The economic recession of the early 1990s drove much of the increase in FSP participation during that period, while the strong economic growth of the late 1990s is credited with causing much of the decline. Though having a smaller overall impact on caseload size, changes in public policy also are responsible for caseload trends. Policies to increase participation rates in the early 1990s led to larger caseloads, while welfare reform in the late 1990s led to smaller caseloads.

Despite a general agreement about which factors affect caseload size, little is known on how these factors influence participation decisions. The confusion arises because monthly changes in caseload size are a function of the decisions of nonparticipants to enter the program, as well as the decisions of participants to exit (or not exit) the program. If more people enter the program than exit from it, the caseload size will increase; if more people exit from the program than enter it, the caseload size will decrease. Different factors can influence entry and exit decisions in different ways, but researchers and policymakers can observe only the net effect.

FIGURE 1
FSP PARTICIPATION, 1990 - 2002

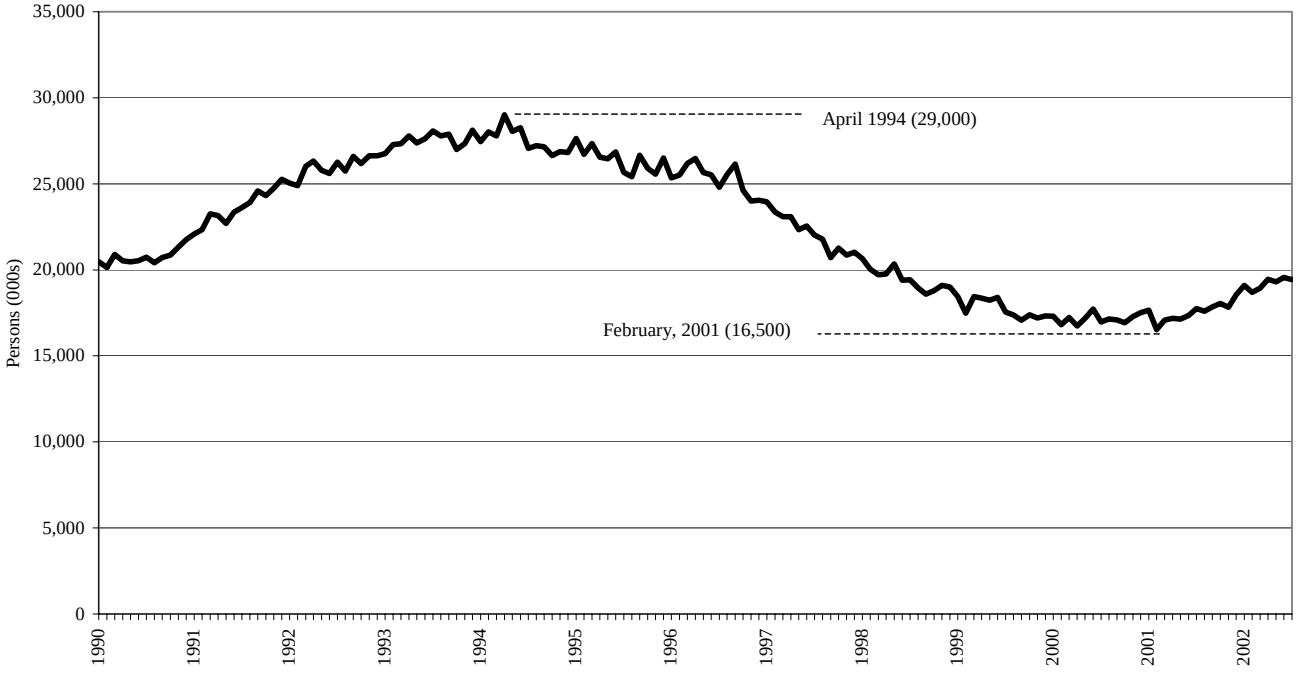
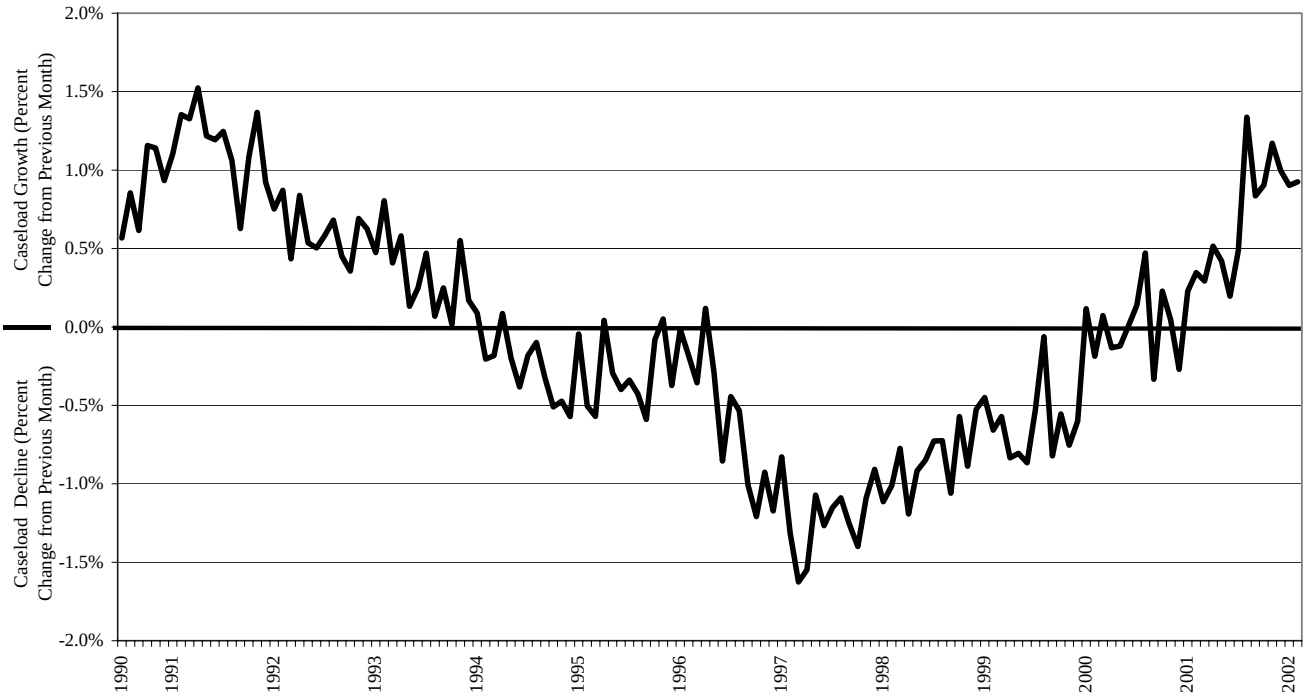


FIGURE 2
MONTHLY CHANGE IN FSP PARTICIPANTS, 1990 - 2002



SOURCE: FSPQC data for years shown (11 month moving average).

This study examines changes in entry and exit rates over time, exploring the extent to which the caseload increases of the early 1990s and the declines later in the decade were caused by changes in entry rates versus changes in exit rates. We also examine trends in the length of time FSP participants received food stamps, and explore how these spell lengths varied among different subgroups of the population.

A. STUDY OBJECTIVES AND RESEARCH QUESTIONS

Research on the FSP often discusses the number of its participants in static terms. For instance, the most recent report on FSP participation from the U.S. Department of Agriculture (USDA) explains that, "in Fiscal Year 2002, [the FSP] served an average of 19 million people per month," and that "over half (51.0 percent) of all food stamp participants were children, the majority of whom lived in single parent households" (Rosso and Faux, 2003). Discussing the FSP in static terms is the best way to obtain a "snapshot" understanding of the size and characteristics of program participants. To understand caseload trends, however, one must consider the program in dynamic terms as well.

While the FSP served an average of 19 million people per month in 2003, the 19.1 million individuals participating in January 2002 were not entirely the same as the 18.7 million individuals participating in February 2002 (Table 1). Some of the participants in January exited the program before February, while other individuals who did not participate in January entered in February. The net effect of this entry and exit was a decline of 411,000 individuals. This suggests that *at least* 400,000 individuals left the program before February 2002, and it is likely that far more than 400,000 left and were replaced by new entrants.

TABLE 1

MONTHLY CHANGE IN FSP PARTICIPANTS, 2002

Month (2002)	Number of Participants (000s)	Monthly Net Change (000s)	Change from January (000s)
January	19,094		
February	18,683	-411	-411
March	18,938	+255	-156
April	19,443	+505	+349
May	19,302	-141	+208
June	19,556	+254	+462
July	19,426	-130	+332

The cumulative effect of monthly exits and new entrants into the FSP explains caseload trends. Between January and July 2002, more individuals entered the program than exited, leading to an overall net increase.

Examining the changes in rates of program entry and exit can help to shed light on why the caseload is increasing or decreasing at any point in time. For this study, we measure entry patterns using the replacement rate (defined as the number of new entrants in a given month, expressed as a percent of the previous month's total caseload), and we measure exit patterns using the exit rate (the number of individuals participating in the previous month but not in the current month, expressed as a percent of the previous month's caseload). A caseload increase could be caused by an increase in the replacement rate, or by a decrease in the rate of exit. In the special case of a "steady state" in which the caseload size is the same from month to month, the number of individuals exiting the program would be replaced by an exact number of new entrants each month. If the caseload were to decline in one month, it would indicate that the number of exiters was greater than the number of new entrants. This could be because the exit rate increased, or because the replacement rate decreased.

A separate measure of food stamp dynamics closely related to entry/replacement rates and exit rates is participation spell length. Some individuals who enter the FSP use the program as a short-term safety net, exiting in a matter of months. Other individuals stay in the program longer, receiving benefits for years. If individuals tend to stay in the program longer, the caseload will rise, all else remaining equal (in other words, the exit rate will decrease). Likewise, if individuals tend to stay on the program for shorter periods of time, the caseload will fall, all else being equal. Examining patterns in spell lengths can be equally useful in understanding caseload dynamics.

The objective of this study is to better understand recent trends in entry and exit into the FSP. The five research questions addressed in this study are:

1. How did growth rates, replacement rates, and exit rates change over the course of the 1990s?
2. Are the changes in the growth rates explained by changes in the replacement rate, changes in the exit rate, or both?
3. How long did individual FSP participation spells tend to last?
4. Have FSP spell lengths changed over time?
5. Did replacement rates, exit rates, and spell lengths vary for FSP subpopulations, including the elderly, able-bodied adults, single mothers, and the working poor?

B. SOURCES OF DATA

We use two sources of data in this analysis: the Food Stamp Program Quality Control (FSPPQC) database and the Survey of Income and Program Participation (SIPP). The FSPQC data are useful because they contain a large sample of FSP participants. However, the FSPQC is not a longitudinal database, and unlike the SIPP, program exits cannot be directly observed. Table 2 compares the advantages and disadvantages of using the separate data sources for this analysis.

The separate disadvantages of the two data sets can lead to questions about the accuracy of the results. For this reason, we compare estimates between the two data sets. When both data sets lead us to a similar conclusion about participation patterns, we have increased confidence in the findings. When estimates differ, however, it is not always clear which estimates are more reliable. The remainder of this section describes the FSPQC and SIPP data sets.

1. FSPQC

The FSPQC is an administrative database compiled annually from an ongoing review of active FSP cases. The FSPQC is based on probability samples constructed within each of the 50 states and the District of Columbia.[2] Because the purpose of the FSPQC is to determine whether each sampled household is eligible and is receiving the correct benefit amount, the database contains extensive information on household eligibility characteristics, including income sources, demographic characteristics and, most important for this analysis, the month that the household entered the FSP.

Each state's independent monthly sample of food stamp cases generally is proportionate to the size of the monthly participating caseload. Using weights designed to match the administrative participation totals, national estimates of the FSP population can be constructed each month. Our analysis uses FSPQC files from fiscal years 1990 through 2002. Monthly sample sizes range from 3,600 to 5,600 FSP households.[3]

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[2] Data on Guam and the Virgin Islands also are collected but were not examined in this study.

[3] Annual sample sizes range from 47,000 households in FY 2001 to 65,000 households in FY 1990.

TABLE 2

ADVANTAGES AND DISADVANTAGES OF FSPQC AND SIPP DATA

Data Source	Advantages	Disadvantages
FSPQC	Large sample of FSP participants allows for analysis of monthly patterns	Caseload exits cannot be observed directly, and estimates are influenced by sampling variability in caseload entry estimates
	Consistent collection of data allows for analysis over many years	New entrant households are underrepresented in sample
SIPP	Household entry into and exit from FSP self-reported	Inconsistencies between 1996 panel and previous panels
		Underreporting of FSP receipt may bias results

While the FSPQC data reflect a monthly cross section of the Food Stamp caseload, the data also can be used to deduce longitudinal patterns. Repeat cross-section analysis can be used to examine caseload changes from month to month and derive the number of individuals that exit based on the number of new entrants and on the total caseload change (Wilde, 2001). In a given month (Month A) the number of new entrants is simply the number of participants in their first month of FSP receipt (the Month A new entrant cohort). The change between the estimated number of people in their first month of receipt in Month A and the estimated number in their second month of receipt in the subsequent month (Month B) is the number of individuals of the Month A new entrant cohort that exit after one month of participation. The change in the estimated number in their second month (Month B) compared to their third month (Month C) is the number that exit after two months. Repeating this for all possible spell durations and for all entry cohorts yields estimates of caseload dynamics.

Estimates of replacement and exit rates in FSPQC are subject to sampling variability because they are based on the distribution of characteristics in each month's sample. In the FSPQC data, the total number of participants each month is not subject to sampling variability; it is equal to the number of participants known through the administrative totals. However, each month, the proportion of participants in their first, second, third, and subsequent months of participation is subject to sampling variability. Thus, if there are 4,000 total fewer participating households between Month A and Month B, and we estimate that there are 2,000 new entrant households, then we would estimate that there are 6,000 exiting households. The 4,000 net change in participation is not subject to sampling variability, but the estimate of 2,000 new entrants, and hence the estimate of 6,000 exiters, are subject to sampling variability.

While the FSPQC data are intended to be representative of the U.S. FSP population, they do not appear to be representative with respect to entry rates. Each month, there appear to be too few individuals in their first and second months of FSP receipt, based on the number of participants in subsequent months. For example, the number of individuals in their second month of FSP participation in March 1996 was 85.5 percent *greater than* the number in their first month in February 1996 (Table 3). If the FSPQC sample were representative, then the number in their second month of receipt in March would likely be less than or approximately equal to the number in their first month in February.[4] In many months, there is a similar undercount of

[4] Since the February and March estimates of the number in their first and second month of participation were based on independently drawn random FSPQC samples, sampling variability could lead to a larger number in the second month of participation in March than in the first month of participation in February. However, given the size of the FSPQC samples, it is extremely unlikely that sampling variability alone would lead to the 85.5 percent increase that was observed over this period.

TABLE 3

EXAMPLE OF FSPQC UNDERSAMPLE OF INDIVIDUALS IN FIRST AND SECOND MONTH OF RECEIPT: FEBRUARY 1996

	Individuals					
	First Month, February 1996	Second Month, March 1996	Third Month, April 1996	Fourth Month, May 1996	Fifth Month, June 1996	Sixth Month, July 1996
Original	808,392	1,499,438	2,030,031	1,480,563	1,088,369	928,740
% Change		85.5	35.4	-27.1	-26.5	-14.7
Adjusted	2,098,190	1,928,237	1,777,835	1,296,628	953,158	813,360
% Change		-8.1	-7.8	-27.1	-26.5	-14.7

Source: 1996 FSPQC data.

people in their second month of participation. For example, the number of individuals in their third month of participation April 1996 was 35.4 percent greater than the number in their second month in March.

The reason for the undercount of individuals in their first and second months of FSP participation is unclear. The undercount occurs in almost all months and, while the magnitude of the undercount varies, it occurs throughout the study's observation period. Our theory is that there are some types of FSP cases that take longer to process. Since the FSPQC sample is pulled from case records, unprocessed records would not be pulled for this sample. In other words, it may be more accurate to think of the FSPQC sample as representative of all FSPQC cases whose records are completely entered into a state's case records system at the time the sample is selected, as opposed to being representative of all FSPQC cases receiving benefits.

For the purposes of estimating the length of participation spells, we used a weighting adjustment to correct for the undercount of individuals in their first and second months of FSP

participation. We assumed that in each month, the cases sampled in their third month of FSP participation are representative of all FSP cases in their third month. Using exit rates computed in the SIPP for all individuals entering the FSP between 1990 and 1999, we assumed that 8.1 percent of individuals exited between their first and second months of participation and that 7.8 percent exited between their second and third months of participation.[5] Thus, we calculated the number of individuals in their second month of participation as:

$$p^2_{t+1} = p^3_{t+2}/(1-.078) \qquad (1)$$

Where,

p^2_{t+1} = the number of individuals in their second month of participation in month *t+1*
p^3_{t+2} = the number of individuals in their third month of participation in month *t+2*

We then calculated the number of individuals in their first month of participation as:

$$p^1_t = p^2_{t+1}/(1-.081) \qquad (2)$$

Where,

p^1_t = the number of individuals in their first month of participation in month *t*

We rescaled the weights for all FSP participants so that the totals still summed to the same population targets (the total number of households receiving FSP benefits each month). Rescale factors were computed separately for each cohort of FSP entrants (where one cohort includes the individuals that begin their participation spell in month *t*, their second month in month *t+1*, their third month in month *t+2*, etc.).

Given this methodology, which assumes a constant exit rate over time for cases in their the first and second month of participation, fluctuations in FSPQC-based replacement and exit rates actually measure fluctuations in the number of cases in at least their third month of FSP

[5] See Table 16 in Chapter III.

participation. While it is possible that the exit rates for first- and second-month participants would change over time, we feel that these changes would be small.[6]

2. SIPP

The SIPP is a multipanel longitudinal survey of households conducted by the U.S. Bureau of the Census. The SIPP collects demographic and socioeconomic information on individuals over periods as long as 48 months to provide detailed monthly measures of household composition, labor force behavior, income, and program participation. The SIPP sample is nationally representative and includes an oversample of low-income households.

For this analysis, we used all five of the SIPP panels that started in the 1990s (the 1990, 1991, 1992, 1993, and 1996 panels). Table 4 presents basic reference period and sample size information for each panel.

Each SIPP panel consists of multiple interview waves that are four months apart. During each interview, respondents are queried about their income and program participation status during the previous four months. Respondents also are queried about their program participation activities prior to the start of the panel. This information can be combined to track the FSP participation patterns of each household over multiple years. Sample weights are used to construct national estimates of participation patterns.

For the 1990 through 1993 SIPP panels, the Census Bureau used the longitudinal nature of the data to impute missing information for many individuals. If, for instance, an individual missed one wave of SIPP interviews, but participated in the previous and subsequent waves,

[6] Estimates of the *levels* of replacement and exit rates are sensitive to the assumed exit rates for first- and second-month participants. However, because the assumptions are based on the best available data, and because, in general, the assumptions yield a replacement rate that is above the exit rate during periods of FSP growth and below during periods of decline, we feel these are the most defensible assumptions.

TABLE 4

SIPP PANEL INFORMATION

Panel	Sample Size[a]	No. of Waves	Reference Period	
			Start	End
1990	61,900	8	January 1990	August 1992
1991	40,800	8	January 1991	August 1993
1992	56,300	10	January 1992	April 1995
1993	56,800	9	January 1993	December 1995
1996	95,400	12	January 1996	December 1999

[a]Number of original sample members (people) in Wave 1.

missing data would be imputed based on reported data in the adjacent waves. For the 1996 panel, the Census Bureau reduced the number of variables for which these longitudinal edits were constructed. We developed our own longitudinal edits for the 1996 panel.

Our analysis uses data from all five SIPP panels active during the 1990s. In months where the panels overlap, we used data from all active panels and adjusted weights according to the Census Bureau's recommended adjustments (U.S. Department of Commerce, 2001). We used the data from the longitudinal panel files (which, for the 1990 through 1993 panels include longitudinal edits of key data) and monthly weights obtained from the core-wave files. Monthly weights are assigned to all individuals responding to the survey for a given month, and the weights sum to the U.S. population that month. This allows us to use more SIPP observations since, unlike longitudinal weights, monthly weights are assigned to people regardless of whether they are absent from the survey in other months. Variation in monthly estimates can be explained in part by variation in a household's monthly weight over time.

In comparing the 1996 panel with previous panels, we discovered that FSP entry and exit in the 1996 panel was significantly more volatile than those of earlier panels. In the 1996 panel,

unadjusted replacement and exit rates were uniformly higher between one and two percentage points. (See Appendix A for more details.) It is unclear what caused the increase in volatility. For the analysis presented in this report, which relies on changes in entry and exit rates over time, we needed to remove the one-time shift in volatility. To do this, we adjusted the 1996 SIPP-based rates downward by our estimate of the shift in volatility. In the end, it turns out that some of the estimates produced in this report were extremely sensitive to our estimate of the size of this shift. This sensitivity is discussed more in Chapter II.

C. PREVIOUS RESEARCH

Gleason et al. (1998) use data from the 1991 SIPP panel (covering 1991 and 1992) to calculate FSP-participation spell dynamics. They estimate that among all households that enter the FSP at some point in time, most exit the program relatively quickly. Over 50 percent of households exit in or before nine months of participation. However, this does not mean that 50 percent of all individuals participating at a given point in time will have participation spells of nine months or less. In a given month, the FSP consists of not only those short-term spells (lasting only several months) that began within the last several months, but also it includes all long-term spells that started within the last several years. Gleason et al. examined all households participating in February 1991 and determined that 50 percent were in the middle of a participation spell lasting more than 96 months (8 years).

Table 5 presents the median participation spells of all FSP participants and of participants in key subgroups as estimated by Gleason et al. Estimates for the entry cohort reflect the participation patterns of all individuals that entered the FSP during the 1991 SIPP panel. Estimates for the cross-sectional cohort reflect the participation patterns of all individuals participating in February 1991 (subgroup spell lengths were not estimated for the cross-sectional cohort).

TABLE 5

DURATION OF PARTICIPATION SPELLS IN THE EARLY 1990s

FSP Population	Entry Cohort[a] Median Spell Length (Months)	Cross-Sectional Cohort[b] Median Spell Length (Months)
Total FSP	9	>96
Individuals in households with:		
Pure elderly/disabled	12	n.a.
Female head and children	19	n.a.
Noncitizens	8	n.a.
Able-bodied adults, no children	4	n.a.
Income below poverty	13	n.a.
Black or Hispanic household head	12	n.a.
White or other household head	8	n.a.

Source: Gleason et al., 1998 (based on 1991 SIPP Panel).

[a]Entry cohort includes all individuals who enter the FSP during the analysis period.

[b]Cross-sectional cohort includes all individuals participating in February 1991.

Gleason et al. concluded that the increase in the FSP caseload between the late 1980s and early 1990s was driven by an increase in the average spell length (that is, a decrease in the exit rate) as opposed to an increase in the entry rate. The median participation spell length for new entrants—nine months—was longer than the estimate by Burstein (1993) for the late 1980s—six months. Similarly, Gleason et al. found that the fraction of food stamp entrants who ended up staying in the program for at least two years increased from one-fifth to one-third between the late 1980s and the early 1990s. The rate at which non-participants entered the FSP remained relatively steady during this period.

These findings are consistent with other studies. Martini and Allin (1993) found that the percentage of FSP participants with spells longer than two years was greater among those who

entered the program in the early 1990s than among those who entered in the late 1980s. Bartlett et al. (1995) estimated that the median participation spell in the early 1990s was eight months.

Gleason et al. examined the determinants of FSP entry and exit and concluded that economic circumstances and household structure were the most important factors. In particular, the authors found that:

- The most significant trigger event for entry into the FSP was a decrease in household earnings.
- Individuals who were working when they entered the FSP participated for shorter periods of time.
- For individuals who were not working, the longer they were out of work, the longer they participated in the FSP.
- FSP participants receiving cash welfare tended to participate longer than other FSP participants.
- Food stamp recipients in female-headed households with children remained on the program longer than other recipients.

Wilde (2001) conducted a repeat cross-section analysis of FSPQC data from 1990 to 1999 to examine trends in FSP replacement and exit rates. He estimated that the median spell length of new entrants was 7 months, and that that the proportion of the caseload in the midst of a spell exceeding 24 months ranged from about 37 percent in 1990 to 53 percent in 1999. In contrast with Gleason et al., Wilde attributed changes in the caseload trends of the 1990s to changes in the entry rate, as opposed to changes in the exit rate (i.e., participation spell length).

A key goal of this study is to update the estimates of the length of participation spells using both SIPP and FSPQC data. Using both sets of data, we estimate median spell lengths for both entry and cross-sectional cohorts, and for the entire FSP as well as key subgroups.

D. OUTLINE FOR REMAINDER OF REPORT

Chapter II of this report examines FSP replacement and exit rates. Using both FSPQC- and SIPP-based estimates, we explore the degree to which caseload changes in the 1990s were driven by changes in the replacement rate versus changes in the exit rate. Chapter III examines the length of time FSP participants take part in the program. Again, estimates are constructed using both FSPQC and SIPP data. In Chapter IV, we examine what conclusions we can draw from the FSPQC- and SIPP-based analysis.

II. FSP RATES OF ENTRY AND EXIT

To analyze trends in FSP entry and exit, we computed monthly replacement rates and exit rates. Replacement rates reflect the number of individuals entering the program relative to the previous month's caseload. Exit rates reflect the number of individuals leaving the program as a percentage of the previous month's caseload. Formally, the definitions of these rates are:

Replacement Rate (r_t): Number of new entrants *e* in month *t* divided by total participants *p* in month *t-1*

$$r_t = e_t / p_{t-1} \qquad (3)$$

Exit Rate (n_t): Number of exiters *x* in month *t* (i.e., participants in month *t-1* not participating in month *t*) divided by total participants *p* in month *t-1*

$$n_t = x_t / p_{t-1} \qquad (4)$$

Combined, these rates reveal how the caseload changes over time. In each month *t*, the total number of participants *p* can be calculated as:

$$p_t = p_{t-1} - x_t + e_t \qquad (5)$$

And the growth rate can be computed as:

$$g_t = r_t - n_t \qquad (6)$$

In this chapter, estimates derived from the FSPQC and SIPP data are discussed separately.

A. RESULTS FROM FSPQC-BASED ANALYSIS

The FSPQC data identify each household's date of entry into the FSP. Therefore, in each month of FSPQC data, we can compute an estimate of new entrants—those individuals who

began receiving food stamps that month.[7] The number of new entrants in a given month, divided by the previous month's total caseload size, is the replacement rate for that month.

Computing the exit rate in FSPQC data is more difficult. Because the FSPQC data do not provide estimates of non-FSP participants, we cannot directly observe the number of individuals that exit each month. Instead, we rearrange equation (5) to compute the number of exiters as:

$$x_t = p_{t-1} + e_t - p_t \qquad (7)$$

As a result of this computation, any errors in estimating replacement rates in FSPQC will also affect exit rates.

For this analysis, we computed average annual growth, replacement, and exit rates for each year from 1990 to 2002. We examined these rates for four key periods of caseload change, each about 3 years in duration and reflecting different stages of the caseload growth cycle:

1. ***Caseload Growth I***: Between August 1990 and July 1993, the number of individuals participating in the program increased by more than 37 percent.
2. ***Caseload Decline I***: Between August 1993 and July 1996, the number of individuals participating in the program declined by 14 percent.
3. ***Caseload Decline II***: Between August 1996 and November 1999, the number of individuals participating in the program declined by more than 25 percent.
4. ***Caseload Growth II***: After December 1999, the FSP caseload began growing again, increasing almost 15 percent by June 2002.

Growth rates and replacement rates were highest during the first caseload growth period in the early 1990s (see Table 6 and Figure 3). In an average month of this period, 7.5 percent of the previous month's caseload was replaced by new entrants, and 6.7 percent of the previous

[7] As discussed in the previous chapter, the number of new entrants is not representative, but we make adjustments to improve the estimate of new entrants each month.

TABLE 6

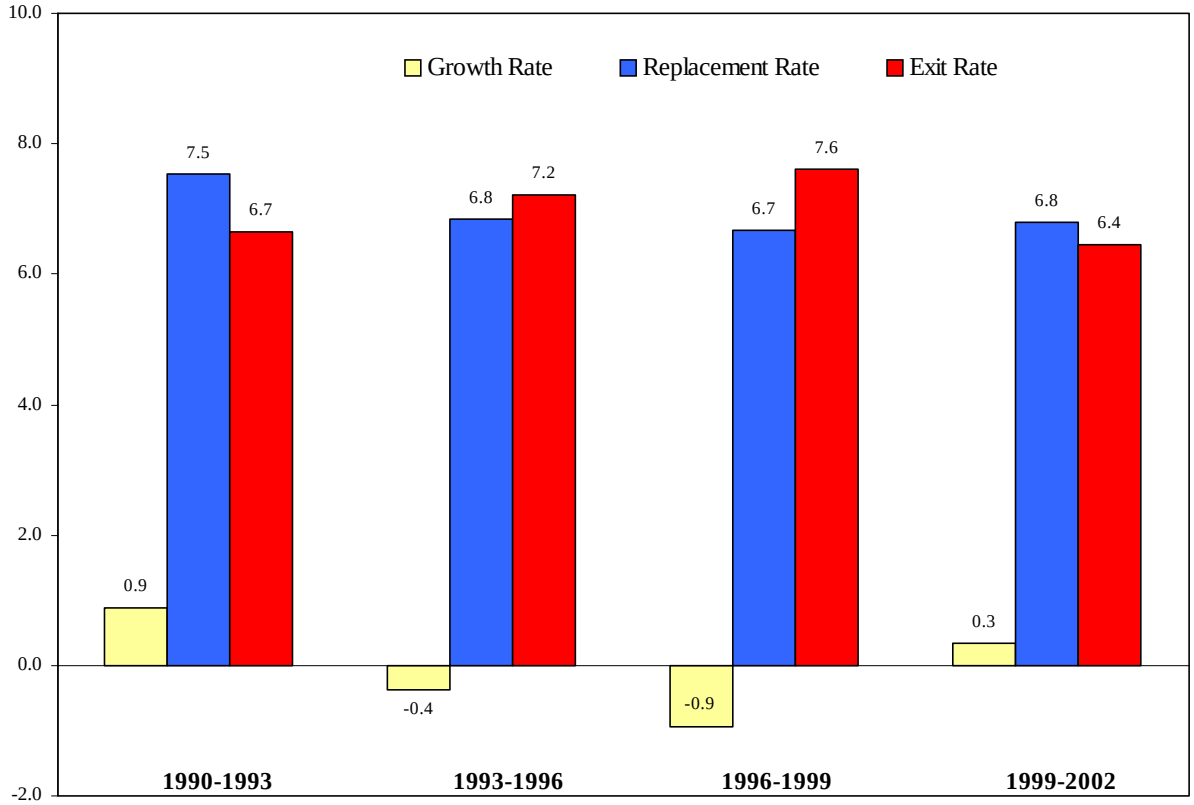
AVERAGE MONTHLY FSPQC-BASED GROWTH, REPLACEMENT, AND EXIT RATES, 1990-2002

Period	Average Monthly Growth Rate	Average Monthly Replacement Rate	Average Monthly Exit Rate
Caseload Growth I: 1990-1993			
August 1990 – July 1991	1.4	8.3	6.9
August 1991 – July 1992	0.5	7.3	6.8
August 1992 – July 1993	0.8	7.0	6.2
Overall	*0.9*	*7.5*	*6.7*
Caseload Decline I: 1993-1996			
August 1993 – July 1994	-0.3	7.1	7.4
August 1994 – July 1995	-0.5	6.4	6.9
August 1995 – July 1996	-0.2	7.0	7.3
Overall	*-0.4*	*6.8*	*7.2*
Caseload Decline II: 1996-1999			
August 1996 – July 1997	-1.3	6.5	7.7
August 1997 – July 1998	-1.1	6.4	7.5
August 1998 – October 1999	-0.6	7.0	7.6
Overall	*-0.9*	*6.7*	*7.6*
Caseload Growth II: 1999-2002			
November 1999-October 2000	0.0	6.6	6.6
November 2000-October 2001	0.4	7.0	6.6
November 2001-June 2002	0.9	6.8	6.0
Overall	*0.3*	*6.8*	*6.4*
Overall 1990-1999	-0.2	7.0	7.2
Overall 1990-2002	0.0	7.0	7.0

Source: FSPQC data for years shown.

FIGURE 3

AVERAGE MONTHLY FSPQC-BASED GROWTH, REPLACEMENT, AND EXIT RATES, 1990-2002



SOURCE: FSPQC data for years shown

month's caseload exited the program. This led to an average monthly growth rate of 0.9 percent. The growth rates were highest in the 1991-1992 period.

During the caseload decline between 1993 and 1996, the average monthly replacement rate fell to 6.8 percent, while the average monthly exit rate increased to 7.2 percent, and the caseload declined by an average of 0.4 percent per month. In the late 1990s, during the second period of caseload decline, the average monthly replacement rate was slightly lower at 6.7 percent, while the exit rate climbed to 7.6 percent. In this period, the caseload declined by an average of 0.9 percent each month.

In 2000, the caseload began to climb again. During the second period of caseload growth, the average monthly replacement stayed about the same as in previous years—6.8 percent—but the average monthly exit rate declined to 6.4 percent, yielding an average monthly growth rate of 0.3 percent.

To better understand caseload dynamics within each of the four analysis periods, we present the trends in replacement and exit rates in Figure 4. The trend lines are estimated through an ordinary least squares regression of the replacement and exit rates for each month. This reflects the within-period direction of the replacement and exit rates and it helps to illustrate the individual roles of entry and exit patterns in explaining caseload trends.

1. ***Caseload Growth I***: During this period, the replacement rates fell sharply, approaching the exit rates. This contributed to the tapering of caseload growth at the end of the period. It should be noted that the exit rates also fell over this period, thus contributing to the overall caseload growth.

2. ***Caseload Decline I***: Replacement and exit rates were similar over this period. Exit rates remained relatively constant. The slight decline in replacement rates likely explains most of the caseload decline over this period.

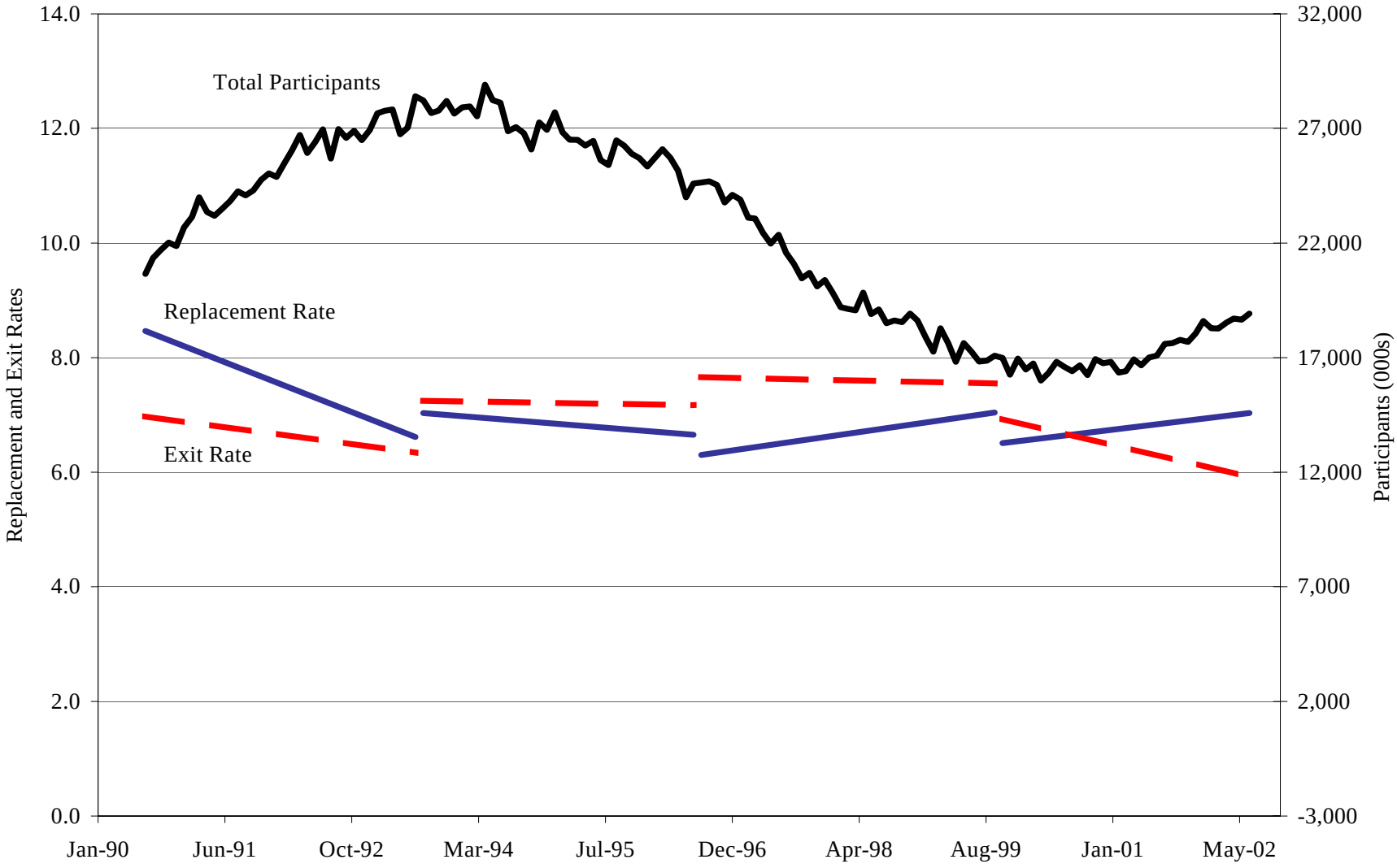
3. ***Caseload Decline II***: During the late 1990s, exit rates were substantially higher than replacement rates. The exit rates were higher than at any other point in the 1990s and remained relatively constant over the period. Replacement rates started at their lowest point during the 1990s, suggesting that the caseload declines were driven both by higher rates of exit and lower rates of entry.

4. ***Caseload Growth II***: The most recent period of caseload growth appeared to be driven both by increases in replacement rates and decreases in exit rates.

All of this information suggests that a combination of replacement and exit rate factors explained the caseload trends, with replacement rates playing a dominant role in the early 1990s and exit rates playing a dominant role in the late 1990s. To further understand how entry and

FIGURE 4

FSPQC-BASED TRENDS IN REPLACEMENT AND EXIT RATES, 1990-2002



exit patterns affect caseload changes from one period to the next, we decomposed changes in the average growth rates across these four periods. Given that the growth rate (g_t) for a given period is equal to the replacement rate (r_t) minus the exit rate (n_t), we can decompose the proportion of a change in the growth rate between periods *t* and *t+1* that is due to a change in the replacement rate (r'_{t+1}) and the proportion due to a change in the exit rate (n'_{t+1}) as:

$$r'_{t+1} = (r_{t+1} - r_t) / (g_{t+1} - g_t) * 100 \qquad (7)$$

$$n'_{t+1} = (-n_{t+1} + n_t) / (g_{t+1} - g_t) * 100 \qquad (8)$$

The results of this decomposition reflect the relative importance of replacement rate changes and exit rate changes in explaining changes in the growth rate from one period to another. For example, between 1990 and 1993, the FSP caseload grew at an average rate of 0.88 percent per month (Table 7). Between 1993 and 1996, the caseload fell at an average of -0.36 percent per month. The difference between these two growth rates was about –1.25 percentage points. Average replacement rates fell by –0.70 percentage points between these two periods, accounting for 55.7 percent of the change in growth rates. The average exit rate increased by 0.55 percentage points, accounting for 44.3 percent of the change in growth rates. This suggests that a decreasing replacement rate had somewhat more influence in explaining the shift from a period of growth to a period of slight decline than did an increasing exit rate.

The decomposition estimates presented in Table 7 support the finding that replacement rate and exit rate changes both were responsible for the shift from the growth in the early 1990s to the declines in the mid- and late 1990s. In other words, caseloads stopped growing and started

TABLE 7

DECOMPOSITION OF CHANGES IN FSPQC-BASED CASELOAD GROWTH RATES[a]

	Analysis Periods			
	Growth I to Decline I (90-93 to 93-96)	Decline I to Decline II (93-96 to 96-99)	Decline II to Growth II (96-99 to 99-02)	Growth I to Decline II (90-93 to 96-99)
Average Growth Rates				
First period	0.88	-0.36	-0.93	0.88
Second period	-0.36	-0.93	0.34	-0.93
Change	-1.25	-0.57	1.27	-1.82
Average Replacement Rates				
First period	7.54	6.84	6.67	7.54
Second period	6.84	6.67	6.79	6.67
Change	-0.70	-0.17	0.12	-0.87
Average Exit Rates				
First period	6.66	7.21	7.60	6.66
Second period	7.21	7.60	6.45	7.60
Change	0.55	0.39	-1.15	0.94
Decomposition[b]				
Percent of change in growth rate explained by change in:				
Replacement Rate	**55.7**	**30.3**	**9.0**	**47.8**
Exit Rate	**44.3**	**69.7**	**91.0**	**52.2**

[a]Rates presented in this table are the same as rates in Table 6, except the rates in this table are shown to the second decimal place.
[b]Decomposition percentages are based on rates that have not been rounded; therefore, they may not match the percentages implied by table estimates.

declining because individuals entered at a slower rate and because those participating in the program exited at a faster rate. On the other hand, an increasing exit rate explains over two-thirds of the shift from the slight decline in the mid-1990s to the steep decline in the late 1990s, and a decreasing exit rate explains almost all of the shift from the steep decline in the late 1990s to the growth in the early 2000s.

The change from slight decline to steep decline are particularly policy-relevant because the steep decline followed the sweeping welfare reform changes of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996. During this period, the exit rates were higher than at any other point in the decade, and the shift in exit rates from the previous period explained 70 percent of the change in growth rates. Thus, after PRWORA, caseloads shrank predominantly because individuals exited the program at a faster rate.

B. RESULTS FROM SIPP-BASED ANALYSIS

Our SIPP-based analysis of entry and exit patterns uses the longitudinal aspect of the SIPP data. For each month of the analysis period, we identified the total number of individuals who reported that they were "covered" by food stamps. In SIPP, being covered indicates that someone in the individual's household is authorized to receive food stamps and that the benefits are intended in part to cover that individual. The number of new entrants each month is defined as the number of individuals newly reporting coverage that month. The number of exiters is defined as the number of individuals reporting that they did not receive food stamps the month after reporting that they did receive them.[8]

In identifying entry and exit, we followed the procedure used by Burstein (1993) and Gleason et al. (1998) of "closing up" gaps in participation. In particular, we assumed that sample members received food stamps in a given month if they received food stamps in the previous and subsequent months. While it is possible to have a one-month lapse in FSP

[8] Estimates for October 1995 through December 1995 were based on increasingly small sample sizes as SIPP rotation groups expired. As a result, initial estimates of replacement and exit rates portrayed extremely high volatility for those months. Using a centered moving average, we smoothed entry and exit rates for the October 1995 through January 1996 period.

participation, we believe that most of the one-month gaps in the SIPP data are due to problems with data reporting or editing.

In this analysis, left-censored and right-censored FSP participation spells were not treated as changes in FSP participation status. A left-censored spell occurred when an individual reported FSP coverage in the first month that they entered the SIPP.[9] Similarly, a right-censored spell occurred when an individual reported FSP coverage in their last month of participation in the SIPP sample. Since we did not know whether these individuals received food stamps in the subsequent month, they were not treated as FSP exiters.

The 1996 SIPP panel reflected a more volatile FSP than did earlier panels. Replacement and exit rates jumped by between one and two percentage points between the end of the 1994 panel and the start of the 1996 panel, and this difference appears sustained throughout the 1996 panel.[10] To make trends consistent over time, we adjusted all 1996 SIPP-based replacement and exit rates downward. The size of the adjustment was determined by estimating the following model:

$$r_t = \alpha + t\beta + S_t\phi + l_t^r\varphi + p_t\gamma + e \qquad (9)$$

$$x_t = \alpha + t\beta + S_t\phi + l_t^x\varphi + p_t\gamma + e \qquad (10)$$

[9] While SIPP does ask individuals who respond to the first wave of SIPP interviews about recipiency, there are no recipiency history questions for individuals who enter the SIPP sample after the first wave. If an individual who enters the SIPP after the first wave reports FSP participation in their first month, it is not possible to tell if this person is a new FSP entrant. Hence, these individuals are not treated as new entrants.

[10] The reasons for the increased volatility in the 1996 panel are not completely understood. We chose to adjust the 1996 panel downward, versus adjusting earlier panels upward, because other issues with the 1996 SIPP sample led us to question the reliability of the data (see Appendix A for more details). Because our analysis is concerned with trends, which panels are adjusted would not affect the overall conclusions.

where,

r_t	=	the replacement rate in month *t*
x_t	=	the exit rate in month *t*
S_t	=	an array of variables indicating the season in month *t*
l_t	=	the average rate (replacement or exit) in the three months preceding month *t*
p_t	=	a dummy variable identifying rates estimated from the 1996 SIPP panel

These models were estimated over all SIPP-based rates from the caseload peak in August 1993 to the caseload troth in May 1999.[11] The coefficient γ is the estimate of the size of the shift in entry and exit rates, and is equal to 1.8 percentage points for replacement rates and 1.2 percentage points for exit rates.[12] These amounts were subtracted from all 1996 panel estimates.

Table 8 presents the average annual growth rates, replacement rates, and exit rates from 1990 to 1999. Overall, estimates of the number of FSP participants in the SIPP are lower than in the FSPQC, as are estimated replacement and exit rates. The rates are grouped into three separate analysis periods. While the dates used to define these periods were the same as the first three periods examined with FSPQC data, the magnitude of the changes observed across these periods differed slightly from that in the FSPQC.

1. ***Caseload Growth I:*** Between August 1990 and July 1993, the number of individuals participating in the program increased by over 41 percent (compared with 37 percent in the FSPQC).

2. ***Caseload Decline I:*** Between August 1993 and July 1996, the number of individuals participating in the program declined by 8 percent (compared with 14 percent in the FSPQC).

3. ***Caseload Decline II:*** Between August 1996 and October 1999, the number of individuals participating in the program declined by more than 27 percent (compared with 25 percent in the FSPQC).

[11] The peak and troth dates are determined based on SIPP caseload estimates.

[12] Full regression results are presented in Appendix B.

TABLE 8

AVERAGE MONTHLY SIPP-BASED GROWTH, REPLACEMENT, AND EXIT RATES, 1990 THROUGH 1999

Period	Average Monthly Growth Rate	Average Monthly Replacement Rate	Average Monthly Exit Rate
Caseload Growth I: 1990-1993			
August 1990 – July 1991	1.8	5.6	3.8
August 1991 – July 1992	1.3	5.2	3.9
August 1992 – July 1993	1.1	5.0	3.9
Overall	*1.4*	*5.3*	*3.9*
Caseload Decline I: 1993-1996			
August 1993 – July 1994	0.3	4.4	4.1
August 1994 – July 1995	-0.1	4.1	4.2
August 1995 – July 1996	-0.2	4.2	4.4
Overall	*0.0*	*4.2*	*4.2*
Caseload Decline II: 1996-1999			
August 1996 – July 1997	-1.7	3.7	5.4
August 1997 – July 1998	-1.1	3.9	5.0
August 1998 – October 1999	-1.0	3.9	4.9
Overall	*-1.3*	*3.8*	*5.1*
Overall 1990-1999	0.0	4.4	4.4

Source: SIPP data for years shown.

Note: Estimates are adjusted to account for increased volatility of 1996 SIPP panel estimates. See Appendix B for rates based on unadjusted data.

As with replacement and exit rates computed in the FSPQC data, the replacement rates were highest and exit rates lowest during the period of caseload growth in the early 1990s. The average monthly replacement rate during the caseload growth period was 5.3 percent, while the average monthly exit rate was 3.9 percent, yielding an average 1.4 percent increase in the caseload each month. Also similar to FSPQC, the replacement rates were lowest and exit rates highest during the period of steep caseload decline in the late 1990s. During this period, the

average replacement rate was 3.8 percent and the average exit rate was 5.1 percent, yielding an average 1.3 percent decline in the caseload each month. In the 1993 to 1996 period, the caseload grew in the first and declined in the following two, yielding an average monthly growth rate of 0 percent. Figure 5 shows the average rates over each of the three periods.

Figure 6 presents the trends in FSP replacement and exit rates over the three analysis periods. Again, the trend lines are estimated through an ordinary least squares regression. As with the FSPQC, these results suggest that both the replacement and exit rates play a role in driving caseload trends, with the replacement rate changes affecting the caseload growth of the early 1990s and exit rate changes affecting the decline in the late 1990s.

1. ***Caseload Growth I***: As in the FSPQC data, SIPP-based replacement rates were highest at the start of the 1990s, contributing to the strong caseload growth observed during this period. Replacement rates fell over the period of caseload growth. Exit rates in the SIPP data increased slightly over the period of caseload growth. This suggests that the rate at which individuals entered the program played a primary role in explaining caseload growth in the later years of the caseload growth period.

2. ***Caseload Decline I***: Replacement and exit rates were similar over this period, with replacement rates falling slightly and exit rates increasing slightly. The caseload decline likely is explained by both factors.

3. ***Caseload Decline II***: In the caseload decline of the late 1990s, the exit rate jumped substantially higher than in earlier periods while the replacement rate continued on a relatively flat trend. The sharp increase in exit rates likely explains much of the caseload decline over this period, but the low and decreasing replacement rate also contributed.

We estimated the relative importance of replacement rate and exit rate changes in explaining changes in growth rates across these three periods (Table 9). As with FSPQC data, the SIPP data indicate that the shift from caseload growth in the early 1990s to steep caseload decline in the late 1990s was driven by a mix of changes in the replacement and exit rates. Relative to the FSPQC-based estimates, SIPP-based estimates indicate that changes in the replacement rate were

FIGURE 5

AVERAGE MONTHLY SIPP-BASED GROWTH, REPLACEMENT, AND EXIT RATES, 1990-1999

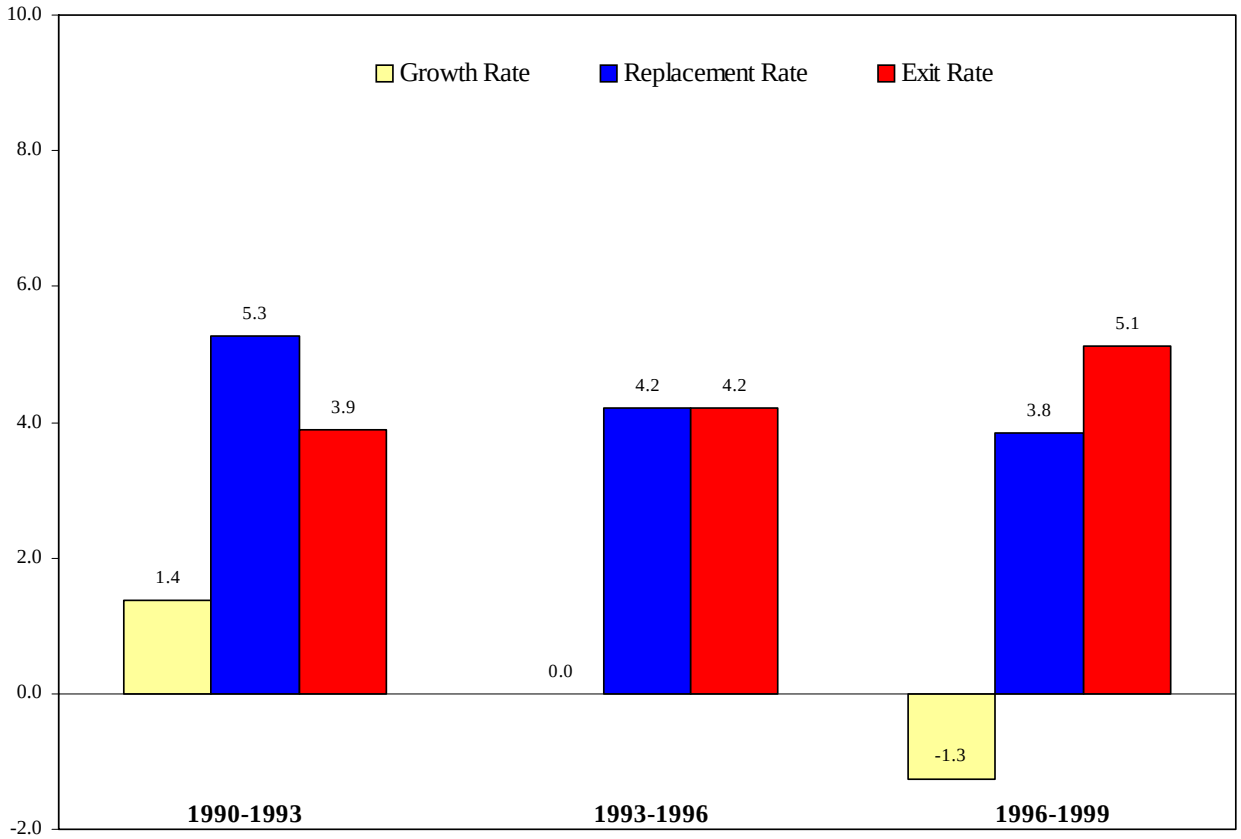


FIGURE 6

SIPP-BASED TRENDS IN REPLACEMENT AND EXIT RATES, 1990-1999

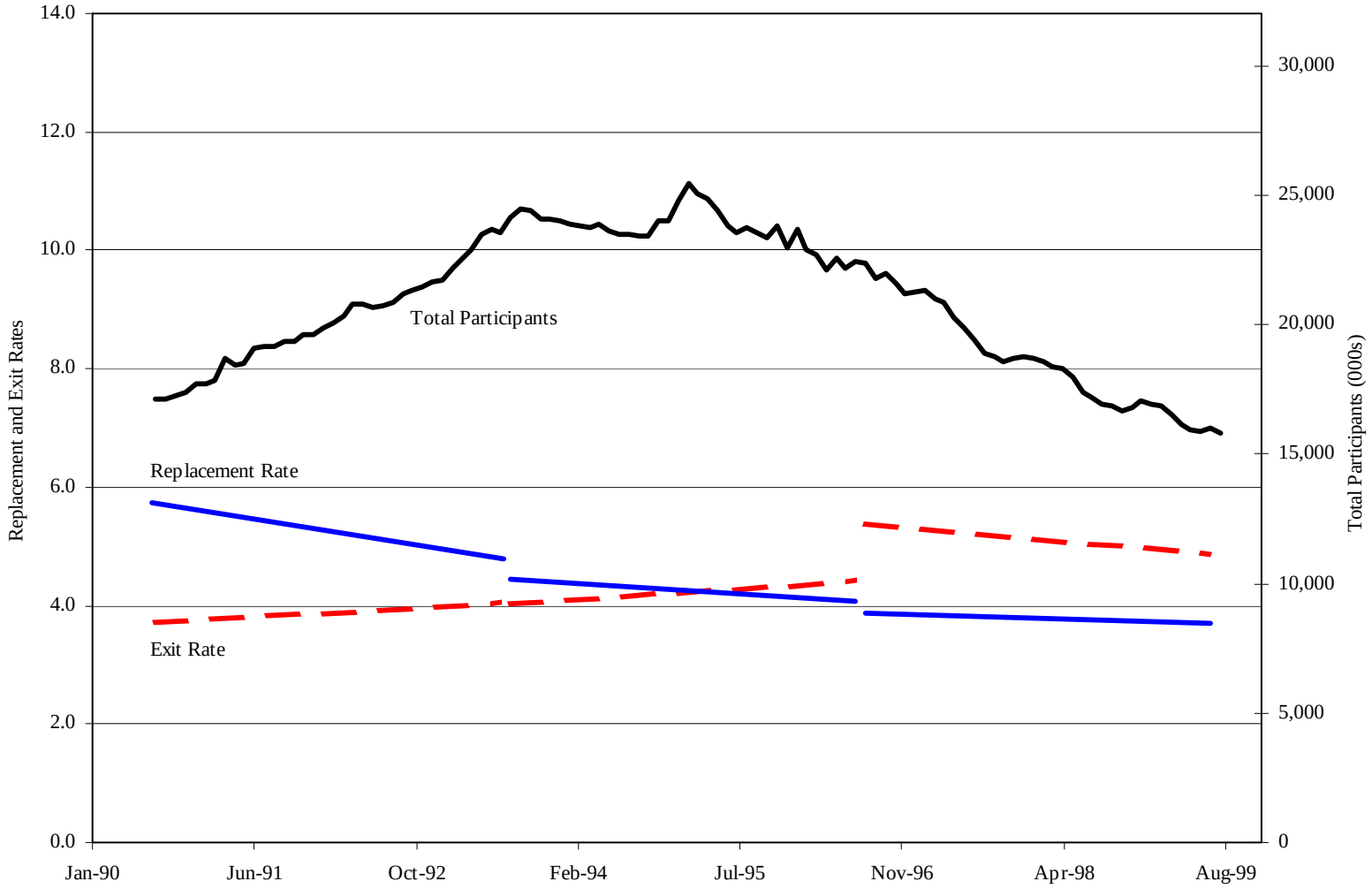


TABLE 9

DECOMPOSITION OF CHANGES IN SIPP-BASED CASELOAD GROWTH RATES[a]

	Analysis Periods		
	Growth I to Decline I (90-93 to 93-96)	Decline I to Decline II (93-96 to 96-99)	Growth I to Decline II (90-93 to 96-99)
Average Growth Rates			
First period	1.38	0.00	1.38
Second period	0.00	-1.27	-1.27
Change	-1.38	-1.27	-2.65
Average Replacement Rates			
First period	5.27	4.20	5.27
Second period	4.20	3.84	3.84
Change	-1.07	-0.36	-1.43
Average Exit Rates			
First period	3.89	4.20	3.89
Second period	4.20	5.11	5.11
Change	0.31	0.91	1.22
Decomposition[b]			
Percent of change in growth rate explained by change in:			
Replacement Rate	**77.2**	**28.2**	**53.8**
Exit Rate	**22.8**	**71.8**	**46.2**

[a]Rates presented in this table are the same as rates in Table 6, except the rates in this table are shown to the second decimal place.
[b]Decomposition percentages are based on rates that have not been rounded; therefore, they may not match the percentages implied by table estimates.

more important in explaining the shift from caseload growth in the early 1990s to the slight caseload decline of the mid-1990s, because exit rates in the SIPP increased during the early 1990s.

The SIPP results are sensitive to the assumption used to correct for the change in FSP entry and exit volatility between the early SIPP panels and the 1996 SIPP panel. Small changes in the

adjustment would lead to large changes in the relative importance of replacement and exit rates in explaining changes in growth rates (Table 10). The current regression-based adjustments subtract 1.8 percentage points from all replacement rates and 1.2 percentage points from all exit rates. Subtracting 2.0 and 1.4 percentage points respectively from the replacement and exit rates leads us to conclude that the replacement rate changes explain 61.3 percent of growth rate changes between the early and late 1990s, compared with 53.8 percent under the basic regression adjustment. It is clear that some adjustment is needed given the fact that results estimated without an adjustment are nonsensical. However, the sensitivity of results to the size of the adjustment implies that the SIPP-based results should be viewed with caution. Until we can better understand why replacement and exit rates increased so drastically in the 1996 panel, we cannot accurately determine the relative roles that replacement and exit rate changes played in driving caseload changes over this period.

C. ENTRY AND EXIT BY SUBGROUP

Differences in entry and exit patterns among various subgroups can inform our understanding of caseload dynamics. We estimated replacement and exit rates for these key subgroups:

- Single mothers
- The elderly
- Noncitizens
- Able-bodied adults without dependents (ABAWDs)

TABLE 10

PERCENT OF GROWTH RATE CHANGE EXPLAINED BY REPLACEMENT RATES FOR VARIOUS ADJUSTMENTS TO 1996 SIPP REPLACEMENT AND EXIT RATES

	Adjustment to 1996 SIPP Replacement and Exit Rates					
	No Adjustment	Regression Adjustment +0.4	Regression Adjustment +0.2	Regression Adjustment	Regression Adjustment -0.2	Regression Adjustment -0.4
Adjustment						
Replacement Rate	0.0	-1.4	-1.6	-1.8	-2.0	-2.2
Exit Rate	0.0	-0.8	-1.0	-1.2	-1.4	-1.8
Percent of growth rate change explained by replacement rate change						
Growth I to Decline I	77.2	77.2	77.2	77.2	77.2	77.2
Decline I to Decline II	-203.6	-3.3	12.5	28.2	44.0	59.8
Growth I to Decline II	-16.1	38.7	46.2	53.8	61.3	68.9

Source: 1990 through 1996 SIPP Panels.

Subgroup estimates are based on SIPP data only.[13] In constructing these estimates, subgroup status was determined in the month of entry for replacement rates and the month of exit

[13] Given that the FSPQC data are not longitudinal, we cannot estimate meaningful entry and exit patterns for subgroups. In the FSPQC data, we can identify individuals' characteristics each month, including the month of entry. However, because we only examine differences in the cross-sectional estimates from month to month, we cannot distinguish exits from the FSP while a member of a subgroup from changes in subgroup status while an FSP participant. Hence, the subgroup exit rates capture both types of changes, and the exit rates also are mitigated by any FSP participants whose status changes into the subgroup population. Moreover, our weighting adjustment used to account for the undersample of individuals in their first month of participation was not constructed with subgroup control totals or target proportions in mind. Hence, the weighting adjustment could lead to biased estimates.

for exit rates.[14] Thus, an FSP participant who turned 60 while receiving food stamps is not considered an elderly new entrant since they were not elderly when they entered the program. Likewise, an ABAWD whose status changes to non-ABAWD but who continues to receive food stamps is not considered an ABAWD that exits.

As with the analysis of replacement and exit rates for all individuals, regression adjustments were needed in the 1996 SIPP panel to account for changes in volatility across panels. The adjustments created for each subgroup are listed in Table 11.[15]

Figure 7 presents the average replacement and exit rates for subgroups in each of the three analysis periods. The results for each subgroup are:

- ***Single Mothers.*** Single mothers had relatively stable average entry rates across the three periods. The average replacement rate was 3.6 percent in the early 1990s and 3.5 percent in the late 1990s. The average exit rate, on the other hand, increased from 2.4 percent in the early 1990s to 4.6 percent in the late 1990s. This suggests that the decline in the number of single mothers participating in the FSP in the late 1990s was driven by higher exit rates (shorter participation spells) among participants.
- ***Elderly.*** Among the elderly, the average exit rate remained relatively constant over the 1990s. However, the replacement rate was cut in half, falling from about 3.1 percent in the early 1990s to 1.5 percent in the late 1990s. As a result of fewer seniors entering the FSP, the elderly caseload declined in the late 1990s.
- ***Noncitizens.*** The average replacement rate for noncitizens was similar during the caseload growth of the early 1990s and the caseload decline of the late 1990s. The average exit rate among noncitizens increased from 3.8 percent in the early 1990s to 5.3 percent in the late 1990s. This suggests that the eligibility restrictions of welfare reform did little to change the rate at which noncitizens entered the program, but may have influenced how long they stayed in the program.

[14] The working poor subgroup is not examined in this section because of difficulties in distinguishing changes in employment status from caseload entry and exit. In Chapter III, we do examine the spell lengths of individuals that were working when the entered the FSP.

[15] As with the results for all individuals, decomposition estimates for subgroups are highly sensitive to these adjustments. As a result, we do not publish decomposition estimates here.

TABLE 11

ADJUSTMENTS TO 1996-BASED REPLACEMENT AND EXIT RATES BY SUBGROUP

	Replacement Rate Adjustment	Exit Rate Adjustment
Total FSP	-1.8	-1.2
Subgroup		
Single mothers	-0.5	-0.2
Elderly	-1.9	-0.9
Noncitizens	-0.5	-1.1
ABAWDs	-2.4	-3.6

- ***ABAWDs.*** As with the working poor, the ABAWD population is relatively small, so replacement and exit rates tend to be higher than those of other subgroups. Average replacement rates decreased from 13.3 percent in the early 1990s to 10.1 percent in the late 1990s. Average exit rates increased from 10.5 percent in the early 1990s to 11.8 percent in the late 1990s. This suggests that declines among ABAWD participants were driven both by decreased entry in the program and faster exit from the program.

In short, among these subgroups, only ABAWDs caseload trends appeared to be affected by a combination of changes in replacement rates and exit rates. Caseload changes for single mothers and noncitizens appeared to be driven by the changes in the exit rate, while caseload changes for the elderly appeared to be driven by changes in the replacement rate.

In addition to examining replacement and exit rates for subgroups, we used SIPP data to examine some of the characteristics of individuals after exiting the FSP. In this analysis, we focused on whether there were changes in the characteristics and experiences of food stamp leavers between the early 1990s—during the period of caseload growth and before PRWORA was passed—and the late 1990s—during the period of caseload decline and after PRWORA was passed. The proportion of individuals exiting the FSP that had earnings did not change substantially over the 1990s (Table 12). Overall, fewer than one-third of people who exited the

FIGURE 7

SIPP-BASED AVERAGE GROWTH, REPLACEMENT, AND EXIT RATES BY SUBGROUP, 1990-1999

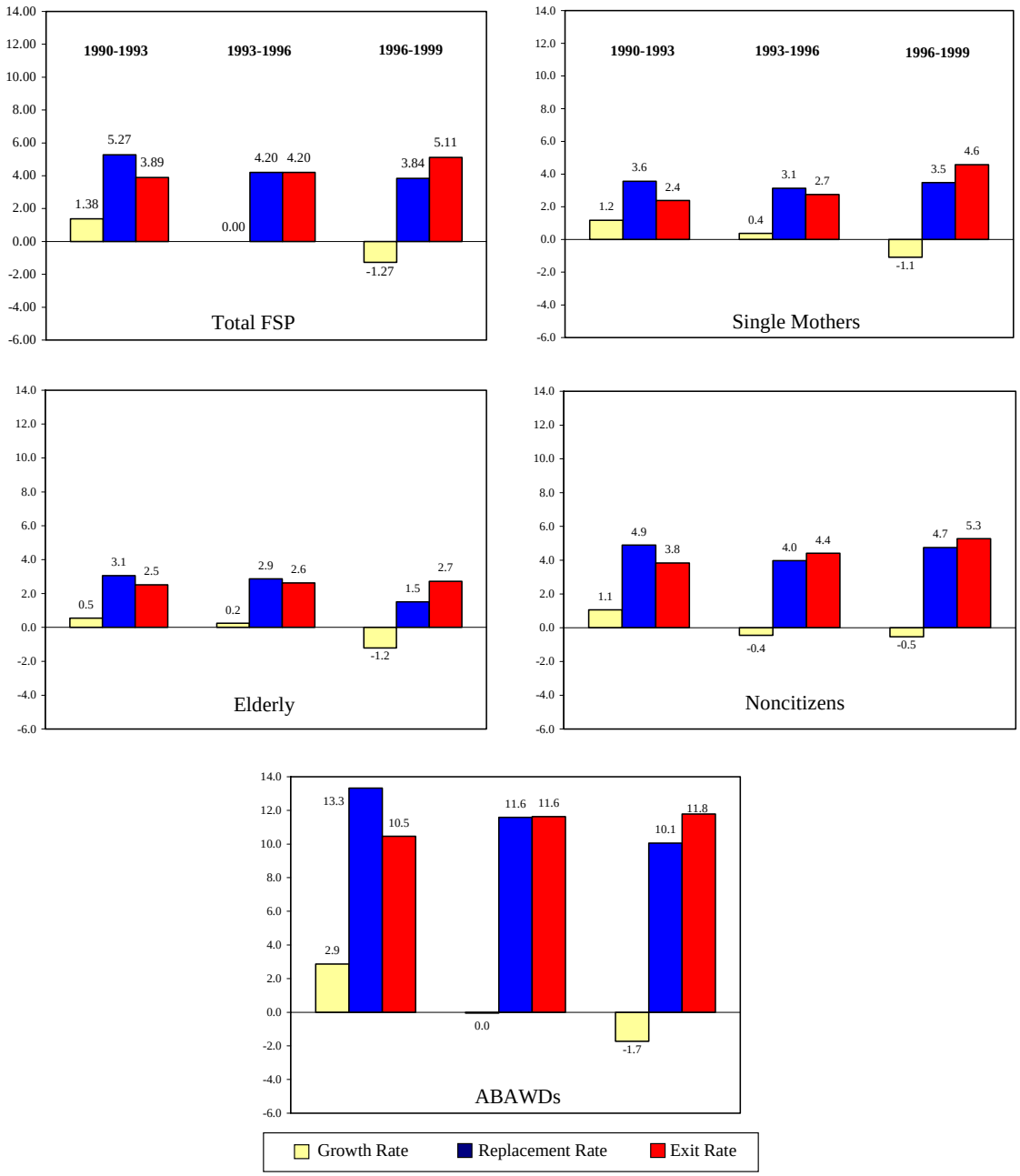


TABLE 12

OUTCOMES FOR FSP-EXITERS, 1990-1999

	Percent of Individuals Exiting with Earnings	Percent of Individuals Exiting Out of Poverty
Caseload Growth I		
August 1990 – July 1993	29.2	61.5
Caseload Growth II		
August 1993 – July 1996	30.8	59.9
Caseload Decline I		
August 1996 – October 1999	30.2	56.1

FSP have earnings. At the same time, the proportion of leavers with incomes above the federal poverty line decreased from an average of 61.5 percent in the early 1990s to an average of 56.1 percent in the late 1990s.

III. TRENDS IN FSP PARTICIPATION SPELLS

Analysis of changes in participation spell length can be used to examine changes in the exit rate. All else being equal, a higher exit rate means that individuals are staying in the FSP for shorter periods of time. Using both FSPQC and SIPP data, we have examined the length of FSP participation spells for different time periods of the 1990s.

Our analysis examined spell length distributions for two different types of FSP cohorts. An "entry cohort" consists of all individuals who enter the FSP over a given period of time. Analysis of entry cohorts can be used to answer questions such as: For all people who entered the FSP between 1996 and 1999, what was the typical participation spell length? By definition, this analysis ignores individuals who entered the FSP prior to the analysis period.

A "cross-sectional cohort" consists of all individuals participating in the FSP in one month. Analysis of cross-sectional cohorts can be used to answer questions such as: For all people participating in March 1996, what was the typical participation spell length?

In general, we would expect the typical spell length to be longer when measured for the cross-sectional cohort, because cross-sectional cohorts capture the cumulative effect on the caseload of long-term spells. In a given month, the FSP consists not only of those short-term spells (lasting only several months) that started within the last several months but also includes all long-term spells that started within the last several years. Thus, even if a small proportion of new entrants stay on the program for a long period of time, the cumulative effect of those cases means that in any given month a much larger share of the caseload is in the middle of a long participation spell.

A. ENTRY COHORT ANALYSIS

1. FSPQC-Based Estimates

We used life tables to examine the length of time individuals participate in the FSP. The life table (Table 13) presents the hazard rate, survivor rate, and cumulative exit rate for each spell. The hazard rate is the probability that a spell ends in a particular month, given that it has lasted at least until the beginning of that month. The survivor rate is the unconditional probability that a spell lasts more than a given number of months. The cumulative exit rate is the unconditional probability that a spell ends within a given number of months

To construct life tables using FSPQC data, we used repeated cross-sectional analysis on a series of entry cohorts over the analysis period. For each month t in the analysis period, we calculated the number of new entrants in that month. Then, in each month $t+1$ to t+n, we estimated the number of individuals whose FSPQC record indicated that they entered in month t. Since the monthly samples are intended to be representative, decreases in the estimated number of cases with an entry month of t are assumed to reflect the number of cases that exited. The life table for the entry cohort is the sum of the exit patterns for all of the entry months of the analysis period.

We used FSPQC files for 1990 through 2002. As a result, we do not have estimates of the number of cases that began during that period but ended after 2002. These "right-censored" cases are not considered to be exits from the FSP.

The FSPQC entry cohort estimates include the weighting adjustment to account for the undersample of individuals in their first two months of participation, which we describe in

Section B of Chapter II. Our estimates do not, however, adjust for fact that the FSPQC data contain an oversample of individuals in their 11th month of FSP receipt.[16]

Table 13 presents the participation spell life table based on FSPQC data. In FSPQC data, 50 percent of new FSP entrants during the 1990s exited by the end of their sixth month. Three-fourths of new entrants exited by the end of their 13th month, and less than 30 percent of new entrants had a participation spell that lasted longer than one year. Only 11.9 percent of new entrants had participation spells lasting longer than two years.

The pattern of the hazard rate across participation spells appears to reflect the influence of certification periods on FSP exits. Certification periods—the amount of time a household can receive FSP benefits before having to go through a recertification process—tend to be 3, 6, or 12 months (depending on household characteristics and state guidelines). The hazard rate was highest for participation spells that are equal to or slightly longer than 3, 6, or 12 months, which suggests that recertification is an influential trigger event for FSP exit.

FSPQC data indicate that the length of participation spells declined somewhat over the 1990s (Table 14). During the period of caseload growth in the early 1990s, the median participation spell was seven months. This fell to six months during the period of caseload decline in the late 1990s. Similarly, while 75 percent of new entrants left the program by the end of their 13th month in the early 1990s, 75 percent exited by the end of their 12th month in the late 1990s.

[16] The number of individuals in their 11th month of participation often is substantially higher than the number in their 10th month during the previous calendar month. The reason for this oversample is unknown. This phenomenon has changed over time. During the 1990-1993 period, the number of individuals in their 11th month was, on average, 21.5 percent greater than the number in their 10th. The number of 11th month cases was only 7.1 percent higher in the 1993-1996 period, and was 11.2 percent higher in the 1996-1999 period.

TABLE 13

LIFE TABLE OF FSP PARTICIPATION SPELLS ENTRY COHORT
FSPQC-BASED ESTIMATES 1990-1999

Month of Spell	Number of Spells at Beginning of Month	Number Exiting During Following Month	Survivor Rate (Percentage)	Hazard Rate (Percentage)	Cumulative Exit Rate (Percentage)
1	193,637,953	15,684,674	91.9	8.1	8.1
2	177,953,279	13,880,356	84.7	7.8	15.3
3	164,072,923	19,796,540	74.5	12.1	25.5
4	144,276,384	18,507,197	65.0	12.8	35.0
5	125,769,186	9,860,313	59.9	7.8	40.1
6	115,908,874	20,608,250	49.2	17.8	50.8
7	95,300,624	16,659,094	40.6	17.5	59.4
8	78,641,530	8,928,103	36.0	11.4	64.0
9	69,713,427	1,982,446	35.0	2.8	65.0
10	67,730,981	-3,388,405	36.7	-5.0	63.3
11	71,119,385	9,529,086	31.8	13.4	68.2
12	61,590,300	9,673,763	26.8	15.7	73.2
13	51,916,537	10,344,317	21.5	19.9	78.5
14	41,572,220	5,734,125	18.5	13.8	81.5
15	35,838,095	1,224,719	17.9	3.4	82.1
16	34,613,376	2,977,526	16.3	8.6	83.7
17	31,635,849	1,569,177	15.5	5.0	84.5
18	30,066,673	730,918	15.1	2.4	84.9
19	29,335,755	1,696,138	14.3	5.8	85.7
20	27,639,617	-4,508,520	16.6	-16.3	83.4
21	32,148,137	4,624,057	14.2	14.4	85.8
22	27,524,080	-2,098,695	15.3	-7.6	84.7
23	29,622,775	1,917,945	14.3	6.5	85.7
24	27,704,829	4,670,093	11.9	16.9	88.1
25	23,034,736	2,404,273	10.7	10.4	89.3
26	20,630,463	1,256,434	10.0	6.1	90.0
27	19,374,030	697,622	9.6	3.6	90.4
28	18,676,408	-561,037	9.9	-3.0	90.1
29	19,237,444	2,170,316	8.8	11.3	91.2
30	17,067,129	681,022	8.5	4.0	91.5

Shaded areas reflect 25th, 50th, and 75th percentiles.

TABLE 14

COMPARISON OF PARTICIPATION SPELLS ENTRY COHORT
FSPQC-BASED ESTIMATES, 1990-1999

Period	25 Percent of Individuals Exit in or Before Month	50 Percent of Individuals Exit in or Before Month (Median)	75 Percent of Individuals Exit in or Before Month
Total Period August 1990 – October 1999	3	6	13
Caseload Growth I August 1990 – July 1993	4	7	13
Caseload Decline I August 1993 – July 1996	3	6	13
Caseload Decline II August 1996 – October 1999	3	6	12

These FSPQC-based estimates are consistent with the FSPQC-based decomposition estimates presented in Chapter II. According to FSPQC data, more than half of the caseload growth and two-thirds of the caseload decline in the 1990s could be explained by changes in the exit rate. The slight decline in the 25 percentile and median spell lengths could have affected caseload trends substantially. We simulated an FSP caseload by assuming a constant number of new entrants each month (1.5 million) and by using the FSPQC-based exit rates for the caseload growth and decline periods. The resulting caseload was 9.5 percent lower after seven months using exit rates from the period of decline than when using the exit rates from the period of caseload growth (Table 15). Differences in cumulative exit rates would be even larger after seven months, all else being equal.

TABLE 15

SIMULATED CASELOAD USING FSPQC-BASED EXIT RATES
1990-1993 VERSUS 1996-1999

	Caseload Growth (1990-1993)	Caseload Decline (1996-1999)
Monthly New Entrant Assumption	1.5 Million	1.5 Million
Cumulative Exit Rate		
Month 1	7.6	7.6
Month 2	10.8	10.8
Month 3	16.5	**26.2**
Month 4	**25.7**	37.8
Month 5	29.1	46.2
Month 6	42.0	**54.3**
Month 7	**53.7**	60.9
Caseload Size, End of Month 7	9,218,995	8,341,768
Difference	--	877,226
Percent Difference	--	9.5

2. SIPP-Based Estimates

SIPP data are well-suited for examining participation dynamics of new entrants because the longitudinal nature of the survey allows observation of households as they enter FSP as well as how long each FSP household participates in the program.

We combined data from the five SIPP panels covering the 1990s to construct a life table for all individuals who entered the FSP during that period (Table 16). Data from spells that started before the analysis period (left-censored spells) were not included in the analysis. Data from spells that lasted as long as or longer than the SIPP panel (right-censored spells) were included in the life table, but when the SIPP panel ended, we did not consider these households as exiting the FSP. Instead, we used the information for the spell while it was active. For example, if a spell

was right-censored after 10 months, we used the information that the spell did not end within the first 10 months. To yield estimates similar in methodology to Gleason et al., we did not weight life table estimates.[17]

During the overall period, the median spell length was eight months, meaning that of all the individuals who entered the FSP in the 1990s, one-half had a participation spell lasting eight or fewer months. Three-fourths of program entrants had a spell length that lasted 21 or fewer months. About one out of every five individuals who entered the FSP in the 1990s had a participation spell that lasted longer than two years. While the hazard rate had a large spike at 12 months, potentially reflecting the influence of certification periods, it also had spikes at 4-month intervals. This may reflect the influence of "seam reporting" in the SIPP. SIPP interviews occur every four months, and seam reporting occurs when respondents report that they received food stamps in all four of the previous months when in fact they received food stamps for fewer than four of those months.

Economic and policy changes during the 1990s appear to have combined to reduce the participation spells of longer-term participants—those receiving benefits for a year or more. During all three of the caseload periods, 25 percent of entrants left the program by the end of their fourth month and 50 percent left by the end of their eighth month (Table 17). However, those who did not exit by their eighth month were more likely to have had longer participation spells in the early 1990s than in the late 1990s. During the caseload growth of the early 1990s, half of those individuals who did not exit before their eighth month had spells lasting longer than

[17] The appropriate weight for life table estimates would be the SIPP longitudinal panel weight. However, because the probability of selection in SIPP is not associated with FSP participation spells, little analytical value is lost by examining unweighted estimates.

TABLE 16

LIFE TABLE OF FSP PARTICIPATION SPELLS ENTRY COHORT,
SIPP-BASED ESTIMATES, 1990-1999

Month of Spell	Number of Spells at Beginning of Month	Number Exiting During Following Month	Survivor Rate (Percentage)	Hazard Rate (Percentage)	Cumulative Exit Rate (Percentage)
1	13,603	1,103	91.9	8.1	8.1
2	12,147	946	84.7	7.8	15.3
3	10,870	683	79.4	6.3	20.6
4	9,902	1,884	64.3	19.0	35.7
5	7,224	491	59.9	6.8	40.1
6	6,561	445	55.9	6.8	44.1
7	5,938	287	53.2	4.8	46.8
8	5,516	684	46.6	12.4	53.4
9	4,376	196	44.5	4.5	55.5
10	4,056	199	42.3	4.9	57.7
11	3,745	178	40.3	4.8	59.7
12	3,486	360	36.1	10.3	63.9
13	2,859	104	34.8	3.6	65.2
14	2,678	102	33.5	3.8	66.5
15	2,502	80	32.4	3.2	67.6
16	2,366	197	29.7	8.3	70.3
17	1,951	66	28.7	3.4	71.3
18	1,821	59	27.8	3.2	72.2
19	1,694	49	27.0	2.9	73.0
20	1,612	101	25.3	6.3	74.7
21	1,329	45	24.4	3.4	75.6
22	1,231	48	23.5	3.9	76.5
23	1,123	35	22.7	3.1	77.3
24	1,052	66	21.3	6.3	78.7
25	836	23	20.7	2.8	79.3
26	766	15	20.3	2.0	79.7
27	690	20	19.7	2.9	80.3
28	634	37	18.6	5.8	81.4
29	442	9	18.2	2.0	81.8
30	393	16	17.5	4.1	82.5

Shaded areas reflect 25th, 50th, and 75th percentiles.

TABLE 17

COMPARISON OF PARTICIPATION SPELLS SIPP-BASED ENTRY COHORT ESTIMATES, 1990 THROUGH 1999

Period	Individuals at Risk of Exiting	25 Percent of Individuals Exit in or Before Month	50 Percent of Individuals Exit in or Before Month (Median)	75 Percent of Individuals Exit in or Before Month
Total Period August 1990 – October 1999	13,603	4	8	21
Caseload Growth I August 1990 – July 1993	5,587	4	8	26
Caseload Decline I August 1993 – July 1996	3,683	4	8	21
Caseload Decline II August 1996 – October 1999	3,792	4	8	16

26 months. In the late 1990s, on the other hand, half of those individuals participating longer than eight months left the program by the end of their 16th month.[18]

Our estimates of the participation spells of new entrants in the early 1990s are slightly shorter than those estimated by Gleason et al. (1998) for new entrants in 1991 and 1992. Their estimates, which were based on just the 1991 SIPP panel, showed a 25th percentile participation spell of 4 months, a median of 9 months, and a 75th percentile of over 30 months. Because our estimates for this period included 1993 but the Gleason et al. estimates did not, this suggests that

[18] Some of the decline in long-term participation spells observed over the 1990s may be explained by the increased FSP volatility observed in the 1996 SIPP panel. While volatility adjustments were made for entry and exit rates discussed in Chapter II, no such adjustments were made for the analysis of spell length. We expect that adjusting for this volatility would have a relatively small increase in the 75th percentile participation spell month in the Caseload Decline II period.

there were proportionately more long-term participants entering the FSP during 1991 and 1992 than there were for the entire 1990 to 1993 period combined.

FSPQC and SIPP provide relatively consistent estimates of the median spell length of new entrants. According to FSPQC data, the median spell length during the 1990s was seven months; according to SIPP data it was eight months. However, the two data sets differ in how the spell length distribution changed over time. In SIPP, the lower end of the distribution—reflecting the length of time that people with short participation spells stayed in the program—remained relatively constant over time, while the spell length of the long-term participants fell substantially. In FSPQC data, on the other hand, the spell lengths of all participants declined during the 1990s—even among those with the shortest participation spells. Another key difference between the data sets is the estimate of the 75th percentile spell length: 21 months in SIPP data compared with 13 months in FSPQC data for the entire analysis period.

3. Subgroups

We used SIPP data to estimate entry cohort participation spell distributions for subgroups of FSP participants.[19] Subgroups were defined based on individuals' characteristics only for the month that they entered the FSP.[20] These estimates show that the elderly had the longest participation spells during the 1990s (Table 18). Of all elderly individuals entering the FSP in

[19] Subgroups cannot be estimated using FSPQC data, since individuals can move into and out of subgroups from month to month. As a result, changes in monthly subgroup estimates could be the result of entry and exit from the FSP or simply changes in subgroup status.

[20] This differs slightly from the approach for defining subgroups in the entry and exit rate analysis presented in the previous chapter. In that analysis, individuals who changed subgroup status after entering the FSP were not counted as an exit for that subgroup. In the analysis of participation spells, we were interested in how long individuals participated, given their characteristics at entry. Thus, individuals who changed subgroup status after entering the FSP were included in the spell length analysis.

TABLE 18

COMPARISON OF SPELL LENGTH DISTRIBUTIONS BASED ON SIPP ESTIMATES FOR ENTRY COHORT SUBGROUPS 1990-1999

Subgroup	Number at Risk of Exiting in Month 1 (n)	25 Percent of Individuals Exit In or Before Month	50 Percent of Individuals Exit In or Before Month (Median)	75 Percent of Individuals Exit In or Before Month
All Individuals	13,603	4	8	21
Single Mothers	4,417	4	11	27
Working Poor	4,738	4	6	14
Noncitizens	928	4	9	24
ABAWDs	1,151	2	4	9
Elderly	1,454	5	15	n.a.

n.a.= not applicable. The 75th percentile cannot be computed because more than 25 percent of cases did not exit before the end of the SIPP panel.

the 1990s, 50 percent had spells lasting 15 months or longer. Single mothers also had long participation spells, with 50 percent participating for 11 months or longer and 25 percent for 27 months or longer.

The working poor had participation spells that were shorter than those measured for the food stamp population as a whole: 50 percent of individuals who entered the FSP with earnings exited in or before their 6th month, and 75 percent exited by their 14th month. ABAWDs, who were faced with time limits on food stamp receipt after PRWORA, had the shortest participation spells: 25 percent exited in or before their second month of participation, and 50 percent exited in or before their fourth month.

Participation spells for almost all subgroups shortened over the 1990s (Table 19). In particular, spells decreased the most among those long-term participants in each subgroup. The 75th percentile participation spell for single mothers decreased from 27 months in the mid-1990s

TABLE 19

COMPARISON OF SPELL LENGTH DISTRIBUTIONS: SIPP-BASED ESTIMATES FOR ENTRY COHORT SUBGROUPS, BY PERIOD

Subgroup	Number at Risk of Exiting in Month 1 (n)	25 Percent of Individuals Exit in or Before Month	50 Percent of Individuals Exit in or Before Month (Median)	75 Percent of Individuals Exit in or Before Month
Caseload Growth I August 1990 – July 1993				
All individuals	5,587	4	8	26
Single mothers	1,836	5	13	n.a.
Working poor	1,732	3	6	15
Elderly	574	6	20	n.a.
Noncitizens	362	4	12	28
ABAWDs	453	2	4	9
Caseload Decline I August 1993 – July 1996				
All individuals	3,683	4	8	21
Single mothers	1,219	4	10	27
Working poor	1,217	3	7	14
Elderly	395	4	15	38
Noncitizens	256	4	8	24
ABAWDs	288	2	4	10
Caseload Decline II August 1996 – October 1999				
All individuals	3,792	4	8	16
Single mothers	1,178	4	8	17
Working poor	1,620	4	6	12
Elderly	414	4	12	36
Noncitizens	266	4	8	14
ABAWDs	372	3	4	9

n.a = not applicable. The 75th percentile cannot be computed because more than 25 percent of cases did not exit before the end of the SIPP panel.

to 17 months in the late 1990s. Over the same period, the 75th percentile for the working poor decreased from 14 months to 12 months, and the 75th percentile for noncitizens decreased from 24 months to 14 months.

Interestingly, despite time limits on FSP participation, the participation spells for ABAWDs, which already were short in the early and mid-1990s, did not decrease substantially after the time limits were imposed. Indeed, the 25th percentile participation spell length increased from two months to three months, possibly affected by the fact that the imposed time limit was three months.

B. CROSS-SECTIONAL COHORT

The cross-sectional cohort includes all food stamp participants in a given month. We estimated their full participation spell length, including the months of participation prior and subsequent to the analysis month. We estimated life tables for a cross-sectional cohort that included all participants in March 1996, a period after the caseload peak but prior to the sharp caseload decline of the late 1990s. Ideally, we would have examined multiple cross-sectional cohorts, but the data limited our ability to do so. Our estimate needed to be early in the 1996 SIPP so that we would have data to follow participation spells after the month in which the cross-sectional cohort was selected. We constructed both FSPQC- and SIPP-based estimates for March 1996.

1. FSPQC-Based Estimates

To estimate cross-sectional cohort life tables in FSPQC data, we used a method similar to that for computing life tables for the entry cohort. We first examined the start dates of the sample of individuals pulled for March 1996. Then, using FSPQC samples for subsequent months, we examined the changes in the number of people sampled who had the same start date.

For example, we examined the number of people participating in March 1996 who had started in January 1996. These individuals were in their third month of participation in March 1996. We could then see how many of these individuals exited after their third month by examining the sample of people in their fourth month in April 1996 (that is, the sample with a January 1996 start date). The life table was computed by summing these changes over all possible start months. We used more than 60 months of FSPQC samples subsequent to March 1996 to compute the life table for the cross-sectional cohort.

As expected, estimated participation spells were longer for the cross-sectional cohort than for the entry cohort. According to FSPQC data, 25 percent of the individuals participating in March 1996 were in the middle of a participation spell lasting one year or less, and 55 percent were in a spell lasting three years or less (Table 20). The median participation spell was 26 months compared with 54 months estimated in SIPP (Figure 8). Earlier SIPP-based estimates by Gleason et al. (1998) estimated that the median cross-sectional spell length was more than eight years; according to FSPQC data, only 14 percent of the March 1996 caseload was in the middle of a participation spell lasting eight years or longer.

2. SIPP-Based Estimates

To construct SIPP-based estimates of the cross-sectional cohort life table, we included those "left-censored" spells that were excluded from the entry cohort. Using recipiency history questions asked at the start of the SIPP panel, we determined the first month that each left-censored FSP unit began participating. We then followed all FSP units throughout the life of the

TABLE 20

SURVIVOR AND EXIT RATES FOR FSPQC-BASED
MARCH 1996 CROSS-SECTIONAL COHORT

Spell Length (Years)	Individuals at Risk of Exiting	Survivor Rate (Percent)	Cumulative Exit Rate (Percent)
0.5	25,848,647	84.8	15.2
1.0	21,958,401	73.9	26.1
1.5	19,178,218	58.5	41.5
2.0	15,210,431	52.7	47.3
3.0	13,738,893	44.2	55.8
4.0	11,551,769	33.8	66.2
5.0	8,848,435	31.4	68.6
6.0	8,238,278	24.5	75.5
7.0	6,463,023	18.8	81.2
8.0	4,972,691	14.2	85.8
9.0	3,786,810	11.6	88.4
10.0	3,101,462	9.7	90.3

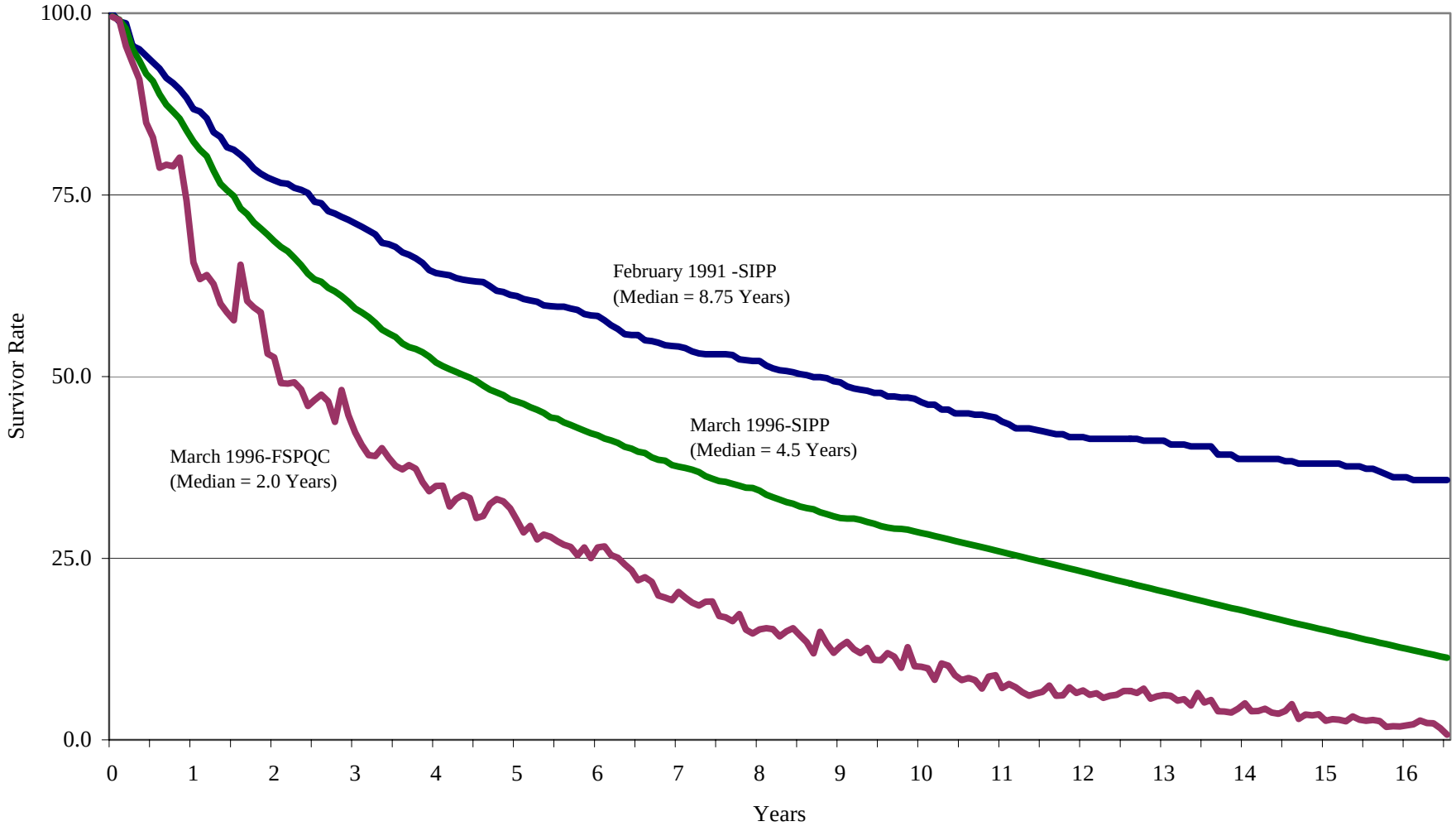
TABLE 21

SURVIVOR AND EXIT RATES FOR SIPP-BASED
MARCH 1996 CROSS-SECTIONAL COHORT

Spell Length (Years)	Individuals at Risk of Exiting	Survivor Rate (Percent)	Cumulative Exit Rate (Percent)
0.5	4,768	91.7	8.3
1.0	4,358	83.8	16.2
1.5	3,967	75.6	24.4
2.0	3,573	69.5	30.5
3.0	3,279	60.3	39.7
4.0	2,830	52.8	47.2
5.0	2,382	46.9	53.1
6.0	1,892	42.2	57.8
7.0	1,584	37.8	62.2
8.0	1,333	34.7	65.3
9.0	1,116	30.8	69.2
10.0	928	28.7	71.3

FIGURE 8

SURVIVOR RATES FOR CROSS-SECTIONAL COHORTS
FEBRUARY 1991 AND MARCH 1996



panel until they exited the FSP. As with the entry cohort, all SIPP-based estimates were unweighted, which is similar to the methodology used by Gleason et al. (1998).[21]

Participation spells for the March 1996 cross-sectional cohort were substantially shorter than those estimated by Gleason et al. for February 1991. To ensure that our current approach was consistent with their earlier approach, we replicated the February 1991 estimates using the same methods used to produce the March 1996 cross-sectional estimates (Table 22). As with the Gleason et al. estimates, the median participation spell for the February 1991 cohort was more than eight years, about twice the median for March 1996. When we compare the quartiles of the distribution, as well as the plot of the distribution (Table 23 and Figure 5), it is clear that participation spells were shorter at all points of the distribution in 1996 than in 1991.

The shorter participation spell estimates for the cross-sectional cohort are relatively consistent with trends observed for the entry cohort, where participation spells decreased significantly for long-term recipients. If new entrants were more likely to have short participation spells, then it follows that the distribution of spells in any given month would reflect proportionately fewer of the longest term recipients. However, because the new entrant cohort distribution of participation spells for short-term participants remained virtually unchanged during the 1990s, we would expect the 1996 and 1991 cross-sectional distributions to be more similar among short-term participants.

Differences between the 1991 and 1996 SIPP panels could help to explain the differences in cross-sectional estimates. These differences, which are discussed more in Appendix A, could have led to systematic differences between the samples of FSP participants in February 1991 and

[21] As with Gleason et al., we needed to impute FSP start dates for children because SIPP does not ask recipiency history questions of individuals under 15. In general, we set the start date as equal to the date that the child's parent entered the FSP unit, or the date that the child entered the household, if later.

TABLE 22

SURVIVOR AND EXIT RATES FOR SIPP-BASED FEBRUARY 1991
CROSS-SECTIONAL COHORT

Spell Length (Years)	Individuals at Risk of Exiting	Survivor Rate (Percent)	Cumulative Exit Rate (Percent)
0.5	2,134	94.1	5.9
1.0	2,006	88.4	11.6
1.5	1,879	81.5	18.5
2.0	1,734	77.4	22.6
3.0	1,646	71.6	28.4
4.0	1,198	64.7	35.3
5.0	898	61.2	38.8
6.0	743	58.4	41.6
7.0	610	54.2	45.8
8.0	489	52.1	47.9
9.0	421	49.4	50.6
10.0	345	46.9	53.1

TABLE 23

COMPARISON OF SPELL LENGTH DISTRIBUTIONS
FEBRUARY 1991 VS. MARCH 1996 SIPP-BASED ESTIMATES

Period	25 Percent of Individuals Exit in or Before Month	50 Percent of Individuals Exit in or Before Month (Median)	75 Percent of Individuals Exit in or Before Month
February 1991	31 (2.6 years)	105 (8.75 years)	201 (16.8 years)
March 1996	19 (1.6 years)	54 (4.5 years)	137 (11.4 years)

March 1996. For instance, in the 1991 panel, the questions concerning pre-panel recipiency history were asked in Wave 2. Four months after the respondent's first SIPP interview, they were asked when they started the FSP spell that was active during or before that first interview. These questions were asked in Wave 1 of the 1996 panel. Because 1991 SIPP sample members were asked to recall information over a longer period of time, this could have led to reporting errors regarding spell lengths. In particular, it could have caused respondents with relatively short participation spells to report the spells as being one or two months longer than they actually were.[22]

Another apparent difference between the two panels is that the 1996 panel appeared to have included a more volatile sample of FSP participants. Our estimates of replacement and exit rates discussed in Chapter II were adjusted to account for this volatility; this is explored in more detail in Appendix A. The volatile sample could have led to more individuals reporting short participation spells in1996.

[22] It should be noted, however, that Gleason et al. (1998) identified some evidence that pre-panel recipiency history questions in the 1991 panel led respondents to under-estimate their participation spells, relative to other FSP participants.

IV. CONCLUSIONS

Studying patterns of FSP entry and exit can improve our understanding of how long individuals participate in the FSP. This analysis also can provide a better understanding of how policy and economic factors affect caseload trends. In this study, we set out to measure these trends using two key data sources: FSPQC and SIPP.

Using two data sources provides increased support for our conclusions when the estimates from the two data sources are consistent. In comparing the results of the FSPQC- and SIPP-based estimates, we draw the following general conclusions:

- Caseload changes during the 1990s were driven both by changes in the rate that people that entered the program as well as in the length of time that people participated.
- Much of the caseload growth of the early 1990s was caused by increasing replacement rates, although lengthening participation spells also contributed to the growth.
- Much of the caseload decline of the late 1990s was caused by shorter participation spells. In particular, participation spells among long-term participants were reduced substantially.
- More than half of new entrants exited the program within between six and eight months, and about two-thirds of new entrants exited within one year.
- In any given month, the caseload consisted of a large portion of long-term participants. In March 1996, between one-third and one-half of participants were in the middle of spells longer than four and a half years (a substantial decline from earlier estimates which indicated that in 1992 one-half of participants were in the middle of spells longer than eight years).
- Single mothers tended to enter the FSP at a relatively constant rate. The length of time that single mothers participated in the FSP declined over the course of the 1990s.
- Because able-bodied adults have always experienced short FSP participation spells, the time limits on FSP benefits imposed through welfare reform had only a minor impact on the length of their participation spells.

- There is no evidence that the eligibility restrictions of welfare reform led to lower rates of program entry among noncitizens.

In the remainder of this chapter, we use the FSPQC- and SIPP-based results to answer the research questions we raised in Chapter I.

Question 1: How have replacement and exit rates changed over the course of the 1990s?

FSPQC and SIPP data indicate that replacement rates fell and exit rates increased during the 1990s. Replacement rates were at their lowest levels during the period of caseload decline in the late 1990s. Thus, as the caseload peaked and subsequently began to decline, there were fewer new entrants relative to the previous month's caseload. At the same time, exit rates were at their highest during the decline. Relative to the previous month's caseload, the number leaving the FSP each month grew.

Both replacement and exit rates are higher in the FSPQC than in the SIPP analyses. In FSPQC data, the average replacement and exit rates for the 1990s were 7.0 and 7.2 percent, respectively. In SIPP, the replacement and exit rates for the same period were both 4.4 percent. The higher rates in FSPQC data could be explained partly by the weighting adjustment we performed to adjust for the undersample of individuals in their first month of participation. However, if this explains some of the difference between the SIPP and FSPQC rates, it is likely to be only a small part. The adjustment achieved a replacement rate-exit rate equilibrium that was consistent with observed caseload trends. A smaller adjustment would lead to even higher exit rates, and a larger adjustment would lead to even higher replacement rates.

A more plausible explanation is that SIPP underestimated volatility in the 1990 through 1993 panels. The 1996 panel estimated replacement and exit rates to be 1.5 percentage points higher than in the earlier panels. We adjusted the 1996 panel estimates downward to be consistent with those of the earlier panels, implicitly assuming an error in the 1996 panel

estimate. However, it could be that changes in the 1996 panel estimates led the replacement and exit rates to be more accurate, not less accurate. Specifically, computer-assisted interview techniques may have led to more accurate entry and exit reporting. This would imply that the true entry and exit rates were closer to the FSPQC-based estimate of 7.0 percent. Unfortunately, without a better understanding of the problems with the 1996 and earlier SIPP panel estimates, we do not know which estimates of replacement and exit rates were more accurate.

Question 2: How have the changes in replacement and exit rates combined to affect caseload levels?

The replacement and exit rates both play a large role in explaining caseload trends. In the early 1990s, caseloads grew in large part because the replacement rate was higher than usual. But longer participation spells also contributed to the growth. In the late 1990s, high exit rates helped to drive much of the caseload decline, but low replacement rates also played a role in explaining caseload trends.

In decomposing the changes in growth rates across analysis periods, both datasets indicate that the falling replacement rate played a major role in explaining the shift from caseload growth in the early 1990s to caseload decline in the mid-1990s. According to FSPQC data, a rising exit rate during the early 1990s helped end the period of caseload growth.

Both datasets indicate that rising exit rates explain more than two-thirds of the shift from the slight decline of the mid-1990s to the steep decline of the late 1990s. These changes are particularly policy-relevant because the steep decline followed the sweeping welfare reforms introduced by PRWORA. During this period, the exit rates were higher than at any other point in the decade, and the shift in exit rates explained 70 percent of the change in growth rates. Thus, after PRWORA, caseloads shrank predominantly because individuals exited the program at a faster rate.

The overall conclusion for the 1990s is that neither the replacement nor the exit rate was solely responsible for explaining caseload changes. When we examine the relative roles of replacement and exit rate changes in the shift from the caseload growth period of 1990-1993 to the caseload decline period of 1996-1999, both FSPQC and SIPP data indicate that the two factors had equal weight in explaining the caseload changes. As a result, policymakers should consider the implications of policy and economic changes on both the rate at which people enter the program and on the length of time that they participate.

Question 3: How long did individual FSP participation spells tend to last?

According to FSPQC and SIPP data, more than half of all new entrants into the FSP exited the program by between six and eight months, and approximately two-thirds of new entrants exited by the end of one year in the program. Thus, about one out of every three new entrants participated in the program for longer than one year. The participation spells of long-term participants were estimated to be substantially longer in SIPP data than in the FSPQC data.

At any given point in time, the FSP caseload has accumulated a large number of long-term recipients. However, estimates of the cross-sectional distribution of spell lengths differ between SIPP and FSPQC data. Among all individuals participating in March 1996, SIPP data suggest that half were in the middle of participation spells lasting four and a half years or longer, while FSPQC data indicate that only one-third of the caseload was in the middle of spells of at least four and a half years. In FSPQC data, the median participation spell for March 1996 participants was just over two years. While it is unclear why the estimates from these separate sources differ, it appears that the estimated median participation spell of eight years for a cross-section of FSP participants is no longer an accurate depiction of the FSP dynamics.

Question 4: Have FSP spell lengths changed over time?

FSPQC estimates that participation spells shortened over time. The 25th percentile participation spell declined from four months in the early 1990s to three months in the mid- and late 1990s. The median participation spell declined from seven months to six months. SIPP data, on the other hand, estimate that short-term participation spells were constant over time. According to SIPP data, during each of the three periods examined in the 1990s, the 25th percentile and median spell lengths were four and eight months, respectively. For each data source, the trends in participation spell lengths are consistent with earlier estimates of the influence of changes in the exit rate.

Among households with relatively long participation spells, both FSPQC and SIPP data estimate that spells became shorter over the 1990s, but the estimates differ on the magnitude of the decrease. According to FSPQC data, the 75th percentile spell length among program entrants fell from 13 months in the early 1990s to 12 months in the late 1990s. According to SIPP data, the 75th percentile fell from 26 months to 16 months.

Question 5: Did replacement rates, exit rates, and spell lengths vary for FSP subpopulations?

Participation patterns have varied substantially by subgroup. For this analysis, subgroup estimates were based on SIPP data only.

Participation trends among single mothers are explained predominantly by the exit rate. The replacement rate among single mothers stayed relatively constant during the 1990s. On the other hand, the exit rate was low during the growth of the early 1990s and was high during the declines of the late 1990s. Thus, compared with the rest of the FSP population, single mothers tended to enter the program at a more stable rate, but the length of time they participated varies more.

According to SIPP data, the exit rate explained 57.6 percent of single mother caseload trends in the early 1990s and 63.6 percent in the late 1990s.

Compared with other subgroups, single mothers had relatively long participation spells. The median spell for the entire period was 11 months, which reflects a decline from 13 months in the early 1990s to 8 months in the late 1990s.

Somewhat surprisingly, the replacement rate for noncitizens did not decline after the eligibility restrictions of PRWORA. The replacement rate among noncitizens in the 1996 to 1999 period (4.7 percent) was at almost the same level as in the 1990 to 1993 period (4.9 percent). The length of participation among noncitizens did change, however. The exit rate increased from 3.8 percent in the early 1990s to 5.3 percent in the late 1990s, and the median participation spell fell from 12 months to 8 months among this population.

ABAWDs are another group with eligibility restrictions. In 1996, welfare reform subjected ABAWDs to time-limited food stamp participation: unless they were meeting work requirements, ABAWDs could receive no more than three months of FSP benefits. The replacement rate for ABAWDs fell from 13.3 percent in the early 1990s to 10.1 percent in the late 1990s, suggesting that ABAWDs were deterred from entering the FSP. The exit rate for this population increased from 10.5 percent in the early 1990s to 11.8 percent in the late 1990s. ABAWDs had the shortest participation spells of all subgroups examined, with half of all ABAWDs exiting by the end of their fourth month and three-fourths exiting by the end of their ninth month. Despite time limits imposed through PRWORA, the short ABAWD participation spells remained relatively constant during the 1990s.

Caseload trends for the elderly are driven more by entry patterns than exit patterns—the exit rate among the elderly remained between 2.5 and 2.7 percent over the 1990s. Compared with other groups, the elderly had the longest participation spells. Among all new entrant elderly

individuals during the 1990s, half had spells of 15 months or longer. Spells were longest during the early 1990s, when half of the elderly had spells of 20 months or longer. Participation spells for the elderly experienced the sharpest decline among all of the subgroups, with the median falling to 12 months in the late 1990s.

For the working poor (food stamp participants with earnings), exit rates typically were high because employment is a trigger for FSP exit. Among individuals entering the FSP with earnings, the median participation spell remained relatively constant—at about six months—during the 1990s.

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APPENDIX A

INCONSISTENCIES IN SIPP DATA

The Census Bureau made significant changes to the SIPP in the 1996 panel to improve the accuracy of SIPP-based estimates. Key changes included:

- Using a single 4-year panel instead of overlapping 32 month panels
- Increasing sample sizes
- Oversampling households from areas with high poverty populations
- Introducing computer-assisted interviewing
- Changing questions concerning program participation

In comparing 1996 SIPP data with earlier estimates, we identified several key inconsistencies that could affect SIPP-based estimates of FSP participation. The source of these inconsistencies is not clear. They may have resulted from changes in sampling methods, sampling targets, interview questions, or data processing. Indeed, it is unclear whether these changes actually improved or decreased accuracy.

In this appendix, we present our analysis of SIPP discrepancies to make other users aware of the differences, not necessarily to provide evidence about the problems' causes. We summarize three key inconsistencies found in the SIPP: (1) changes in the proportion of adults among FSP participants, (2) changes in FSP participation volatility, and (3) changes in the number of new entrant FSP households with earnings.

The differences across panels suggest that the 1996 SIPP sample of FSP participants differed systematically from the other samples, but it is unclear which sample was more accurate. There are some problems that lead us to suspect the accuracy of the 1996 panel (discussed in Section A,

below). In general, users of the data should exercise caution when comparing FSP characteristics across panels.

A. CHANGES IN THE PROPORTION OF FSP ADULT PARTICIPANTS

Weighted estimates of the proportion of FSP adults shifted in the 1996 panel. In the 1990 through 1993 panels, the proportion of the FSP population that was age 18 or older generally was between 46 and 48 percent, consistent with FSPQC-based estimates. However, in the 1996 panel, the proportion that was of adult age increased to between 53 and 55 percent (Figure A.1).[23]

This shift in proportion was driven both by an increase in the number of adult FSP participants and a decrease in the number of child participants (Figure A.2). Between the end of the 1993 panel and the start of the 1996 panel, the number of adults increased by between 500,000 and 1 million per month, while the number of children decreased by about 2 million per month (Table A.1).[24] At the same time, the total number of FSP participants decreased by about 1.5 million per month.[25]

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[23] Similar trends are observed in unweighted data. The unweighted proportion of the caseload that is adult averaged 47.3 in the last six months of the 1993 panel and 51.4 in the first six months of the 1996 panel.

[24] A similar inconsistency is identified in data on Aid to Families with Dependent Children/Temporary Assistance for Needy Family (AFDC/TANF) recipients. According to administrative data, the percentage of adult AFDC recipients was 32.6 percent, 31.9 percent, and 31.4 percent in 1994, 1995, and 1996, respectively. In the 1996 SIPP panel, AFDC/TANF the level of adult participants was approximately 38 percent for most of the 1996 panel (Figure A.3). However, unlike estimates of the FSP adult proportion, the estimate of the AFDC/TANF adult proportion fell back to about 28 percent in late 1998.

[25] Administrative data show that the caseload decreased by less than 300,000 during the same period.

FIGURE A.1

PROPORTION OF FSP PARTICIPANTS THAT IS ADULT AGE 18 OR OLDER

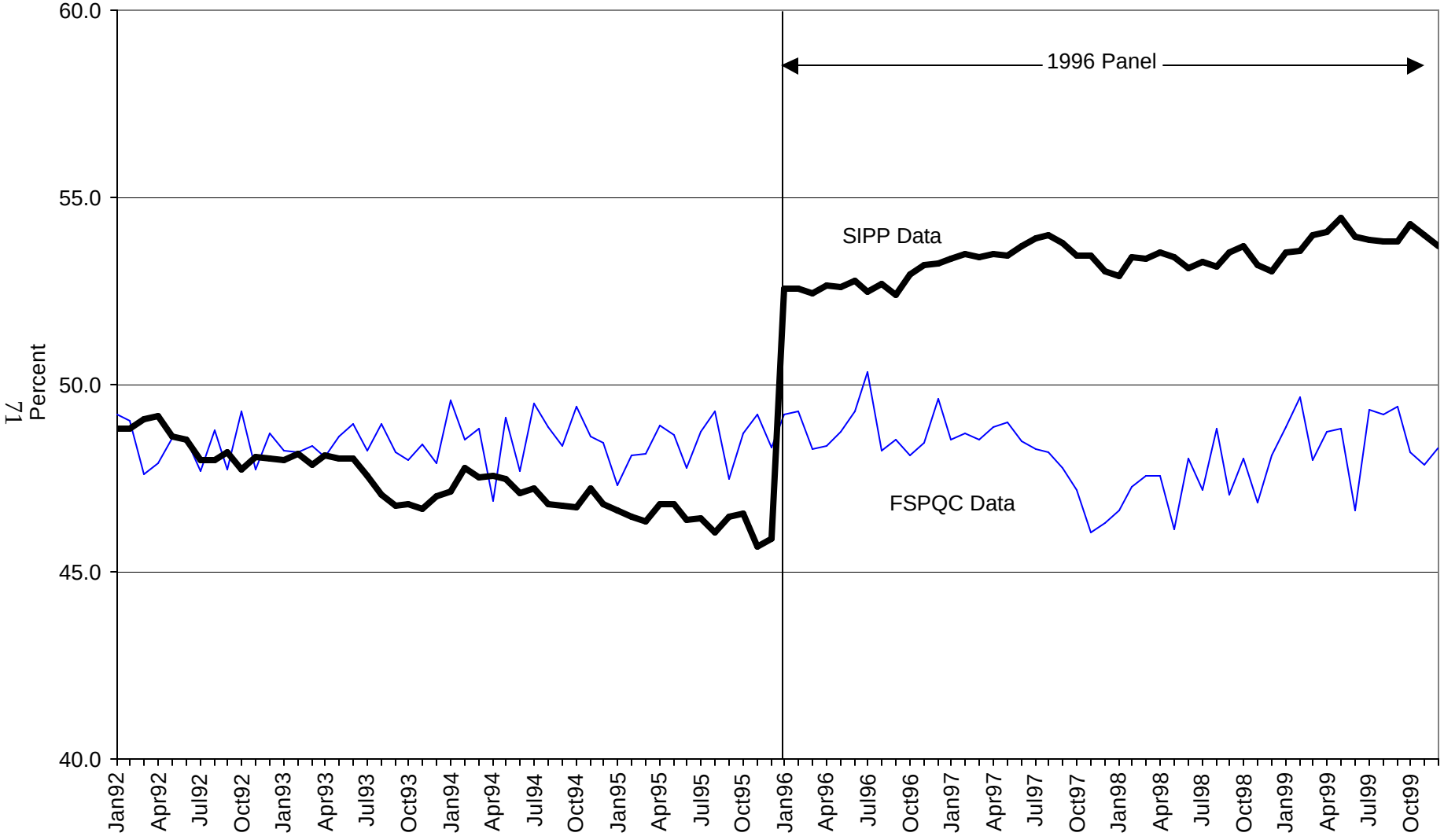


FIGURE A.2

ADULT AND CHILD FSP PARTICIPANTS IN SIPP

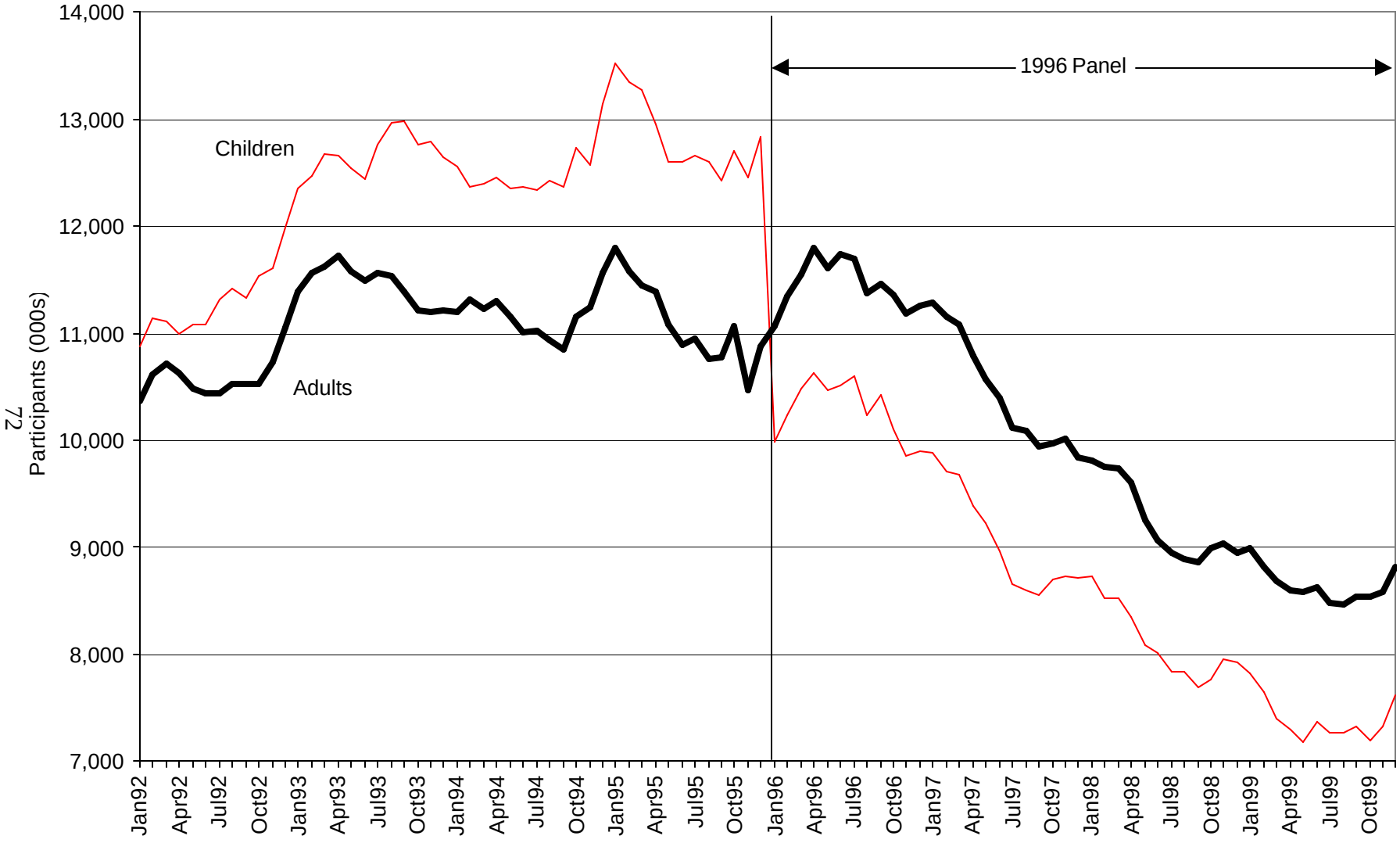


TABLE A.1

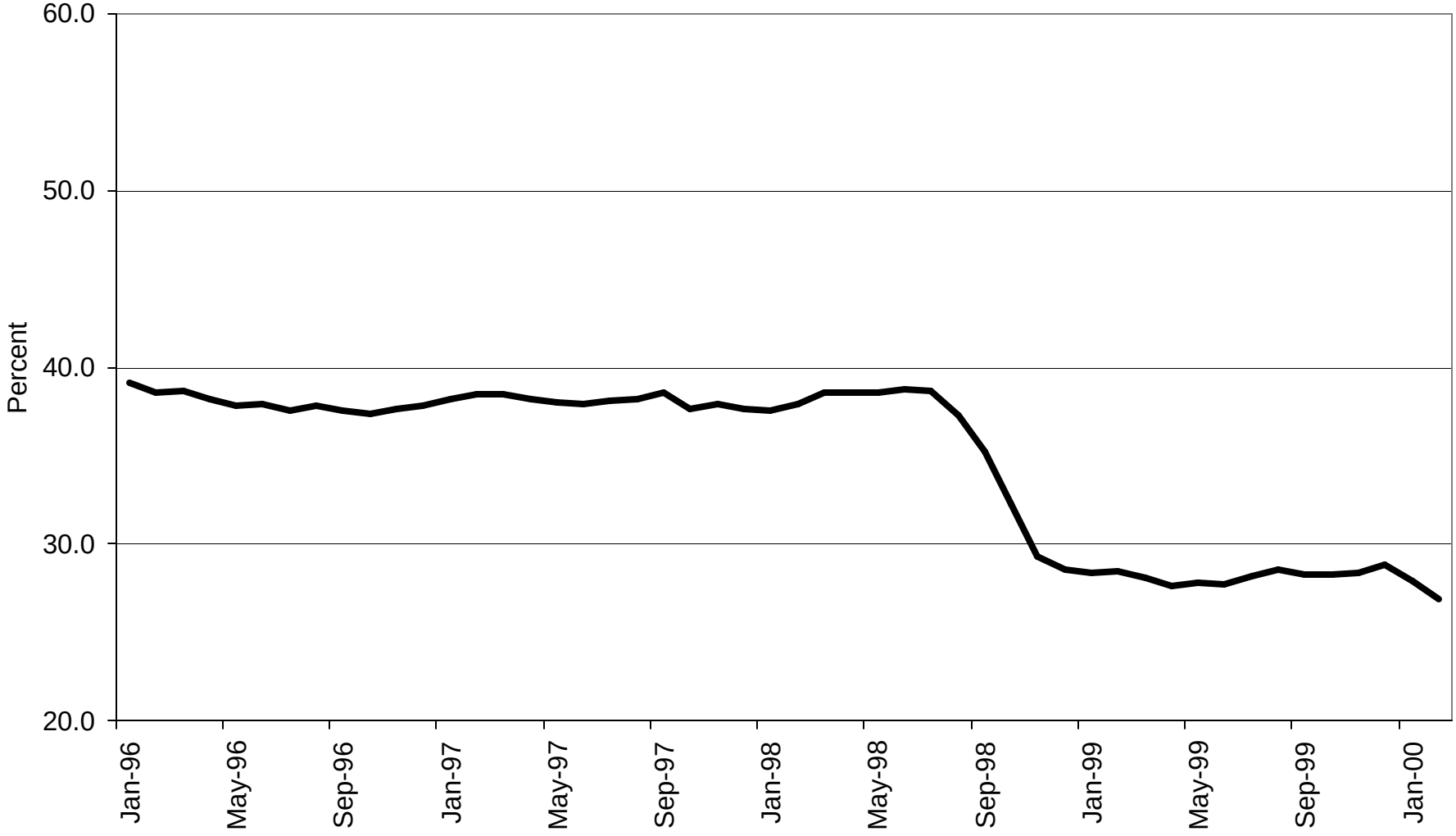
MONTHLY SIPP-BASED FSP ESTIMATES,
AUGUST 1995 – MAY 1996

Month	Total U.S. Population (000s)	Individuals with Food Stamps (000s)	Adults with Food Stamps (000s)	Children with Food Stamps (000s)	Percent of Total Population with Food Stamps	Percent of Food Stamp Recipients Adult	Percent of Food Stamp Recipients Children
1993 Panel							
August 1995	263,122	23,358	10,757	12,601	8.9	46.1	53.9
September 1995	263,281	23,213	10,779	12,434	8.8	46.4	53.6
October 1995	263,556	23,769	11,065	12,704	9.0	46.6	53.4
November 1995	263,657	22,921	10,464	12,457	8.7	45.7	54.3
December 1995	263,915	23,704	10,871	12,832	9.0	45.9	54.1
1996 Panel							
January 1996	263,864	21,053	11,065	9,988	8.0	52.6	47.4
February 1996	264,058	21,583	11,345	10,238	8.2	52.6	47.4
March 1996	264,254	22,039	11,550	10,489	8.3	52.4	47.6
April 1996	264,426	22,423	11,802	10,622	8.5	52.6	47.4
May 1996	264,617	22,070	11,605	10,465	8.3	52.6	47.4
Average							
Aug – Dec 95	263,506	23,393	10,787	12,606	8.9	46.1	53.9
Jan – May 96	264,244	21,834	11,473	10,360	8.3	52.6	47.4
Difference	+738	-1,559	+686	-2,245	-0.6	+6.4	-6.4

SOURCE: 1993 and 1996 SIPP panels.

FIGURE A.3

PERCENT OF AFDC/TANF RECIPIENTS THAT IS AGE 18 OR OLDER



The change in the adult FSP proportion appears to have been driven partially by errors in SIPP processing. In the 1996 panel, there was a sharp increase in the number of households with children in which one or more adults were covered by food stamps, but the children of those adults were not covered. Among households with children and with adults covered by food stamps, 87.7 percent (unweighted) had all children covered by food stamps before the 1996 panel (Table A.2). That proportion fell to 81.6 percent in the 1996 panel, with a concurrent increase in both the proportion of households in which some but not all children were covered and in which no children were covered.

The cause of this change in coverage is unknown. We speculate that in processing the 1996 panel of SIPP data, algorithms used to assign FSP status to children under 15 were not working as intended.

If this is the case, then a basic algorithm to impute FSP participation among children could be used to improve FSP-based estimates in the 1996 panel. We constructed a simple algorithm to assign FSP coverage to children.[26] In households where a parent was covered by food stamps, we assigned food stamp coverage to all of their children not already flagged as being covered. Applying this algorithm to all panels, we saw a small increase in the number of children covered in the pre-1996 panels and a large increase in the 1996 panel, bringing all panels to about the same proportions (Table A.3). Pre-1996 estimates of the proportion of FSP households with children in which all children were covered increase from 87.7 percent to 91.8 percent, and 1996-based estimates increased from 81.6 percent to 91.9 percent. This algorithm likely over-corrected for the problem—as reflected in the pre-1996 data—because there may have been

[26] This algorithm was not used in constructing estimates of replacement and exit rates in the body of this report.

TABLE A.2

ADULT AND CHILD FSP COVERAGE IN THE SIPP

	Percent of All Households with Children and with Some or All Adults Covered by FSP					
	Unweighted			Weighted		
	All Children Covered	Some But Not All Children Covered	All Children Not Covered	All Children Covered	Some But Not All Children Covered	All Children Not Covered
1992 and 1993 Panels						
1992	87.6	8.5	4.0	88.2	8.1	3.7
1993	88.3	7.7	4.0	89.0	7.4	3.6
1994	88.0	7.5	4.4	89.3	7.0	3.8
1995	86.9	7.3	5.9	88.6	6.7	4.7
1996 Panel						
1996	82.0	9.3	8.7	83.4	8.3	8.3
1997	81.4	9.2	9.5	81.6	8.9	9.5
1998	81.4	9.7	8.9	82.3	9.1	8.7
1999	81.6	8.4	10.0	83.0	8.0	9.0
Average						
1992-1995	87.7	7.7	4.6	88.8	7.3	3.9
1996-1999	81.6	9.2	9.3	82.5	8.6	8.9

SOURCE: 1992, 1993, and 1996 SIPP Panels.

TABLE A.3

ADULT AND CHILD FSP COVERAGE IN THE SIPP REVISED
WITH IMPUTED FSP COVERAGE FOR CHILDREN

	Percent of All Households with Children and with Some or All Adults Covered by FSP					
	Unweighted			Weighted		
	All Children Covered	Some But Not All Children Covered	All Children Not Covered	All Children Covered	Some But Not All Children Covered	All Children Not Covered
1992 and 1993 Panels						
1992	91.9	5.2	3.0	92.4	4.9	2.7
1993	92.4	4.8	2.8	93.2	4.3	2.5
1994	91.8	5.0	3.2	93.0	4.4	2.6
1995	91.0	4.8	4.2	92.3	4.2	3.5
1996 Panel						
1996	91.7	4.9	3.4	92.1	4.6	3.3
1997	91.8	4.5	3.7	92.3	4.2	3.5
1998	91.9	4.7	3.4	93.0	4.0	2.9
1999	92.0	3.8	4.1	93.1	3.3	3.6
Average						
1992-1995	91.8	4.9	3.3	92.7	4.5	2.8
1996-1999	91.9	4.5	3.7	92.6	4.0	3.3

SOURCE: 1992, 1993, and 1996 SIPP Panels.

some circumstances in which children living with parents covered by the FSP were not themselves covered by the FSP.

Problems with FSP coverage flags for children in the 1996 panel do not explain the entire shift in the FSP adult proportion. When we examined the proportion of FSP adult participants after implementing our imputation algorithm, the proportion in 1996 was between 50 and 52 percent, still several percentage points higher than in earlier SIPP panels or in FSPQC data (Figure A.4).

The remainder of the shift in the adult proportion likely resulted from differences in the sample of individuals reporting FSP participation between the pre-1996 and 1996 panels. This can be seen by looking at the unweighted proportion of adults in the SIPP (Table A.4). These differences may reflect changes in the ability of the 1996 SIPP sample to capture FSP participants, or changes in the way that SIPP sample members report FSP participation. If the problem is driven by a different sample, the SIPP weights (which are not controlled to FSP targets) do not correct for the oversample of adult FSP participants. Users looking to correct for these differences could consider revising the SIPP weights to better control for FSP characteristics.

B. CHANGES IN FSP VOLATILITY

In examining patterns of entry and exit, we discovered that the FSP sample in the 1996 panel was significantly more volatile than those of earlier panels. Replacement and exit rates were uniformly higher by about two percentage points in the 1996 panel (Figures A.5 and A.6).[27]

[27] Replacement rates are defined as the number of new entrants in a given month divided by the previous month's caseload; exit rates are defined as the number of exiters in a given month divided by the previous month's caseload. See full report for details of how these rates are computed in SIPP and FSPQC.

It is unclear what caused the increase in volatility. However, the fact that the 1996 SIPP-based estimates of replacement and exit rates were more in line with FSPQC-based estimates of those rates leads us to suspect that the change constituted an improvement in the data. Indeed, it may be the case that changes to the 1996 panel estimates, such as the use of computer-assisted interviewing, could capture more program exits and entries each month. This is just speculation, however; the real cause of the increase in volatility is unknown.

C. CHANGES IN NEW ENTRANT HOUSEHOLDS WITH EARNINGS

There is some evidence that the sample of FSP participants in the 1996 SIPP panel differed systematically in terms of earnings. In pre-1996 panels, the proportion of new entrant households that had earnings generally was between 19 and 21 percent, while in the 1996 panel, the proportion was between 24 and 28 percent. This may indicate a difference in sample, but it may also reflect a real phenomenon. In the pre-1996 panels, the proportion of new entrant households with earnings was trending upward over time (Figure A.7). This trend could have peaked in early 1996 and leveled off. However, given the other evidence of differences in the SIPP sample, we must also consider the possibility that the 1996 sample included more new entrant households with earnings.

FIGURE A.4

PROPORTION OF FSP PARTICIPANTS THAT IS ADULT AGE 18 OR OLDER
ORIGINAL VS. REVISED SIPP ESTIMATES

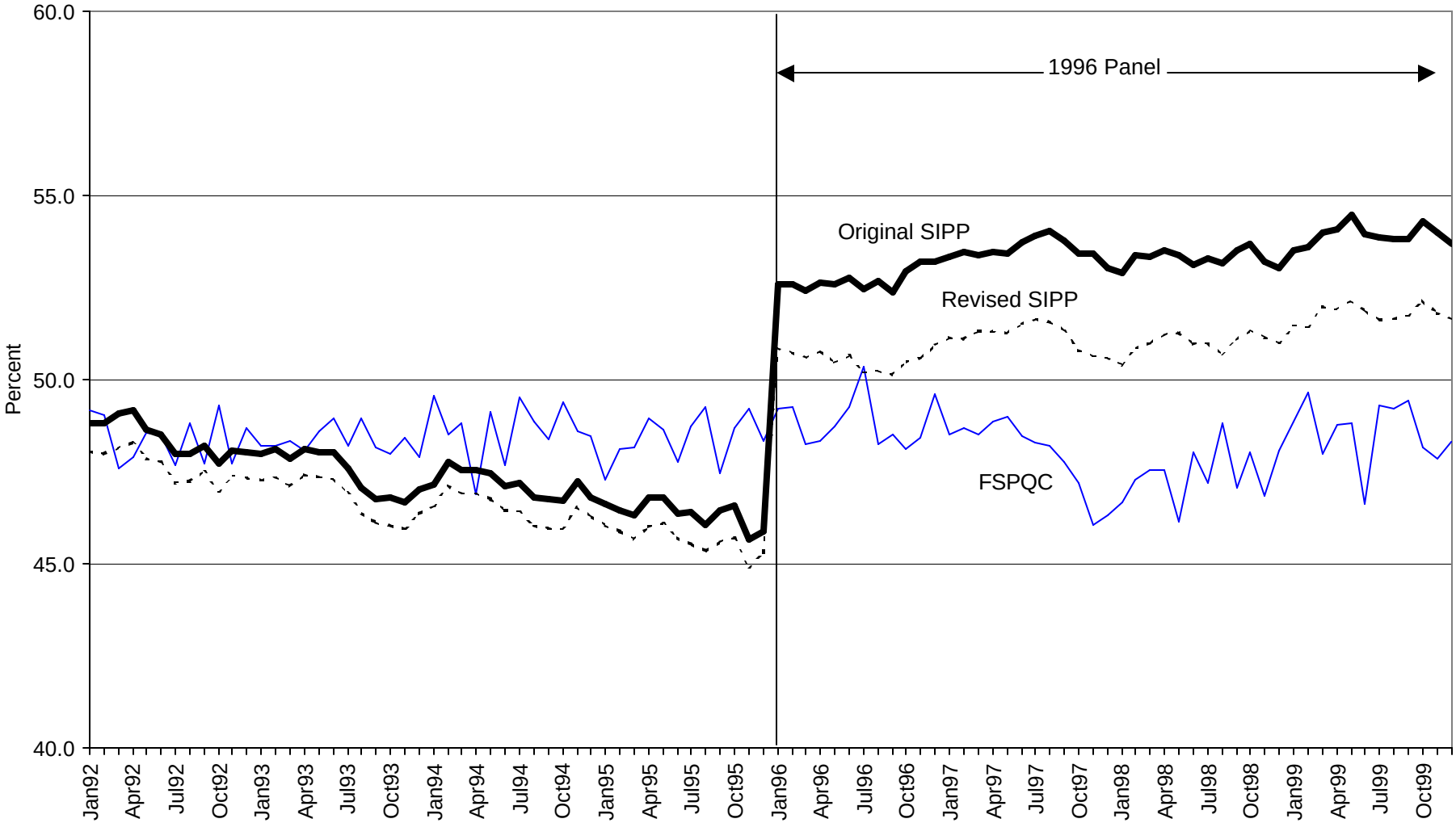


TABLE A.4

PROPORTION OF ADULTS (18 OR OLDER)

	Percent of FSP that is Adult				
	SIPP, Unadjusted		SIPP, Adjusted		
	SIPP Unweighted	SIPP Weighted	SIPP Unweighted	SIPP Weighted	FSPQC
1992	47.0	48.4	46.2	47.6	48.4
1993	46.6	47.5	45.9	46.8	48.3
1994	47.1	47.2	46.4	46.5	48.6
1995	47.1	46.4	46.4	45.6	48.4
1996	51.7	52.7	49.6	50.5	48.8
1997	52.4	53.5	50.1	51.2	48.0
1998	53.3	53.3	51.0	51.0	47.4
1999	54.9	53.9	52.6	51.8	48.6
Average					
1992-1995	46.9	47.4	46.2	46.6	48.4
1996-1999	53.0	53.4	50.8	51.1	48.2

FIGURE A.5

REPLACEMENT RATES
1990 THROUGH 1999

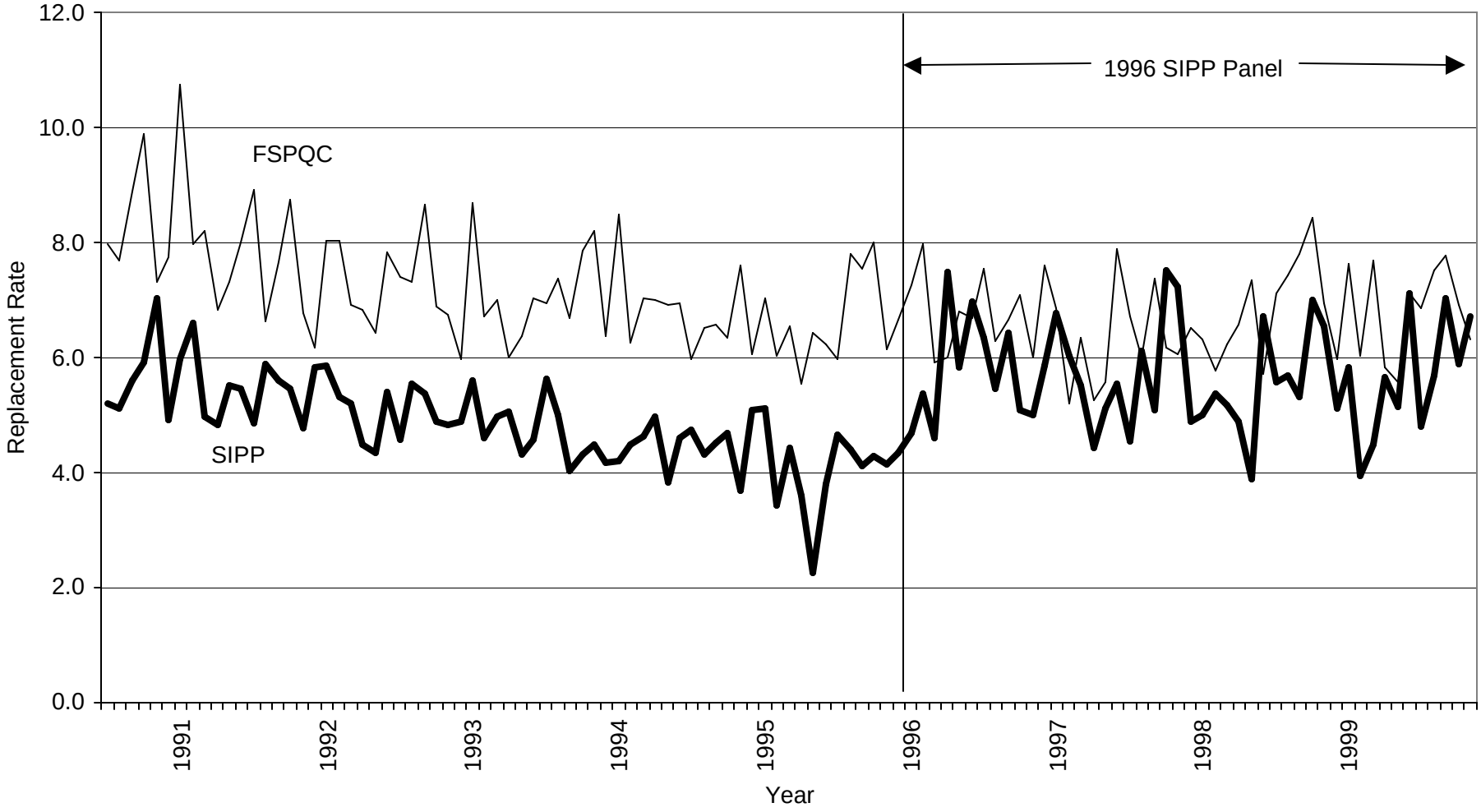


FIGURE A.6

EXIT RATES
1990 THROUGH 1999

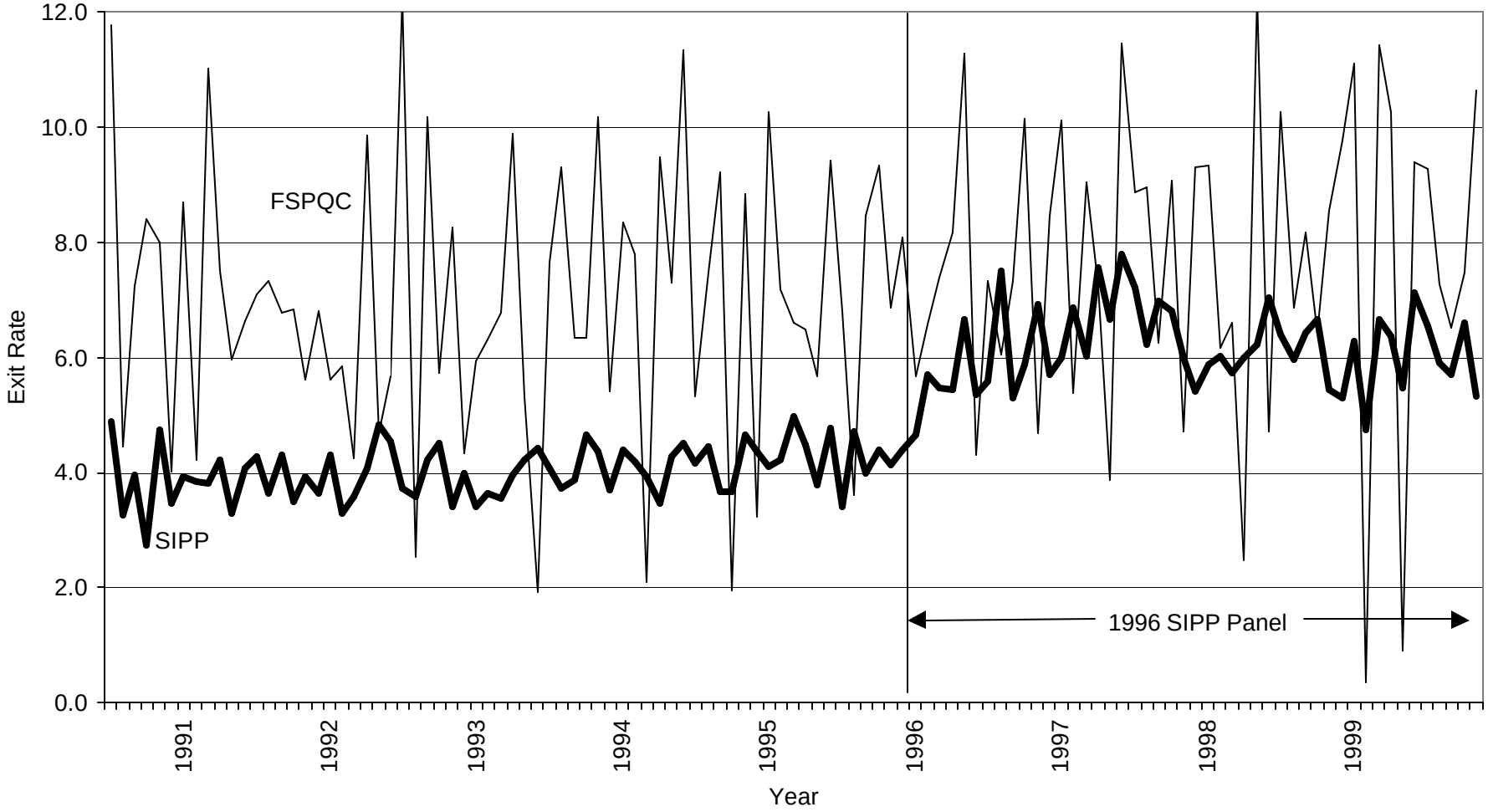


FIGURE A.7

NEW ENTRANT FSP HOUSEHOLDS WITH EARNINGS
SIPP, 1990 THROUGH 1999

D. CONCLUSIONS

FSP-based estimates derived from the 1996 SIPP panel were inconsistent with estimates of earlier panels. The 1996 SIPP panel estimates may have had an error in the way in which child FSP coverage was assigned. Children of FSP participants were flagged as being covered by food stamps at a much lower rate than in earlier panels. In addition, the sample of FSP participants appeared to be systematically different even after correcting for problems with coverage flags. The sample had disproportionate shares of adult and child participants, and participants entered and exited the FSP at higher rates relative to earlier panels. Furthermore, it may be the case that the sample included more FSP households with earnings.

The differences in the 1996 panel suggest that users should exercise caution when estimating FSP characteristics, particularly when comparing changes in FSP characteristics between the pre-1996 and 1996 panels. Additionally, if age is an important analysis variable, users should consider imputing child participation based on the parents' participation. Users looking at a limited number of characteristics in addition to age may consider adjusting the SIPP weights to account for the sampling differences.

APPENDIX B

RESULTS FROM REGRESSIONS TO ADJUST SIPP REPLACEMENT AND EXIT RATES FOR INCREASED VOLITILITY IN 1996 PANEL

TABLE B.1

RESULTS FROM REGRESSIONS TO ADJUST SIPP REPLACEMENT
AND EXIT RATES FOR INCREASED VOLITILITY IN 1996 PANEL

	Total FSP		Single Mothers		Working Poor		Elderly		Noncitizens		ABAWDs	
	Replacement Rate	Exit Rate	Replacement Rate	Exit Rate	Replacement Rate	Exit Rate	Replacement Rate	Exit Rate	Replacement Rate	Exit Rate	Replacement Rate	Exit Rate
Intercept	4.312 *	2.480 *	2.705 *	0.366	6.883 *	10.435 *	4.460 *	2.812 *	2.839 *	3.224 *	19.785 *	10.796 *
	(0.948)	(0.640)	(0.748)	(0.526)	(1.807)	(3.098)	(1.245)	(0.913)	(1.425)	(1.320)	(3.911)	(4.322)
Time Trend	-0.013	-0.002	0.008	0.015	-0.024	-0.029	-0.028 *	0.001	0.033	0.004	-0.038	0.018
	(0.009)	(0.007)	(0.010)	(0.012)	(0.017)	(0.019)	(0.014)	(0.011)	(0.023)	(0.023)	(0.044)	(0.047)
Season Flags												
Summer	0.623 *	0.080	0.004	-0.099	0.574	0.287	0.392	0.007	0.051	0.565	-0.987	1.079
	(0.263)	(0.209)	(0.295)	(0.276)	(0.523)	(0.501)	(0.360)	(0.335)	(0.684)	(0.683)	(1.334)	(1.471)
Fall	0.624 *	-0.119	0.395	0.107	0.633	0.405	0.478	0.158	-0.205	-0.128	-2.147	3.212 *
	(0.268)	(0.201)	(0.281)	(0.269)	(0.511)	(0.501)	(0.356)	(0.330)	(0.665)	(0.725)	(1.347)	(1.455)
Winter	0.257	-0.287	0.185	0.201	0.877 *	0.110	0.254	-0.024	0.804	-0.830	1.162	1.341
	(0.260)	(0.193)	(0.279)	(0.267)	(0.508)	(0.509)	(0.359)	(0.326)	(0.660)	(0.658)	(1.292)	(1.456)
Lagged Rate	0.048	0.452 *	-0.050	0.578 *	0.099	0.163	-0.155	-0.072	-0.226	0.268	-0.464 *	-0.119
	(0.179)	(0.159)	(0.221)	(0.159)	(0.207)	(0.240)	(0.243)	(0.244)	(0.221)	(0.207)	(0.224)	(0.276)
1996 Panel Flag	**1.759** *	**1.177** *	**0.542**	**0.226**	**2.211** *	**1.410** *	**1.941** *	**0.853** *	**0.483**	**1.150**	**2.384**	**3.647**
	(0.447)	(0.353)	(0.393)	(0.375)	(0.806)	(0.836)	(0.699)	(0.512)	(0.933)	(0.914)	(1.850)	(2.383)
R Square	0.493	0.493	0.217	0.217	0.258	0.258	0.198	0.198	0.172	0.172	0.143	0.143

TABLE B.2

AVERAGE MONTHLY GROWTH, REPLACEMENT, AND EXIT RATES,
1990 THROUGH 1999ESTIMATES USING UNADJUSTED SIPP DATA

Period	Average Monthly Growth Rate	Average Monthly Replacement Rate	Average Monthly Exit Rate
Caseload Growth I: 1990-1993			
August 1990 – July 1991	0.96	5.6	3.8
August 1991 – July 1992	0.70	5.2	3.9
August 1992 – July 1993	1.24	5.0	3.9
Overall	*0.97*	*5.3*	*3.9*
Caseload Decline I: 1993-1996			
August 1993 – July 1994	-0.23	4.4	4.1
August 1994 – July 1995	0.10	4.1	4.2
August 1995 – July 1996	-0.46	5.2	5.0
Overall	*-0.20*	*4.6*	*4.5*
Caseload Decline II: 1996-1999			
August 1996 – July 1997	-1.40	5.5	6.6
August 1997 – July 1998	-0.91	5.6	6.2
August 1998 – October 1999	-0.45	5.7	6.1
Overall	*-0.88*	*5.6*	*6.3*
Overall 1990-1999	**-0.06**	**5.2**	**4.9**

SOURCE: SIPP data for years shown.