

ESTIMATING THE PROBABILITIES AND PATTERNS
OF FOOD STAMP USE ACROSS THE LIFE COURSE¹

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EXECUTIVE SUMMARY

This paper outlines a fundamentally different approach toward measuring food stamp participation in the United States. Rather than looking at cross-sectional rates or spell dynamics, we employ a procedure that allows us to estimate the life course patterns and probabilities of food stamp use. The approach described here builds upon our earlier work measuring the life course patterns of poverty (Rank and Hirschl, 1999a; 1999b; 1999c; 2001a; 2001b). Thirty waves of the Panel Study of Income Dynamics data set are merged in order to build a series of life tables detailing the cumulative probabilities of participating in the Food Stamp Program. Two periods of the life course are examined: childhood (ages 1 to 20) and working age adulthood (ages 20 to 65). Within each of these periods we estimate the overall likelihood of food stamp use, the total and consecutive number of years that food stamps is accessed, and the impact that race, education, gender, and marital status have upon the likelihood of using the Food Stamp Program. Our results indicate that 49 percent of all American children will at some point during their childhood receive food stamps, while 51 percent of Americans between the ages of 20 and 65 will do so. In addition, the use of food stamps tends to occur over relatively short periods of time. Race, education, and marital status exert a profound influence on altering the probabilities of participating in the Food Stamp Program. These overall life course patterns indicate the widespread need and utilization of the nation's largest food assistance program.

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Understanding the extent to which Americans utilize the Food Stamp Program has been a question of long standing concern to policy analysts. In this paper we outline a fundamentally different approach toward addressing this question. Rather than focusing on cross-sectional participation rates, or the modeling of spell dynamics, we utilize a procedure that allows us to estimate the life course probabilities and patterns of food stamp use for the United States population. Such an approach provides an empirical understanding into the range and scope of the Food Stamp Program within the wider context of the American life course.

By doing so, several critical pieces of policy information can be obtained for the first time. For example, what percentage of the population will at some point utilize the Food Stamp Program? What is the total and consecutive number of years of food stamp use during childhood and adulthood for those utilizing the program? How do these odds vary by race, education, gender, or marital status? These and other questions can be addressed by employing a life table methodology. Such knowledge is critical in empirically assessing the U.S. population's need and use of the Food Stamp Program. This paper represents an introductory step toward gathering such information.

We begin by briefly reviewing the current knowledge base regarding the dynamics of food stamp reciprocity. We then discuss a life course approach as an alternative means to understanding food stamp utilization. This is followed by a review of our methodological and analytical approach. Results are presented which look at the overall patterns of food stamp use for both children and working age adults. Finally, a discussion follows that raises several policy implications of this work.

CURRENT KNOWLEDGE REGARDING FOOD STAMP USE

The current research understanding into the patterns of food stamp use has been largely predicated upon three approaches - 1) estimating cross-sectional participation rates in the Food Stamp Program and how these have varied over time; 2) modeling the determinants related to whether eligible households do or do not participate in the Food Stamp Program; and 3) measuring the longitudinal patterns of food stamp spells. These analyses have been based upon cross-sectional data sets (e.g., the Current Population Survey, National Survey of America's Families, Food and Nutrition Service's Quality Control Data) and panel data sets (e.g., the Survey of Income and Program Participation, the Panel Study of Income Dynamics).

During the past 25 years, participation rates in the Food Stamp Program have averaged between approximately 7 and 10% of the total U.S. population (House Committee on Ways and Means, 1994; Wilde et al., 2000). Those who are more likely to be receiving food stamps include children, the disabled, nonwhites, individuals with less education, the unemployed, and those residing in female headed families (Rosso and Fowler, 2000; U.S. Bureau of the Census, 1999). These findings, not surprisingly, mirror the characteristics that have been shown to be strongly associated with poverty.

Recent analyses have focused on the decline in food stamp usage from 1994 to the present (Castner, 2000; Gundersen, LeBlanc and Kuhn, 1999; Kornfeld, 2002; Schirm, 2001; U.S. General Accounting Office, 1998; Wilde et al., 2000; Zedlewski and Brauner, 1999; Zedlewski and Gruber, 2001). During this period, the food stamp rolls have decreased from 27.5 million participants in 1994, to 18.2 million participants in 1999 (Wilde et al., 2000).

Analyses have indicated that much of this decline can be attributed to the robust economy of

the 1990's, as well as to the substantial eligibility, benefit, and programmatic changes at the state and federal levels regarding social welfare.

A second body of work has sought to understand the factors and dynamics related to why or why not eligible households participate in the Food Stamp Program (Blank and Ruggles, 1996; Bollinger and David, 1997; Coe, 1983; Daponte, Sanders, and Taylor, 1999; Hirschl and Rank, 1991; 1999; Ohls and Beebout, 1993; Rank and Hirschl, 1993; 1995; Ranney and Kushman, 1987; U.S. General Accounting Office, 1990; 1998). Over the past 25 years, the percent of eligible participants in the Food Stamp Program has averaged between approximately 50 and 60 percent (Gundersen et al., 1999; Trippe et al., 1992). Policy analysts have sought to understand why more eligible households do not participate in the program.

Research has indicated that the factors of awareness and accurate information regarding the Food Stamp Program are critical, along with individuals' attitudes and sense of stigma attached to participating in a means tested welfare program. For example, using data from the Panel Study of Income Dynamics (PSID), Rank and Hirschl (1993) found strong empirical support for a conceptual model that predicted higher levels of participation rates in the Food Stamp Program as a result of more accurate eligibility information, coupled with less adverse attitudes toward participating in a welfare program.

A third focus of research has estimated the dynamics and determinants of food stamp spells (Burstein, 1993; Gleason et al., 1998; Hollonbeck and Ohls, 1984). This work has revealed parallel findings to studies that have addressed the dynamics of welfare use in general (Bane and Ellwood, 1994; Blank, 1997; Boisjoly et al., 1998; Duncan, 1984; Rank, 1994; Sandefur and Cook, 1998). Most spells of food stamp use are of fairly short duration, while rates of recidivism are relatively high. Key factors leading to the use of food stamps as well as those which predict longer lengths of participation in the Food Stamp Program include an

individual's economic circumstances and human capital (e.g., unemployment, less education, disability status) and their household structure (e.g., female headed families with children).

A LIFE COURSE APPROACH

The above body of research has added much to our understanding into the scope and dynamics of food stamp use. Yet there is an alternative way of longitudinally conceptualizing and measuring the use of food stamps. This approach places food stamp participation within the context of the life course. Food stamp use is then analyzed as an event which may or may not occur across the life course. The lifespan risk of using food stamps constitutes a fundamentally different approach than either a cross-sectional analysis or an analysis of spell length and durations.

Various questions come to mind. To what extent is food stamp use a "normal" life course event? How does the risk of using food stamps vary across the early, middle, and later stages of the life course? What are the lifetime probabilities of encountering short spells of food stamp use versus longer spells? How do race, education or gender impact upon the long term life course odds of using the Food Stamp Program? These and many other questions can be analyzed through a life course methodology.

Analyzing the use of food stamps as a life course risk and event constitutes a fundamentally different approach than either a cross-sectional analysis or an analysis of spell length and duration. By utilizing a life table methodology, policy analysts can begin to estimate the degree to which a particular need (such as food assistance) is present throughout the life course.

The concept of the life course has had a long and distinguished history within the social and applied sciences (Settersten and Mayer, 1997). It has proven to be an extremely helpful tool in thinking about the manner in which individual lives unfold (Elder, 1995). The term itself refers to "social processes extending over the individual life span or over significant portions of it, especially [with regard to] the family cycle, educational and training histories, and employment and occupational careers" (Mayer and Tuma, 1990: 3). Yet as Settersten and Mayer point out, "While these dimensions describe the primary activities across life, a more complete picture of the life course must also include more marginal periods and events – such as brief periods of training, second or part-time jobs, periods of unemployment or sickness" (1997: 252). And certainly we would add poverty, food insecurity, and the use of food stamps to this list.

The current paper builds upon our earlier work detailing the life course risk of poverty. These results have indicated that during adulthood, two thirds of Americans will experience at least one year of impoverishment (Rank and Hirschl, 1999a). The odds of encountering poverty across the adulthood years are significantly raised for African Americans and those with lower levels of education. For example, between the ages of 25 and 75, over 90% of African Americans with less than 12 years of education will experience at least one year of poverty (Rank and Hirschl, 2001a). Americans falling below the poverty line do so for generally one or two consecutive years. However, once an individual experiences poverty, they are quite likely to encounter poverty again (Rank and Hirschl, 2001b). Additional analyses have estimated the likelihood of poverty during the periods of childhood and old age. Between the ages of 1 and 17, 34% of American children will have spent at least one year below the poverty line, while 40% will have experienced poverty or near poverty (Rank and Hirschl, 1999b).

This body of research has empirically estimated the magnitude and approximate level of risk faced by Americans in terms of impoverishment. The analysis in this paper is intended to build upon the conceptual and methodological foundation established in this earlier body of work. Relying upon a life table methodology, we estimate the life course patterns of food stamp use. In order to do so, we turn to the Panel Study of Income Dynamics data set.

METHODOLOGY

Data Set

The Panel Study of Income Dynamics is a nationally representative, longitudinal sample of households and families interviewed annually since 1968. It constitutes the longest running panel data set in the United States. The PSID was specifically designed to track income dynamics over time. In addition, it tracks yearly household participation in an array of welfare programs, including the Food Stamp Program. It is therefore ideally suited for the purpose at hand.

The PSID initially interviewed approximately 4,800 U.S. households in 1968, collecting detailed information on roughly 18,000 individuals. The PSID track these individuals annually, including children and adults who leave their original households to form new households (for example, children leaving home, separations, divorce). Thus, the PSID is designed so that in any given year the sample is representative of the entire nonimmigrant U.S. population.

Throughout the analysis we employ the sampling weights in order to ensure that the PSID sample will accurately reflect the U.S. population. Specifically, we utilize the weights assigned to individuals for each given wave in order to take advantage of the PSID practice of adjusting weights annually to account for non-response bias.

The PSID interviews a primary adult in each household to obtain information about each member of the family. From 1968 to 1972, these interviews were conducted face to face. Since 1973 the majority of interviews have been carried out by telephone. Consequently, recent PSID waves consist of approximately 92 percent telephone interviews and 8 percent face-to-face interviews (as a result of respondents not having a telephone or having circumstances that prevent a telephone interview being feasible). The original response rate in 1968 was 76 percent. Since 1969 the annual response rates have ranged between 96.9 percent and 98.5 percent (PSID, 2001).

Although the PSID is without question the best available data set for the life table analysis presented in this paper, it is not without drawbacks. In particular, the cumulative nonresponse rate and the lack of representativeness of the immigrant population is problematic. For a more detailed discussion of the issues of data quality within the PSID, see Duncan and Hill (1989), Hill (1992), and Kim and Stafford (2000).

We rely upon both the household and individual levels of information from the initial wave of 1968, through 1997. Consequently, we draw upon 30 years of longitudinal information which translates into roughly 160,000 childhood years, and 260,000 adult person years of information embedded in the analysis for this paper.

Life Table Technique

Our analytical strategy is to use the household and demographic information on individuals throughout this 30-year period in order to construct a series of life tables that estimate the risk of food stamp use across the life course. Specifically, we examine the periods of childhood (ages 1 to 20) and working age adulthood (ages 20 to 65). Our preliminary analyses indicate that these periods are critical in terms of the risk of food stamp use (Rank and Hirschl, 2002a).

The life table is a technique that demographers and medical researchers often use. Although primarily found in mortality analyses, it can be applied to other areas of research as well (Namboodiri and Suchindran, 1987). The life table examines the extent to which specific events occur across intervals of time. The time intervals comprise each year an individual ages. During that year, one can calculate the probability of an event occurring (in this case, food stamp use) for those who have yet to experience the event. Once food stamp use has occurred (or within several of our analyses, various lengths of food stamp use), the individual is no longer at risk and therefore exits the life table. Based upon these age specific probabilities, the cumulative probabilities of an event occurring across the life course can be calculated. These cumulative probabilities represent the core of our analysis.

Individuals may contribute anywhere from 1 to 30 person years within the life table. For example, a woman within the PSID study who turned 20 in 1975, and then in 1979 experienced a year in which food stamps was used, would have contributed five person years within our analysis. In this case, she would be included in the estimates for ages 20, 21, 22, 23, and 24.

One of the consequences of this approach is that period effects are smoothed out both within and across the age intervals. For example, some of the approximately 12,000 individuals who are contained in our 20 year old group, are experiencing their 20th year in 1968, some in 1975, some in 1992, and so on. One of the results of this is that historical effects such as recessions will not unduly effect any particular age group or our hypothetical cohort as a whole. As noted earlier, during the period of 1968 to 1997, the overall use of food stamps was fairly stable, averaging between 7 and 10%.

In our analysis of childhood, all children enter the life tables at age 1, and then proceed through the life table accordingly. As a result, no left censoring is present. The life tables for

working age adulthood are constructed somewhat differently. In order to extend our analysis beyond the 30 years of data points contained in the PSID, we allow individuals in the adult life tables to enter the life tables at the ages at which they enter the study, rather than simply age 20. For example, an individual who was age 30 in 1968 (the start of the study) would be included in our 30-year-old age specific probabilities and then followed accordingly (although obviously he or she would be excluded from the 20 to 29-year-old age specific probabilities). This procedure enables us to extend the life table out to age 65. In addition, it allows us to use the full array of data found in the PSID, which ensures ample sample sizes for all age categories from which we derive our estimated probabilities.

A consequence of this approach, however, is that it may introduce left-censoring bias into the analysis. Left censoring occurs for individuals who enter the study in midstream and for whom we do not have information as to whether the event (in this case, food stamp use) has occurred prior to the age of entry. If the behavior of individuals who are left censored is similar to individuals who we know are not left censored (and therefore have yet to experience the event) then there is no bias introduced into the life tables (Allison, 1984; Namboodiri and Suchindran, 1987). However, one could argue in the case of food stamps use that the behavior of left-censored individuals may be slightly different in that some of them undoubtedly have experienced prior food stamp use at an earlier point in their unobserved ages. On the basis of previous research, we know that individuals who have experienced food stamp use in the past are at a greater risk of experiencing food stamp use in the future compared with individuals who have not experienced food stamp use. As a result, our age-specific and cumulative estimates in the life table could be upwardly biased.

Fortunately, we are able to detect and correct for such bias using a procedure we have employed earlier (Rank and Hirschl, 1999a; 1999c; 2001a; 2002b). First, we constructed our

life tables for the initial 25 years beyond age 20 (ages 21 to 45) according to the previously mentioned method. Then we produced a second group of life tables, but with the left-censored cases removed. By comparing the two, the pattern and extent of any bias resulting from left censoring could be examined. In general, the two sets of estimates were fairly close, with our original probabilities tending to be slightly higher than those without the left-censored cases. From these comparisons we could determine the overall amount and direction of bias in our original estimates. A correction factor then was used to adjust our age-specific life table probabilities accordingly. In this fashion we were able to detect and correct for the fact that left censoring was present in our estimations.

We estimate our life tables by pooling (beyond the starting age of each life table) the age-specific probabilities across five-year intervals. For adults these include five year averages of ages 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65. For children these included the averages of ages 2-5, 6-10, 11-15, and 16-20. Within each interval, the overall average age-specific probability was assigned to each of the five points within the interval and the cumulative probabilities calculated from these. This approach has the advantage of smoothing out any error as a result of small sample sizes in any individual age.

Measurement

Our measure of food stamp use is taken from a series of questions asked by the PSID interviewers as to whether the household had received specific cash or in-kind public assistance programs at some point during the prior year (very recent waves also include monthly data). With regard to food stamps, respondents were asked, “Did you (or anyone else in your family) use government food stamps at any time in [prior year]?”

If a household received food stamps, the individuals within the household are counted as receiving food stamps. In order to qualify for food stamps and to determine benefit levels, the individual members of a household must generally be accounted for on the application form. By its very nature, the Food Stamp Program is household based. In addition, previous research has demonstrated that assistance from food stamps is routinely shared and benefit all members within a household (Rank, 1994; Seccombe, 1998). Consequently, our approach of assigning individual food stamp receipt on the basis of household receipt would appear quite reasonable.

Finally, we should note that a household's use of food stamps during any given year may consist of varying months that they actually received food stamps. For some, that time may constitute the entire year, whereas for others, it may represent only one or two months. In both cases, however, the individuals within those households would be counted as receiving food stamps during the calendar year.

RESULTS

Two separate analyses are presented in this paper. First, we examine the life course patterns of food stamp use for children (ages 1 to 20), and second, we conduct a parallel analysis for working age adults (ages 20 to 65).

Children

Overall Patterns. The first column (1 or more years) of Table 1 contains the proportion of children who at some point during their childhood will participate in the Food Stamp Program. The cumulative percentages are 12.1 percent at age 1, 26.1 percent by age 5, 36.9 percent by age 10, 43.6 percent by age 15, and 49.2 percent by age 20. Consequently, approximately half of all American children will have received food stamps by the time they reach the age of 20. Although this is certainly an eye opening statistic, it is quite consistent with our earlier work indicating the widespread occurrence of poverty within a life course context (Rank and Hirschl, 1999a; 2001a) and welfare use in general (Rank and Hirschl, 2002b).

The top panel of Table 1 estimates the likelihood of experiencing various total number of years of food stamp receipt for children. As mentioned earlier, the individual years in this table refer to whether a household at any point during the calendar year utilized the Food Stamp Program (regardless of how many months they used the program). For example, if a child was in a household that received food stamps for four months when they were 3 years old, and then that household used food stamps for an additional month when they were 5, they would be counted at age 5 as having received food stamps in two years.

We can see that while nearly half of all children have been in a household that received food stamps in at least one year, approximately one third of children have been in households receiving food stamps in two or more years, 28.1 percent have been in households receiving foods stamps in 3 or more years, 26.4 percent in four or more years, and 22.8 percent in five or more years. Of children who have been in a household receiving food stamps, two thirds will do so more than once ($.3261/.4918 = .6631$), and 46 percent will so in five or more years ($.2278/.4918 = .4632$).

Table 1 about here

The bottom panel of Table 1 estimates the proportion of children who are in households receiving food stamps for various consecutive number of years. For example, if a child received food stamps when they were 6, 7 and 8 years old, at age 7 they would be counted as having received food stamps in two or more consecutive years, and at age 8 they would be counted as receiving food stamps in three or more consecutive years.

One quarter of children have received food stamps in two or more consecutive years, 19 percent in three or more consecutive years, 15.4 percent in four or more consecutive years, and 10 percent in five or more consecutive years. Thus, only 20 percent ($.0997/.4918 = .2027$) of children who receive food stamps will be in a household receiving the program in five consecutive years. Table 1 thus indicates that while the life course probability of food stamp use for children is quite high, the pattern of use tends to be of fairly short durations.

The Impact of Demographic Characteristics. Tables 2 and 3 examine the impact that race, education, and marital status have upon the likelihood of receiving food stamps during childhood. Table 2 examines the bivariate pattern of these characteristics, while Table 3 provides a multivariate context.

Looking first at Table 2, it is clear that each of these three characteristics exert a profound influence across the period of childhood in affecting the risk and need of food stamp use. Being black, having a head of household with less than 12 years of education, and residing in a non-married household, all result in substantially higher cumulative probabilities of using the Food Stamp Program during childhood. Thus, 89.9 percent of black children will have received food stamps by the time they reach age 20 (compared with 37.3 percent for white

children), 62 percent of children in households where the head has less than 12 years of education will have received food stamps (compared with 30.9 percent for children in households where the head has 12 or more years of education), and 91.2 percent of children that have been in non-married households during the entire length of their childhood will have participated in the Food Stamp Program (compared with 37.3 percent for children that have been in a married household).

Table 2 about here

What is apparent from this table is that even for children with more advantageous characteristics, there is still a significant risk of using food stamps during childhood. Yet that risk is dwarfed by the proportion of children receiving food stamps with less advantageous characteristics.

Another way of seeing this is in the following comparisons - black children by the age of 2 have a higher probability of using food stamps than white children who have gone through the entire span of childhood. Similarly, children who are age 1 in a nonmarried household have a higher probability of using food stamps than children who have reached the age of 20 in a married household.

In order to simultaneously assess the impact of race, education, and marital status upon the risk of using food stamps, a multivariate life table was built (see Guilkey and Rindfuss, 1987). To construct this table, separate logit models were estimated for ages 1 to 20, pooling the ages as described earlier in the methodology section. The independent variables included

race, household head's education, and household head's marital status. From these models a series of logit coefficients were obtained, which were then transformed into life table age-specific and cumulative probabilities (see Rank and Hirschl, 1999c, for a more detailed description of this procedure).

Table 3 about here

This technique allows us to track the childhood risk of food stamp use for children with various combinations of the above characteristics. Table 3 is arranged such that those with the least likelihood of using food stamps are in the upper left-hand portions of the table, whereas those with the greatest likelihood of using food stamps are located in the lower right hand portions of the table.

Table 3 illustrates the profound impact that race, education and marital status have in combination upon the probabilities of using food stamps during childhood. Children who are white and whose head of household is married and has 12 or more years of education, have a cumulative percentage of receiving food stamps by age 20 of 21 percent. On the other hand, by the age of 10, virtually all (97 percent) of black children in non-married households whose head has less than 12 years of education will have received food stamps.

The individual effects of race, education, and marital status can be easily observed by comparing children with matched characteristics on the other two variables. For example, if we look at white children whose head of household has less than 12 years of education, such children who are in a married household have a cumulative percentage of food stamp use of

40.1 percent by the age of 20. However, if they are in a non-married household, their cumulative percentage is 87.7 percent. In general, each of these characteristics exert a powerful influence upon altering the likelihood of receiving food stamps, with marital status being the strongest, followed by race and education.

Working Age Adults

Tables 4, 5, and 6 focus on the cumulative probabilities of food stamp use during working age adulthood, defined here as the ages of 20 and 65. As noted earlier, in order to extend our life tables beyond the 30 years of data contained in the PSID (waves 1968 - 1997), we allow individuals to enter our life tables at the age at which they enter the PSID data set. We then apply a correction factor to adjust for any left-censoring bias that may result from this.

Overall Patterns. The first column of Table 4 (1 or more years) contains the overall cumulative probabilities of individuals using the Food Stamp Program across adulthood. At the start of the table, 9.6 percent of 20 year olds have received food stamps (this is identical to what the cross-sectional rate of food stamp use for 20 year olds would be between the period of 1968 through 1997). By the time adults have reached the age of 35, 34.2 percent have received food stamps. At age 50, the cumulative percentage is 44.4, and by age 65, 50.8 percent of Americans have participated in the Food Stamp Program. As with children, we can see that the extent to which the Food Stamp Program is utilized by adults is extremely wide when a life table methodology is applied.

Table 4 about here

Table 4 also indicates that the typical pattern of food stamp use across the life course is that once an individual has used the program, they are quite likely to do again at some future point. Consequently, 74 percent (.3763/.5079) of those who have used food stamps will utilize the program in at least one additional year. By the age of 65, 37.6 percent of the population have used food stamps in two or more years, 32.6 percent in three or more years, 29.1 percent in four or more years, and 23.8 percent in five or more years.

The bottom panel of Table 4 indicates that the use of food stamps tends to occur over fairly short periods of time. Consequently, while 50.8 percent of the population will use food stamps in at least one year, only 9.9 percent will do so in five consecutive years. These patterns are quite consistent with our earlier life tables of children's patterns of food stamp use, and with prior studies on the dynamics of poverty and welfare use. That is, most people who are poor or who use welfare do so for fairly short periods of time, yet they also quite likely to experience poverty or welfare use at a later point.

The Impact of Demographic Characteristics. Tables 5 and 6 examine the impact of race, education, and gender upon the probabilities of using food stamps during adulthood. Table 5 illustrates that both race and education exert a strong influence upon the life course probabilities of using food stamps. For African Americans, approximately one quarter have used food stamps at age 20. By age 25, roughly half will have received food stamps, by age 35, two thirds, and by age 55, four out of five black Americans will have participated in the Food Stamp Program. This is in contrast with white Americans, where one third of whites will have used food stamps by the age of 55, and 37.3 percent by age 65.

Table 5 about here

Education also exerts a strong influence over the life course probabilities of using food stamps. Between the ages of 20 and 65, 64.3 percent of adults with less than 12 years of education will have used food stamps compared with 38.3 percent of adults with 12 or more years of education.

On the other hand, the influence of gender is slight. Women are more likely to use food stamps than men, yet the difference is a relatively small. By age 65, 51.8 percent of females will have used food stamps compared with 45.6 percent of males.

Table 6 contains the cumulative proportions from the multivariate life table analysis. Several patterns are apparent from this table. We can see again that race, education, and to a much lesser extent, gender, exert a strong influence upon the likelihood of using food stamps across adulthood. For example, 27.3 percent of white males with 12 or more years of education will use the Food Stamp Program by the time they reach age 65, whereas for black males with 12 or more years of education, the percentage is 71.7. Similarly if we compare whites and blacks on other matched characteristics we see the same pattern.

Likewise, education has a strong influence on the chances of using the Food Stamp Program across adulthood. Thirty one percent of white females with 12 or more years of education will use food stamps by the age of 65, compared with 47.9 percent for her white counterpart with less than 12 years of education.

Table 6 about here

In contrast to race and education, gender again exerts a relatively mild influence upon the likelihood of food stamp use across the life course. Our earlier work on the life course risk of poverty has revealed similar patterns (Rank and Hirschl 2001a; 2001b). We posit two reasons for this finding. First, the Food Stamp Program is broader in terms of its eligibility requirements when compared to a program such as TANF which is primarily directed to women with children. Second, had we focused only upon female headed families with children, the rate of food stamp use would be quite high (as they were for children in non-married families in Tables 2 and 3, which are primarily female headed families). However, analyzing gender as a whole produces more equivalent rates of food stamp use between men and women since women spend the vast majority of their adult lives outside of female headed households. In particular, men and women find themselves married throughout a significant portion of the life course. For example, using 1980 age specific marriage rates (which represents roughly the mid point of our 1968 to 1997 time frame) Sweet and Bumpass (1986) estimate that men will spend 28 years in marriage between the ages of 20 and 59, while for women the number is 27 years. Consequently, women and men will experience identical odds of welfare use during roughly 70 percent of the time between ages 20 and 59. This results in a dramatic narrowing of gender differences. As Lieberman (1994) has argued, marriage tends to mitigate the effects of gender in terms of economic stratification.

DISCUSSION

The analysis presented in this paper represents an initial application of a life table methodology to analyzing the nation's utilization of the Food Stamp Program. Our results indicate that the use of food stamps is quite common, both during the periods of childhood and working age adulthood. Forty nine percent of American children have received food stamps by the time they reach the age of 20, whereas 51 percent of Americans between the ages of 20 and 65 will participate in the Food Stamp Program. The fact that approximately half of all children and adults will utilize the Food Stamp Program, illustrates the widespread reach of the nation's largest food assistance program. This is in sharp contrast to the belief that the use of welfare, including food stamps, is something that happens to someone else and is atypical of the American experience. Rather, the use of food stamps would appear to be a common American experience that at least half the population will face.

Our results also indicate that the use of food stamps across the life course tends to occur over relatively short periods of time. For example, while half of all children will receive food stamps, only one out of ten will do so in five consecutive years. Yet once a household has used food stamps, they are quite likely to use the program again at some future point. These findings are consistent with earlier work that has examined the life course patterns of poverty, as well as the bulk of research that has examined the spell dynamics of poverty and welfare use. The use of the social safety net, such as the Food Stamp Program, tends to be relatively wide, but its grip tends to be fairly weak. Although some individuals undoubtedly use food stamps for long periods of time, the majority of Americans rely on the Food Stamp Program to provide short term assistance. This suggests that the social safety net is largely operating as many Americans indicate they would like it to operate (Gilens, 1999).

Third, this paper has demonstrated that race, education, and marital status have a profound impact upon altering these odds. Black Americans, those who have not graduated from high school, and children residing in non-married households have sharply elevated cumulative rates of using the Food Stamp Program. Yet surprisingly, our analyses indicated that gender exerts very little influence upon the cumulative probabilities of using food stamps.

Taken as a whole, these results would appear to underscore the existence of economic vulnerability in America within the context of the life course. This is congruent with and builds upon our previous findings demonstrating that two thirds of Americans will fall below the poverty line between the ages of 20 and 85 (Rank and Hirschl, 1999a), or that three quarters of Americans will experience poverty or near poverty (e.g., households falling below 125 percent of the poverty line; Rank and Hirschl, 1998).

This suggests that the current free market economic structure brings with it periods of economic uncertainty in the lives of its participants (Rank, 2001). A consequence of this economic vulnerability is that many Americans will turn to the social safety net in order to help them through these periods of economic turmoil. In particular, a number of Americans will turn to the Food Stamp Program during these periods of time. While the U.S. welfare state has been described as minimalist in terms of the scope and level of benefits it offers to the impoverished, it is far from minimalist in the extent to which it is eventually relied upon by the general population.

Economic vulnerability and the use of food stamps is also associated with food insecurity, which can be defined as “being uncertain of having, or being unable to acquire, enough food to meet basic needs because of a lack of money or other resources” (Nord et al., 2002a). As Nord et al. (2002b) point out, although “the relationship between food assistance program use and food security is complex . . . it is the more food-insecure households, having

greater difficulty meeting their food needs, that seek assistance from the programs” (2002: 26). Indeed, Nord et al. (2002b) have estimated that slightly over half (51.8 percent) of all households receiving food stamps are also food insecure, compared with 10.5 percent for the overall population.

If we use the figure that roughly one half of all households receiving food stamps in any given year will also experience food insecurity during that year, we can estimate a lower boundary with respect to the life course risk of food insecurity. The reason for this constituting a lower boundary is that a number of individuals who have never received food stamps experience food insecurity, which in turn would elevate our estimate derived solely from food stamp participation.

Based upon the overall proportions in Tables 1 and 4 (and factoring in the fact that particular percentages of individuals in the one or more years column receive food stamps multiple times and thereby increase their risk of food insecurity), we can estimate that no less than 39 percent of children will encounter food insecurity at some point during their childhood, while at least 42 percent of individuals who reach the age of 65 will encounter food insecurity at some point during their working age adulthood. These percentages represent a very rough life course estimation of the lower bounds of food insecurity, based upon individual lifetime food stamp use and the knowledge that approximately half of food stamp recipients at any point in time are also food insecure.

What this approach once again illustrates is that although a particular risk such as food insecurity is relatively low in any particular year (e.g. 10 to 12 percent), the risk itself becomes sizeable as individuals traverse the life course. As we have noted earlier, public policy by its very nature is concerned with the concept of risk (Rank and Hirschl, 2001c). A life course

approach would appear extremely valuable in revealing the full magnitude and extent of such risks.

In conclusion, the results in this paper indicate that the use of the Food Stamp Program (and its accompanying food insecurity) occurs across a surprisingly wide segment of the American population. Being able to empirically demonstrate these patterns is vital in demonstrating the food assistance needs of Americans as they make their way from the early years of childhood through the later years of adulthood.

Table 1. Cumulative Proportions of Children Experiencing Various Years of Food Stamp Receipt

Age	<u>Years of Food Stamp Receipt</u>				
	1 or More Years	2 or More Years	3 or More Years	4 or More Years	5 or More Years
Total Years Experienced					
1	.1209	-	-	-	-
5	.2608	.1728	.1292	.0909	.0449
10	.3593	.2518	.2213	.1885	.1609
15	.4358	.2948	.2596	.2325	.2036
20	.4918	.3261	.2810	.2636	.2278
Consecutive Years Experienced					
1	.1209	-	-	-	-
5	.2608	.1409	.0845	.0651	.0449
10	.3593	.2044	.1418	.1141	.0839
15	.4358	.2352	.1726	.1392	.1058
20	.4918	.2574	.1899	.1540	.1151

Table 2. Cumulative Proportions of Children Experiencing Food Stamp Receipt by Race, Household Head's Education, and Household Head's Marital Status

Age	<u>Race</u>		<u>Education</u>		<u>Marital Status</u>	
	White	Black	GE 12	LT 12	Mar.	Not Mar.
1	.0801	.3307	.0799	.1557	.0794	.4254
5	.1879	.6189	.1738	.3313	.1799	.7114
10	.2642	.7697	.2290	.4589	.2601	.8265
15	.3268	.8528	.2730	.5544	.3246	.8839
20	.3729	.8986	.3092	.6200	.3696	.9124

Table 3. Multivariate Life Table Analysis of Food Stamp Receipt for Children with Various Demographic Characteristics

Age	<u>White</u>		<u>Black</u>	
	<u>GE 12</u>	<u>LT 12</u>	<u>GE 12</u>	<u>LT 12</u>
	<u>Married</u>			
1	.0460	.0783	.1022	.1670
5	.1154	.1957	.2691	.4227
10	.1542	.2841	.3655	.5979
15	.1861	.3563	.4404	.7143
20	.2101	.4013	.4986	.7804
	<u>Not Married</u>			
1	.2483	.3678	.4382	.5787
5	.4458	.6309	.7458	.8900
10	.5351	.7641	.8518	.9701
15	.5957	.8385	.9051	.9906
20	.6393	.8771	.9370	.9963

Table 4. Cumulative Proportions of Working Age Adults Experiencing Various Years of Food Stamp Receipt

Age	<u>Years of Food Stamp Receipt</u>				
	1 or More Years	2 or More Years	3 or More Years	4 or More Years	5 or More Years
Total Years Experienced					
20	.0961	-	-	-	-
25	.2204	.1308	.0864	.0758	.0363
30	.2904	.1929	.1450	.1325	.0889
35	.3417	.2325	.1879	.1682	.1246
40	.3871	.2686	.2169	.1968	.1476
45	.4169	.2955	.2464	.2203	.1718
50	.4438	.3170	.2666	.2369	.1880
55	.4642	.3364	.2897	.2578	.2055
60	.4881	.3573	.3067	.2754	.2219
65	.5079	.3763	.3260	.2912	.2383
Consecutive Years Experienced					
20	.0961	-	-	-	-
25	.2204	.0988	.0579	.0409	.0202
30	.2904	.1450	.0921	.0665	.0379
35	.3417	.1751	.1170	.0870	.0522
40	.3871	.1988	.1342	.1017	.0618
45	.4169	.2174	.1483	.1123	.0696
50	.4438	.2336	.1603	.1213	.0765
55	.4642	.2475	.1722	.1299	.0832
60	.4881	.2632	.1864	.1408	.0905
65	.5079	.2786	.1987	.1517	.0989

Table 5. Cumulative Proportions of Working Age Adults Experiencing Food Stamp Receipt by Race, Education, and Gender

Age	<u>Race</u>		<u>Education</u>		<u>Gender</u>	
	White	Black	GE 12	LT 12	Male	Female
20	.0626	.2679	.0708	.1144	.0813	.1110
25	.1509	.4961	.1870	.2669	.1915	.2396
30	.2037	.5981	.2465	.3663	.2553	.3088
35	.2432	.6603	.2900	.4342	.3005	.3588
40	.2803	.7079	.3298	.4895	.3424	.4015
45	.3024	.7486	.3313	.5310	.3722	.4289
50	.3233	.7848	.3501	.5636	.3976	.4553
55	.3370	.8116	.3606	.5906	.4166	.4741
60	.3559	.8370	.3707	.6217	.4384	.4976
65	.3733	.8561	.3829	.6434	.4561	.5181

Table 6. Multivariate Life Table Analysis of Food Stamp Receipt for Working Age Adults with Various Demographic Characteristics

Age	<u>White</u>		<u>Black</u>	
	<u>GE 12</u>	<u>LT 12</u>	<u>GE 12</u>	<u>LT 12</u>
	<u>Male</u>			
20	.0372	.0634	.1756	.2715
25	.1148	.1943	.4035	.5124
30	.1490	.2524	.4821	.6149
35	.1854	.2977	.5536	.6864
40	.2190	.3388	.6065	.7375
45	.2328	.3731	.6363	.7899
50	.2482	.3987	.6687	.8239
55	.2555	.4168	.6872	.8508
60	.2632	.4382	.7010	.8739
65	.2725	.4560	.7169	.8890
	<u>Female</u>			
20	.0528	.0889	.2349	.3494
25	.1427	.1990	.4757	.5962
30	.1795	.2576	.5512	.6900
35	.2172	.3060	.6170	.7521
40	.2522	.3508	.6657	.7962
45	.2639	.3803	.6880	.8330
50	.2804	.4073	.7184	.8630
55	.2887	.4276	.7372	.8880
60	.2980	.4561	.7516	.9096
65	.3101	.4785	.7693	.9242

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