

Dynamics of Poverty and Food Sufficiency

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Introduction

Policymakers and social scientists are keenly interested in understanding the processes that underlie economic hardship in U.S. households. Researchers have devoted a vast amount of effort to examining the incidence, correlates, and dynamics of income-based measures of poverty and have developed a considerable body of knowledge. They have also looked at alternative, consumption-based measures of hardship, such as food insufficiency. However, because fewer data have been collected on these outcomes, we know relatively little about important characteristics of food sufficiency problems and other measures of material hardship, including their dynamic properties.

The dynamics of economic hardship involve the movement of individuals, families, and households into and out of deprivation. Analyses of these movements consider whether hardship is a brief or long-lasting condition. They also consider whether households that are deprived today are at greater risk of deprivation in the future—that is, whether deprivation is characterized by state dependence. In the case of income poverty, studies have established that most spells of poverty in the United States are short; only a small percentage last more than a few years. Studies have also found that poverty exhibits state dependence—families that have been poor in the past are more likely to be poor in the future. It is important to know whether food problems have similar dynamic properties.

These dynamic properties have implications for the design of welfare programs, especially for food assistance. The U.S. Department of Agriculture (USDA) currently administers 15 domestic food assistance programs that work individually and in concert to provide a nutrition safety net for children and low-income adults. The programs are a major component of the

Federal safety net, and in fiscal 2002, USDA spent \$37.9 billion on its domestic food assistance programs, an increase of almost 11 percent over fiscal 2001. Identifying the conditions associated with persistent food insufficiency would allow for more targeted and efficient assistance programs for households that experience it.

Understanding the dynamics of both poverty and food sufficiency states may also help us to better define the general concept of economic well-being. The standard (Orshansky) income-poverty measure, which compares a family's annual income with three times the national average food expenditure for families of its size, has serious limitations. Several approaches have been proposed for addressing these limitations. The National Research Council (Citro and Michael, 1995) has recommended that programs continue to compare families' incomes and needs, but refine the definition and improve the measurement of each element. At the same time, USDA, the Census Bureau, and other agencies have begun to collect information on particular hardships experienced by households. In particular, USDA has spearheaded the effort to document food insecurity and hunger through its collection of data on food security and the development of the food security scale (Bickel et al., 2000). Data on other measures of well-being, such as the ability to meet medical expenses, housing costs, and other specific household needs, have been collected and examined periodically by the Census Bureau.

This study examines dynamics in poverty and in food insufficiency using newly available longitudinal data. Specifically, the study links data from the 1993 panel of the Survey of Income and Program Participation (SIPP) with information from the follow-on Survey of Program Dynamics (SPD). The two surveys asked households comparable questions about food sufficiency; the resulting data reveal how food sufficiency has changed over time within households. In addition, the SIPP and SPD collected a wealth of other economic and demographic data that allowed us to construct longitudinal

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measures of poverty, program participation, and other factors. The study uses these data to characterize the incidence and dynamics of poverty and food problems for the entire U.S. population and for different subgroups. It also estimates multivariate, discrete-choice regression models to examine the factors associated with transitions into and out of poverty and food insufficiency. The empirical data are analyzed in the context of a life-cycle model of income and food consumption.

We address three research questions: (1) Are movements into and out of poverty and food insufficiency the same or different processes? (2) What factors contribute to poverty and food insufficiency entry and exit? (3) Is there state dependence—that is, does the past matter in poverty and food insufficiency?

The primary contribution of this study is its analysis of food insufficiency dynamics. Several earlier studies have documented the *incidence* of food sufficiency problems and examined the factors associated with those problems at a particular point in time. However, the lack of longitudinal data has prevented researchers from studying dynamic issues. Data from the SIPP and the SPD allowed us to assess whether food problems are relatively transient or long-lasting, whether people who have had food problems are more likely to experience them in the future, and whether food security mobility differs across groups with different economic and demographic characteristics.

A second contribution of the study is that it investigates whether the outcomes of longitudinal poverty and of food sufficiency are fundamentally distinct processes or manifestations of the same underlying process. While poverty and food sufficiency are obviously related, the study's life-cycle model suggests that they will differ depending on a household's ability to borrow and save—that is, to smooth out consumption costs over time. The study formally tests for differences in poverty and food sufficiency outcomes and examines whether the differences are consistent with life-cycle theory.

Finally, because the SPD contains numerous alternative food problem measures, including measures necessary to construct the food security scale and index, we were able to examine whether our results are comparable to previous findings. The scale is also useful for sensitivity analyses. Research by Ziliak (1998) shows that longitudinal analyses of household well-being may be sensitive to the type of measure used, so we explored that possibility as well.

Previous Studies

A large body of empirical research exists that can help inform an analysis of poverty and food sufficiency dynamics. For brevity, this review focuses on studies that have examined food sufficiency problems, food consumption, or poverty as outcome variables.

Determinants of Food Insecurity and Insufficiency

Several studies have examined factors associated with the incidence of food insecurity, food insufficiency, and other extended measures of household well-being at a single point in time. Although a few researchers have motivated their empirical analyses using dynamic conceptual models (e.g., Gundersen and Gruber, 2001), none has directly examined changes in food sufficiency problems.

Cross-sectional studies have generated a variety of results, sometimes conflicting. For instance, Rose, Gundersen, and Oliveira (1998) estimated the effects of different economic and demographic variables on food insufficiency using national sample data. They found that food insufficiency fell with rising income, food stamp benefits, and education, and with home ownership; they also found that household structure and race and ethnicity were important factors. Daponte, Haviland, and Kadane (2002) used a survey of poor families from Allegheny County, Pennsylvania, to examine the effects that food stamp and food pantry use had on the ability to make minimally adequate food expenditures. They found that families with higher incomes and higher food stamp benefit levels fared better than families with lower incomes and benefits.

In contrast, Cohen et al. (1999) found that food outcomes were worse among food stamp recipients than among eligible nonparticipants and near-eligible individuals. They estimated that half of all food stamp recipients experience some type of food insecurity. Gundersen and Oliveira (2001) similarly found that food stamp use was positively correlated with food insufficiency when program participation was treated as an exogenous variable. However, once they controlled for the endogeneity of food stamp use, the statistical significance of the relationship disappeared. Winship and Jencks (2002) found that single mothers had higher rates of food insufficiency problems than married mothers but that both groups experienced a similar decline in problems over the late 1990s. Because single mothers are more likely to need and receive public assistance, the results suggest that welfare