



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

United States  
Department of  
Agriculture



Economic  
Research  
Service

Economic  
Research  
Report  
Number 83

November 2009



*Measuring Food Security in the United States*

---

# Household Food Security in the United States, 2008

Mark Nord  
Margaret Andrews  
Steven Carlson



*Food Assistance & Nutrition  
Research Program*

## Visit the Food Security Briefing Room To Learn More!

ERS plays a leading role in Federal research on food security in U.S. households and communities. See the Food Security in the United States Briefing Room for indepth analysis, data access, and a history of the food security measurement project.

[www.ers.usda.gov/briefing/foodsecurity](http://www.ers.usda.gov/briefing/foodsecurity)

## National Agricultural Library Cataloging Record:

Nord, Mark

Household food security in the United States, 2008.

(Economic research report (United States. Dept. of Agriculture. Economic Research Service); no. 83)

1. Food security—United States—Statistics.
2. Food relief—United States—Statistics.
3. Food supply—United States--Statistics.
4. Food consumption—United States—Statistics.
5. Low-income consumers—United States—Statistics.
6. Hunger—United States—Statistics.

I. Andrews, Margaret S.

II. Carlson, Steven.

III. United States. Dept. of Agriculture. Economic Research Service.

IV. Food Assistance & Nutrition Research (Program: U.S.)

TX360.U6

### Recommended citation format for this publication:

Nord, Mark, Margaret Andrews, and Steven Carlson. *Household Food Security in the United States, 2008*. ERR-83, U.S. Dept. of Agriculture, Econ. Res. Serv. November 2009.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and, where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.



United States  
Department  
of Agriculture

Economic  
Research  
Report  
Number 83

November 2009



A Report from the Economic Research Service

[www.ers.usda.gov](http://www.ers.usda.gov)

# Household Food Security in the United States, 2008

**Mark Nord**, [marknord@ers.usda.gov](mailto:marknord@ers.usda.gov)  
**Margaret Andrews**, [mandrews@ers.usda.gov](mailto:mandrews@ers.usda.gov)  
**and Steven Carlson**

## Abstract

Eighty-five percent of American households were food secure throughout the entire year in 2008, meaning that they had access at all times to enough food for an active, healthy life for all household members. The remaining households (14.6 percent) were food insecure at least some time during the year, including 5.7 percent with very low food security—meaning that the food intake of one or more household members was reduced and their eating patterns were disrupted at times during the year because the household lacked money and other resources for food. Prevalence rates of food insecurity and very low food security were up from 11.1 percent and 4.1 percent, respectively, in 2007, and were the highest recorded since 1995, when the first national food security survey was conducted. The typical food-secure household spent 31 percent more on food than the typical food-insecure household of the same size and household composition. Fifty-five percent of all food-insecure households participated in one or more of the three largest Federal food and nutrition assistance programs during the month prior to the 2008 survey.

**Keywords:** Food security, food insecurity, food spending, food pantry, soup kitchen, emergency kitchen, material well-being, Food Stamp Program, SNAP, National School Lunch Program, WIC

## About the Authors

Mark Nord and Margaret Andrews are in the Food Economics Division, Economic Research Service (ERS), U.S. Department of Agriculture. Nord is a sociologist and Andrews an economist in the Food Assistance Branch. Steven Carlson is Director of the Office of Research and Analysis, Food and Nutrition Service, U.S. Department of Agriculture.

## Acknowledgments

The authors thank Laurian Unnevehr, Elise Golan, and Mark Prell of ERS, USDA, for their reviews of the report. Thanks also go to our editor, Priscilla Smith, and to Wynnic Pointer-Napper for graphic layout and design.

# Contents

<b>Summary</b> . . . . .	iii
<b>Introduction</b> . . . . .	1
<b>Household Food Security</b> . . . . .	2
Methods . . . . .	2
Prevalence of Food Insecurity—National Conditions and Trends . . . . .	4
Prevalence of Food Insecurity—Conditions and Trends by Selected Household Characteristics . . . . .	8
Food Insecurity in Low-Income Households . . . . .	11
Number of Persons, by Household Food Security Status and Selected Household Characteristics . . . . .	15
Prevalence of Food Insecurity by State . . . . .	15
<b>Household Spending on Food</b> . . . . .	22
Methods . . . . .	22
Food Expenditures, by Selected Household Characteristics . . . . .	23
Food Expenditures and Household Food Security . . . . .	25
<b>Use of Federal and Community Food and Nutrition Assistance Programs</b> . . . . .	27
Methods . . . . .	27
Food Security and Food Spending of Households That Received Food and Nutrition Assistance . . . . .	30
Participation in Federal Food and Nutrition Assistance Programs by Food-Insecure Households . . . . .	32
Use of Food Pantries and Emergency Kitchens . . . . .	32
Use of Food Pantries and Emergency Kitchens, by Food Security Status . . . . .	32
Use of Food Pantries, by Selected Household Characteristics . . . . .	33
Combined Use of Federal and Community Food and Nutrition Assistance . . . . .	35
<b>References</b> . . . . .	37
<b>Appendix A—Household Responses to Questions in the Food Security Scale</b> . . . . .	42
Frequency of Occurrence of Behaviors, Experiences, and Conditions That Indicate Food Insecurity . . . . .	44
Monthly and Daily Occurrence of Food-Insecure Conditions . . . . .	46
<b>Appendix B—Background on the U.S. Food Security Measurement Project</b> . . . . .	49
<b>Appendix C—USDA’s Thrifty Food Plan</b> . . . . .	54
<b>Appendix D—Food Security During 30 Days Prior to the Food Security Survey</b> . . . . .	56

## Summary

Most U.S. households have consistent, dependable access to enough food for active, healthy living—they are food secure. But a minority of American households experience food insecurity at times during the year, meaning that their access to adequate food is limited by a lack of money and other resources. The U.S. Department of Agriculture (USDA) monitors the extent and severity of food insecurity in U.S. households through an annual, nationally representative survey and has published statistical reports on household food security in the United States for each year since 1995. This report presents statistics on households' food security, food expenditures, and use of food and nutrition assistance programs in 2008.

### What Is the Issue?

USDA's domestic food and nutrition assistance programs increase food security by providing low-income households access to food, a healthful diet, and nutrition education. Reliable monitoring of food security contributes to the effective operation of these programs as well as private food assistance programs and other government initiatives aimed at reducing food insecurity. This annual food security report provides statistics that guide planning for Federal, State, and community food assistance programs.

### What Did the Study Find?

In 2008, 85.4 percent of U.S. households were food secure throughout the year. Food-secure households had consistent access to enough food for active healthy lives for all household members at all times during the year. The remaining 14.6 percent (17 million households) were food insecure. These households, at some time during the year, had difficulty providing enough food for all their members due to a lack of resources. The prevalence of food insecurity was up from 11.1 percent (13 million households) in 2007 and was the highest observed since nationally representative food security surveys were initiated in 1995.

About one-third of food-insecure households (6.7 million households, or 5.7 percent of all U.S. households) had very low food security, up from 4.7 million households (4.1 percent) in 2007, and the highest level observed since nationally representative food security surveys were initiated in 1995. In households with very low food security, the food intake of some household members was reduced, and their normal eating patterns were disrupted because of the household's food insecurity. The other two-thirds of food-insecure households obtained enough food to avoid substantial disruptions in eating patterns and food intake, using a variety of coping strategies, such as eating less varied diets, participating in Federal food and nutrition assistance programs, or obtaining emergency food from community food pantries or emergency kitchens.

Even when resources are inadequate to provide food for the entire family, children are usually shielded from the disrupted eating patterns and reduced food intake that characterize very low food security. However, children as well as adults experienced instances of very low food security in 506,000

households (1.3 percent of households with children) in 2008, up from 323,000 households (0.8 percent of households with children) in 2007.

On a given day, the number of households with very low food security was a small fraction of the number that experienced this condition “at some time during the year.” Typically, households classified as having very low food security experienced the condition in 7 or 8 months of the year, for a few days in each of those months. On an average day in late November or early December, 2008, for example, an estimated 1.1 million to 1.4 million households (0.9-1.2 percent of all U.S. households) had members who experienced very low food security, and children experienced these conditions in 86,000 to 111,000 households (0.22 to 0.28 percent of all U.S. households with children).

The prevalence of food insecurity varied considerably among different types of households. Rates of food insecurity were substantially higher than the national average for households with incomes near or below the Federal poverty line, households with children headed by single women or single men, and Black and Hispanic households. Food insecurity was more common in large cities and rural areas than in suburban areas and other outlying areas around large cities. Regionally, food insecurity was most prevalent in the South, intermediate in the Midwest and West, and least prevalent in the Northeast.

Food-secure households spent more for food than food-insecure households. In 2008, the median U.S. household spent \$43.75 per person for food each week—about 14 percent more than the cost of USDA’s Thrifty Food Plan (a low-cost food “market basket” that meets dietary standards, taking into account household size and the age and gender of household members). The median food-secure household spent 18 percent more than the cost of the Thrifty Food Plan, while the median food-insecure household spent 10 percent less than the cost of the Thrifty Food Plan.

Some food-insecure households turn to Federal food and nutrition assistance programs or emergency food providers in their communities when they are unable to obtain enough food. Fifty-five percent of the food-insecure households surveyed in 2008 said that in the previous month they had participated in one or more of the three largest Federal food and nutrition assistance programs—the National School Lunch Program, Supplemental Nutrition Assistance Program (SNAP, the new name for the Food Stamp Program), and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). About 20 percent of food-insecure households obtained emergency food from a food pantry at some time during the year, and 2.6 percent ate one or more meals at an emergency kitchen in their community.

## **How Was the Study Conducted?**

Data for the ERS food security reports come from an annual survey conducted by the U.S. Census Bureau as a supplement to the monthly Current Population Survey. USDA sponsors the annual survey, and USDA’s Economic Research Service (ERS) compiles and analyzes the responses. The 2008 food security survey covered about 44,000 households comprising a representative sample of the U.S. civilian population of 118

million households. The food security survey asked one adult respondent in each household a series of questions about experiences and behaviors that indicate food insecurity. The food security status of the household was assessed based on the number of food-insecure conditions reported (such as being unable to afford balanced meals, cutting the size of meals because of too little money for food, or being hungry because of too little money for food). Households with very low food security among children were identified by responses to a subset of questions about the conditions and experiences of children. Survey respondents also reported the amounts their households had spent on food and whether they had used public or private food and nutrition assistance programs.





## Introduction

Since 1995, the U.S. Department of Agriculture (USDA) has collected information annually on food spending, food access and adequacy, and sources of food assistance for the U.S. population. The information is collected in an annual food security survey, conducted as a supplement to the nationally representative Current Population Survey (CPS). A major impetus for this data collection is to provide information about the prevalence and severity of food insecurity in U.S. households. Previous USDA reports have summarized the findings of this research for each year from 1995 to 2007. (See appendix B for background on the development of the food security measures and a list of the reports.)

This report updates the national statistics on food security, household food spending, the use of Federal and community food and nutrition assistance by food-insecure households, and the numbers of households using community food pantries and emergency kitchens, using data collected in the December 2008 food security survey. The report includes information on the food security of households over the course of the year as well as during the 30-day period prior to the survey—from mid-November to mid-December 2008.

Unless otherwise noted, statistical differences described in the text are significant at the 90-percent confidence level.<sup>1</sup>

<sup>1</sup>Standard errors of estimates, except for State-level estimates, are based on a design factor of 1.6 due to the complex sampling design of the CPS. That is, the standard error of an estimated proportion is calculated as the square root of  $[P \times Q \times 1.6 / N]$ , where P is the estimated proportion, Q is 1-P, and N is the unweighted number of households in the denominator. The design factor of 1.6 is consistent with estimates based on more complex balanced repeated replication (BRR) methods (Cohen et al., 2002b; Hamilton et al., 1997b). Standard errors of State-level estimates were calculated using jackknife replication methods with “month in sample” groups considered as separate, independent samples (see Nord et al., 1999). Beginning with the report on the 2007 data, the jackknife methods have aggregated data from pairs of month-in-sample groups comprising largely the same households (i.e., group 1 in one year and group 5 in the following year) to account for the nonindependence of these samples.

## Household Food Security

Food security—access by all people at all times to enough food for an active, healthy life—is one of several conditions necessary for a population to be healthy and well nourished. This section provides information on food security and food insecurity in U.S. households based on the December 2008 food security survey—the 14th annual survey in the Nation’s food security monitoring system.

### Methods

The statistics presented in this report are based on data collected in a supplement to the Current Population Survey (CPS) conducted in December 2008. The CPS currently includes about 53,000 households and is representative, at State and national levels, of the civilian, noninstitutionalized population of the United States. About 44,000 households completed the food security supplement in December 2008; the remainder were unable or unwilling to do so. Weighting factors were calculated by the U.S. Census Bureau so that, when properly weighted, responses to the food security questions are representative at State and national levels.<sup>2</sup> All statistics in this report were calculated by applying the food security supplement weights to responses of the surveyed households to obtain nationally representative prevalence estimates.

The household food security statistics presented in this report are based on a measure of food security calculated from responses to a series of questions about conditions and behaviors known to characterize households having difficulty meeting basic food needs.<sup>3</sup> Each question asks whether the condition or behavior occurred at any time during the previous 12 months and specifies a lack of money or other resources to obtain food as the reason. Voluntary fasting or dieting to lose weight are thereby excluded from the measure. The series includes 10 questions about food conditions of the household as a whole and of adults in the household and, if there are children present in the household, an additional 8 questions about their food conditions (see box, “Questions Used To Assess the Food Security of Households in the CPS Food Security Survey,” p. 3). Responses to the 18 food security questions are reported in appendix A.

The food security status of each interviewed household is determined by the number of food-insecure conditions and behaviors the household reports. Households are classified as *food secure* if they report no food-insecure conditions or if they report only one or two food-insecure conditions. (Food-insecure conditions are indicated by responses of “often” or “sometimes” to questions 1-3 and 11-13; “almost every month” or “some months but not every month” to questions 5, 10, and 17; and “yes” to the other questions.) They are classified as *food insecure* if they report three or more food-insecure conditions.<sup>4</sup>

<sup>2</sup>Reweighting of the Supplement takes into consideration income and other information about households that completed the labor-force portion of the survey but not the Food Security Supplement. This corrects, to some extent, biases that could result from nonresponse to the Supplement by households that completed only the labor-force part of the survey.

<sup>3</sup>The methods used to measure the extent and severity of food insecurity have been described in several places (Hamilton et al., 1997a, 1997b; Andrews et al., 1998; Bickel et al., 1998; Carlson et al., 1999; Bickel et al., 2000; Nord and Bickel, 2002). See also the recent assessment of the measurement methods by a panel of the Committee on National Statistics (National Research Council, 2006). Further details on the development of the measure are provided in appendix B.

<sup>4</sup>To reduce the burden on higher income respondents, households with incomes above 185 percent of the Federal poverty line who give no indication of food-access problems on either of two preliminary screening questions are deemed to be food secure and are not asked the questions in the food security assessment series. The preliminary screening questions are as follows:

- People do different things when they are running out of money for food in order to make their food or their food money go further. In the last 12 months, since December of last year, did you ever run short of money and try to make your food or your food money go further?
- Which of these statements best describes the food eaten in your household—enough of the kinds of food we want to eat, enough but not always the kinds of food we want to eat, sometimes not enough to eat, or often not enough to eat?

## Questions Used To Assess the Food Security of Households in the CPS Food Security Survey

1. “We worried whether our food would run out before we got money to buy more.” Was that often, sometimes, or never true for you in the last 12 months?
2. “The food that we bought just didn’t last and we didn’t have money to get more.” Was that often, sometimes, or never true for you in the last 12 months?
3. “We couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn’t enough money for food? (Yes/No)
5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry, but didn’t eat, because there wasn’t enough money for food? (Yes/No)
8. In the last 12 months, did you lose weight because there wasn’t enough money for food? (Yes/No)
9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)
10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

### *(Questions 11-18 were asked only if the household included children age 0-18)*

11. “We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.” Was that often, sometimes, or never true for you in the last 12 months?
12. “We couldn’t feed our children a balanced meal, because we couldn’t afford that.” Was that often, sometimes, or never true for you in the last 12 months?
13. “The children were not eating enough because we just couldn’t afford enough food.” Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children’s meals because there wasn’t enough money for food? (Yes/No)
15. In the last 12 months, were the children ever hungry but you just couldn’t afford more food? (Yes/No)
16. In the last 12 months, did any of the children ever skip a meal because there wasn’t enough money for food? (Yes/No)
17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months did any of the children ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)

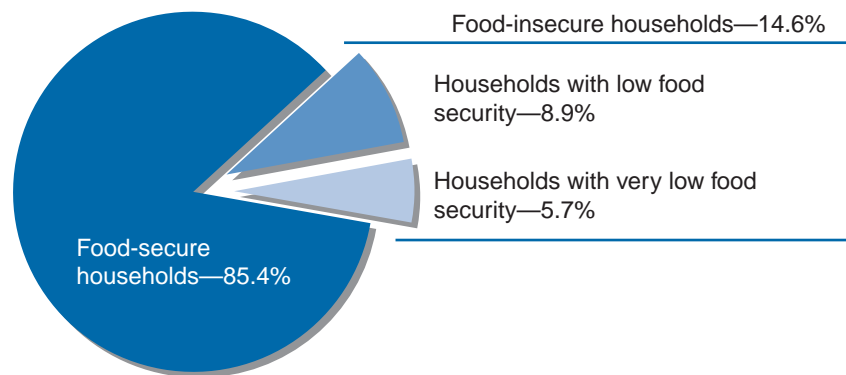
Food-insecure households are further classified as having either *low food security* or *very low food security*.<sup>5</sup> The very low food security category identifies households in which food intake of one or more members was reduced and eating patterns disrupted because of insufficient money and other resources for food. Households without children are classified as having *very low food security* if they report six or more food-insecure conditions. Households with children are classified as having *very low food security* if they report eight or more food-insecure conditions, including conditions among both adults and children. Households with children are further classified as having *very low food security among children* if they report five or more food-insecure conditions among the children (that is, if they respond affirmatively to five or more of questions 11-18).

Households classified as having *low food security* have reported multiple indications of food access problems, but typically have reported few, if any, indications of reduced food intake. Households classified as having *very low food security* have reported multiple indications of reduced food intake and disrupted eating patterns due to inadequate resources for food. In most, but not all households with *very low food security*, the survey respondent reported that he or she was hungry at some time during the year but did not eat because there was not enough money for food.

## Prevalence of Food Insecurity— National Conditions and Trends

About 85 percent of U.S. households were food secure throughout the entire year 2008 (fig. 1, table 1A). In concept, “food secure” means that all household members had access at all times to enough food for an active, healthy life.<sup>6</sup> The remaining 17 million U.S. households (14.6 percent of all households) were food insecure at some time during the year. That is, they were, at times, uncertain of having, or unable to acquire, enough food for all household members because they had insufficient money and other resources for food. About two-thirds of food-insecure households avoided substantial reductions or disruptions in food intake, in many cases by relying on a few basic foods and reducing variety in their diets. But 6.7 million households

Figure 1  
**U.S. households by food security status, 2008**



Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

<sup>5</sup>Prior to 2006, households with low food security were described as “food insecure without hunger” and households with very low food security were described as “food insecure with hunger.” Changes in these descriptions were made in 2006 at the recommendation of the Committee on National Statistics (National Research Council, 2006), in order to distinguish the physiological state of hunger from indicators of food availability. The criteria by which households were classified remained unchanged. See box “What Is ‘Very Low Food Security’?,” p. 5, for further information on these changes.

<sup>6</sup>Food security and insecurity, as measured for this report, are based on respondent perceptions of whether the household was able to obtain enough food to meet their needs. The measure does not specifically address whether the household’s food intake was sufficient for active, healthy lives. Nonetheless, research based on other surveys has found food security, measured as in this report, to be associated with health, nutrition, and children’s development in a manner that generally supports the conceptualized link with sufficiency for active, healthy lives (see, for example, Nord and Kantor, 2006; Nord and Hopwood, 2007; Nord, 2009).

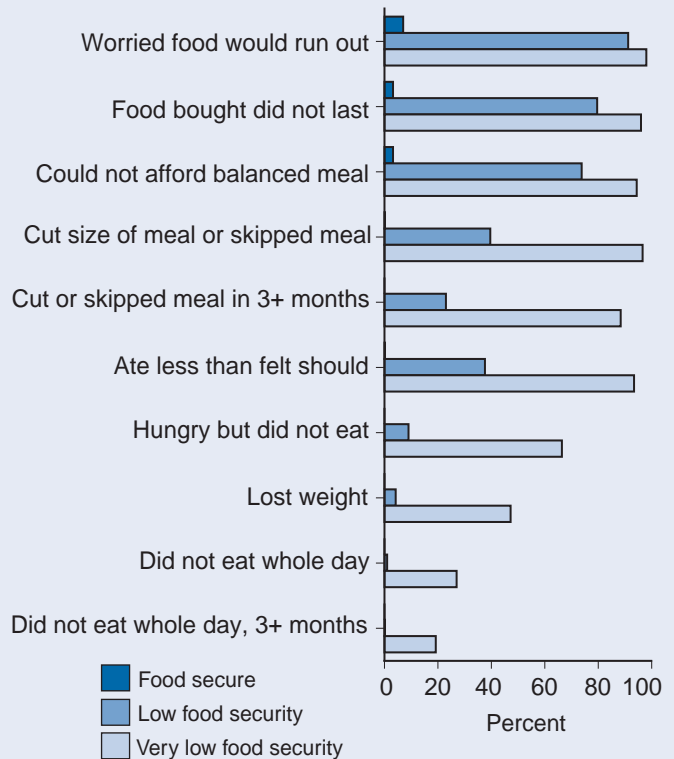
## What Is “Very Low Food Security”?

The defining characteristic of “very low food security” (described in *Household Food Security* reports prior to 2006 as “food insecurity with hunger”) is that, at times during the year, the food intake of household members was reduced and their normal eating patterns were disrupted because the household lacked money and other resources for food. Very low food security can be characterized in terms of the conditions that households in this category reported in the food security survey. In the 2008 survey, **households classified as having very low food security** (representing an estimated 6.7 million households nationwide) reported the following specific conditions:

- 98 percent reported having worried that their food would run out before they got money to buy more.
- 96 percent reported that the food they bought just did not last and they did not have money to get more.
- 94 percent reported that they could not afford to eat balanced meals.
- 97 percent reported that an adult had cut the size of meals or skipped meals because there was not enough money for food.
- 88 percent reported that this had occurred in 3 or more months.
- In 93 percent, respondents reported that they had eaten less than they felt they should because there was not enough money for food.
- In 66 percent, respondents reported that they had been hungry but did not eat because they could not afford enough food.
- In 47 percent, respondents reported having lost weight because they did not have enough money for food.
- 27 percent reported that an adult did not eat for a whole day because there was not enough money for food.

- 19 percent reported that this had occurred in 3 or more months.
- All of those without children reported at least 6 of these conditions, and 67 percent reported 7 or more. (Conditions in households with children were similar, but the reported food-insecure conditions of both adults and children were taken into account.)

**Households reporting each indicator of food insecurity, by food security status, 2008**



Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

(5.7 percent of all U.S. households) had *very low food security*—that is, they were food insecure to the extent that eating patterns of one or more household members were disrupted and their food intake reduced, at least some time during the year, because they couldn’t afford enough food.

Children in most food-insecure households—even in most households with very low food security—were protected from reductions in food intake. However in about 506,000 households (1.3 percent of households with children), one or more children were also subject to reduced food intake and disrupted eating patterns at some time during the year (table 1B). In some households with very low food security among children, only older children

Table 1A

**Households and individuals by food security status of household, 1998-2008**

Unit	Total <sup>1</sup>	Food insecure							
		Food secure		All		With low food security		With very low food security	
		1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000
<b>Households:</b>									
2008	117,565	100,416	85.4	17,149	14.6	10,426	8.9	6,723	5.7
2007	117,100	104,089	88.9	13,011	11.1	8,262	7.0	4,749	4.1
2006	115,609	102,961	89.1	12,648	10.9	8,031	6.9	4,617	4.0
2005	114,437	101,851	89.0	12,586	11.0	8,158	7.1	4,428	3.9
2004	112,967	99,473	88.1	13,494	11.9	9,045	8.0	4,449	3.9
2003	112,214	99,631	88.8	12,583	11.2	8,663	7.7	3,920	3.5
2002	108,601	96,543	88.9	12,058	11.1	8,259	7.6	3,799	3.5
2001	107,824	96,303	89.3	11,521	10.7	8,010	7.4	3,511	3.3
2000	106,043	94,942	89.5	11,101	10.5	7,786	7.3	3,315	3.1
1999	104,684	94,154	89.9	10,529	10.1	7,420	7.1	3,109	3.0
1998	103,309	91,121	88.2	12,188	11.8	8,353	8.1	3,835	3.7
<b>All individuals (by food security status of household):<sup>2</sup></b>									
2008	299,567	250,459	83.6	49,108	16.4	31,824	10.6	17,284	5.8
2007	297,042	260,813	87.8	36,229	12.2	24,287	8.2	11,942	4.0
2006	294,010	258,495	87.9	35,515	12.1	24,395	8.3	11,120	3.8
2005	291,501	256,373	87.9	35,128	12.1	24,349	8.4	10,779	3.7
2004	288,603	250,407	86.8	38,196	13.2	27,535	9.5	10,661	3.7
2003	286,410	250,155	87.3	36,255	12.7	26,622	9.3	9,633	3.4
2002	279,035	244,133	87.5	34,902	12.5	25,517	9.1	9,385	3.4
2001	276,661	243,019	87.8	33,642	12.2	24,628	8.9	9,014	3.3
2000	273,685	240,454	87.9	33,231	12.1	24,708	9.0	8,523	3.1
1999	270,318	239,304	88.5	31,015	11.5	23,237	8.6	7,779	2.9
1998	268,366	232,219	86.5	36,147	13.5	26,290	9.8	9,857	3.7
<b>Adults (by food security status of household):<sup>2</sup></b>									
2008	225,461	193,026	85.6	32,435	14.4	20,320	9.0	12,115	5.4
2007	223,467	199,672	89.4	23,795	10.6	15,602	7.0	8,193	3.7
2006	220,423	197,536	89.6	22,887	10.4	15,193	6.9	7,694	3.5
2005	217,897	195,172	89.6	22,725	10.4	15,146	7.0	7,579	3.5
2004	215,564	191,236	88.7	24,328	11.3	16,946	7.9	7,382	3.4
2003	213,441	190,451	89.2	22,990	10.8	16,358	7.7	6,632	3.1
2002	206,493	184,718	89.5	21,775	10.5	15,486	7.5	6,289	3.0
2001	204,340	183,398	89.8	20,942	10.2	14,879	7.3	6,063	3.0
2000	201,922	181,586	89.9	20,336	10.1	14,763	7.3	5,573	2.8
1999	198,900	179,960	90.5	18,941	9.5	13,869	7.0	5,072	2.5
1998	197,084	174,964	88.8	22,120	11.2	15,632	7.9	6,488	3.3

<sup>1</sup>Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2008, these represented 366,000 households (0.3 percent of all households.)

<sup>2</sup>The food security survey measures food security status at the household level. Not all individuals residing in food-insecure households were directly affected by the households' food insecurity. Similarly, not all individuals in households classified as having very low food security were subject to the reductions in food intake and disruptions in eating patterns that characterize this condition. Young children, in particular, are often protected from effects of the households' food insecurity.

Sources: Calculated by ERS using data from the August 1998, April 1999, September 2000, December 2001, December 2002, December 2003, December 2004, December 2005, December 2006, December 2007, and December 2008 Current Population Survey Food Security Supplements.



may have been subjected to the more severe effects of food insecurity, while younger children were protected from those effects.

When interpreting food security statistics in this report (except for appendix D), it is important to keep in mind that households were classified as having low or very low food security if they experienced the condition at any time during the previous 12 months. The prevalence of these conditions on any given day is far below the corresponding annual prevalence. For example, the prevalence of very low food security on an average day during the 30-day period prior to the December 2008 survey is estimated to have been between 0.9 and 1.2 percent of households (1.1 to 1.4 million households; see box “When Food Insecurity Occurs in U.S. Households, It Is Usually Recurrent But Not Chronic,” p. 9). Children, as well as adults, experienced very low food security in an estimated 86,000 to 111,000 households (0.22 to 0.28 percent of all U.S. households with children) during the same period.

Table 1B

**Households with children, and children, by food security status of household, 1998-2008**

	Total <sup>1</sup> 1,000	Food secure		With low or very low food security among adults or children		With very low food security among children	
		1,000	Percent	1,000	Percent	1,000	Percent
<b>Households with children:</b>							
2008	39,699	31,364	79.0	8,335	21.0	506	1.3
2007	39,390	33,160	84.2	6,230	15.8	323	0.8
2006	39,436	33,279	84.4	6,157	15.6	221	.6
2005	39,601	33,404	84.4	6,197	15.6	270	.7
2004	39,990	32,967	82.4	7,023	17.6	274	.7
2003	40,286	33,575	83.3	6,711	16.7	207	.5
2002	38,647	32,267	83.5	6,380	16.5	265	.7
2001	38,330	32,141	83.9	6,189	16.1	211	.6
2000	38,113	31,942	83.8	6,171	16.2	255	.7
1999	37,884	32,290	85.2	5,594	14.8	219	.6
1998	38,036	31,335	82.4	6,701	17.6	331	.9
<b>Children (by food security status of household):<sup>2</sup></b>							
2008	74,106	57,433	77.5	16,673	22.5	1,077	1.5
2007	73,575	61,140	83.1	12,435	16.9	691	.9
2006	73,587	60,959	82.8	12,628	17.2	430	.6
2005	73,604	61,201	83.1	12,403	16.9	606	.8
2004	73,039	59,171	81.0	13,868	19.0	545	.7
2003	72,969	59,704	81.8	13,265	18.2	420	.6
2002	72,542	59,415	81.9	13,127	18.1	567	.8
2001	72,321	59,620	82.4	12,701	17.6	467	.6
2000	71,763	58,867	82.0	12,896	18.0	562	.8
1999	71,418	59,344	83.1	12,074	16.9	511	.7
1998	71,282	57,255	80.3	14,027	19.7	716	1.0

<sup>1</sup>Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2008, these represented 120,000 households (0.3 percent of all households with children.)

<sup>2</sup>The food security survey measures food security status at the household level. Not all children residing in food-insecure households were directly affected by the households' food insecurity. Similarly, not all children in households classified as having very low food security among children were subject to the reductions in food intake and disruptions in eating patterns that characterize this condition. Young children, in particular, are often protected from effects of the households' food insecurity.

Sources: Calculated by ERS using data from the August 1998, April 1999, September 2000, December 2001, December 2002, December 2003, December 2004, December 2005, December 2006, December 2007, and December 2008 Current Population Survey Food Security Supplements.



The prevalence of food insecurity at all reported levels of severity increased from 2007 to 2008. The prevalence of food insecurity increased from 11.1 percent of households in 2007 to 14.6 percent in 2008. The prevalence of very low food security increased from 4.1 percent of households in 2007 to 5.7 percent in 2008. The prevalence of very low food security among children was up from 0.8 percent of households with children in 2007 to 1.3 percent in 2008.

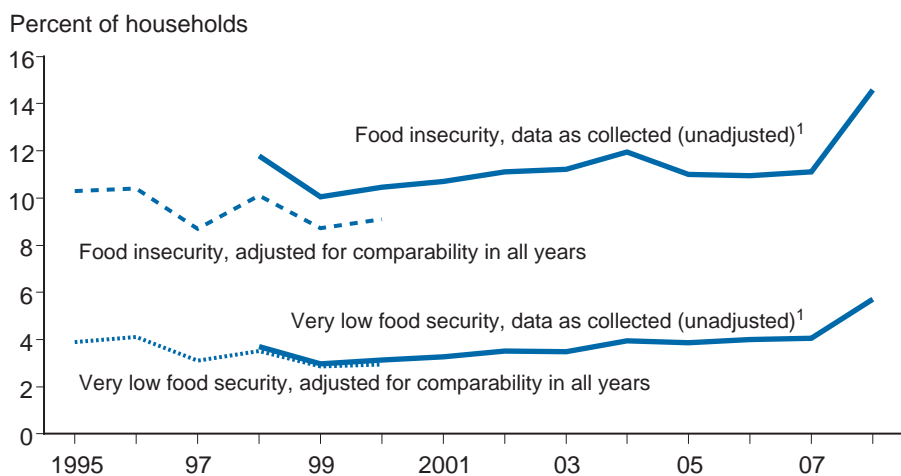
The prevalences of both food insecurity overall and the more severe condition, very low food security, were higher in 2008 than in any year since the first nationally representative food security survey in 1995 (fig. 2). Over the previous decade, food insecurity had increased from about 10 percent in 1999 to near 12 percent in 2004, then declined to 11 percent in 2005-07.<sup>7</sup> The prevalence of very low food security had increased from around 3 percent in 1999 to 4 percent in 2004, then remained essentially unchanged through 2007.

## Prevalence of Food Insecurity—Conditions and Trends by Selected Household Characteristics

The prevalence of food insecurity varied considerably among households with different demographic and economic characteristics (table 2). Rates of food insecurity were well below the national average of 14.6 percent for households with more than one adult and no children (9.1 percent) and for households with elderly persons (8.1 percent).<sup>8</sup> Rates of food insecurity substantially higher than the national average were registered by the following groups:

- households with incomes below the official poverty line (42.2 percent)<sup>9</sup>
- households with children, headed by single women (37.2 percent) or single men (27.6 percent)
- Black households (25.7 percent)
- Hispanic households (26.9 percent).

Figure 2  
**Trends in the prevalence of food insecurity in U.S. households, 1995-2008**



<sup>1</sup>Data as collected in 1995-97 are not directly comparable with data collected in 1998-2008.  
Source: Calculated by ERS based on Current Population Survey Food Security Supplement data.

<sup>7</sup>Because of changes in screening procedures used to reduce respondent burden, food security statistics from 1995-97 are not directly comparable with those from 1998-2008. Figure 2 presents statistics for the years 1995-2000, adjusted to be comparable across all years, as well as statistics for 1998-2008 based on data as collected. See Andrews et al. (2000) and Ohls et al. (2001) for detailed information about questionnaire screening and adjustments for comparability. From 1995-2000, the prevalence rates reflected an overall decline in food insecurity but also a 2-year cyclical component that was associated with data collection schedules (Cohen et al., 2002a). The CPS food security surveys over that period alternated between April in odd-numbered years and August or September in even-numbered years. The measured prevalence of food insecurity was higher in the August/September collections, suggesting a seasonal response effect. Since 2001, the survey has been conducted in early December, which avoids further problems of seasonality effects in interpreting annual changes. A smaller food security survey was also conducted in April 2001 to provide a baseline for assessing seasonal effects of data collection in December. Comparison of food security statistics from the April 2001 survey with those from April 1999 and December 2001 suggests that seasonal effects in early December were similar to those in April (Nord et al., 2002a).

<sup>8</sup>“Elderly” in this report refers to persons ages 65 and older. .

<sup>9</sup>The Federal poverty line was \$21,834 for a family of four in 2008.

## When Food Insecurity Occurs in U.S. Households, It Is Usually Recurrent But Not Chronic

When households experience very low food security in the United States, the resulting instances of reduced food intake and disrupted eating patterns are usually occasional or episodic but are not usually chronic. The food security measurement methods used in this report are designed to register these occasional or episodic occurrences. The questions used to assess households' food security status ask whether a condition, experience, or behavior occurred at any time in the past 12 months, and households can be classified as having very low food security based on a single, severe episode during the year. It is important to keep this aspect of the scale in mind when interpreting food insecurity statistics. Analysis of additional information collected in the food security survey on how frequently various food-insecure conditions occurred during the year, whether they occurred during the 30 days prior to the survey, and, if so, in how many days, provide insight into the frequency and duration of food insecurity in U.S. households. These analyses reveal that in 2008:

- About one-fourth of the households with very low food security at any time during the year experienced the associated conditions rarely or occasionally—in only 1 or 2 months of the year. For three-fourths of households, the conditions were recurring, experienced in 3 or more months of the year.
- For about one-fourth of food-insecure households and one-third of those with very low food security, occurrence of the associated conditions was frequent or chronic. That is, the conditions occurred often, or in almost every month.
- On average, households that were food insecure at some time during the year were food insecure in 7 months during the year (see appendix D). During the 30-day period ending in mid-December 2008, 10.4 million households (8.8 percent of all households) were food insecure—about 60 percent of the number that were food insecure at any time during the year.
- On average, households with very low food security at some time during the year experienced the associated conditions in 7 or 8 months during the year (see appendix D). During the 30-day period ending in mid-December 2008, 4.2 million households (3.6 percent of all households) had very low food security—about 63 percent of the number with very low food security at some during the year.
- Most households that had very low food security at some time during a month experienced the associated

conditions in 1 to 7 days of the month. The average daily prevalence of very low food security during the 30-day period ending in mid-December 2008 was probably between 1.1 and 1.4 million households (0.9 to 1.2 percent of all households)—about 18 to 23 percent of the annual prevalence.

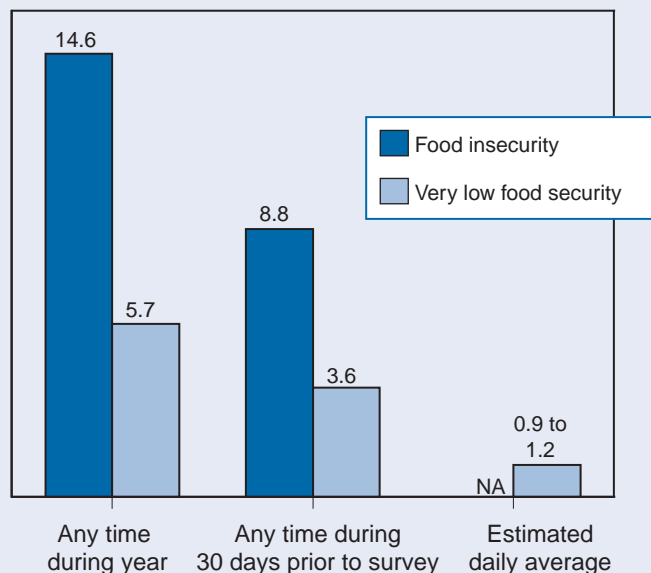
- The daily prevalence of very low food security among children during the 30-day period ending in early December 2008 was probably between 86,000 and 111,000 households (0.22 to 0.28 percent of households with children)—about 17 to 22 percent of the annual prevalence.

The omission of homeless families and individuals from these daily statistics biases the statistics downward, and the bias may be substantial relative to the estimates, especially for the most severe conditions.

(Appendix A provides information on how often conditions indicating food insecurity occurred, as reported by respondents to the December 2008 food security survey. See Nord et al., 2000, for more information about the frequency of food insecurity.)

### Prevalence of food insecurity and very low food security, by reference period

Percent of households



NA = Estimate of average daily occurrence of food insecurity not available.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

Table 2

**Households by food security status and selected household characteristics, 2008**

Category	Total <sup>1</sup>	Food insecure							
		Food secure		All		With low food security		With very low food security	
		1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All households	117,565	100,416	85.4	17,149	14.6	10,426	8.9	6,723	5.7
Household composition:									
With children < 18 yrs	39,699	31,364	79.0	8,335	21.0	5,718	14.4	2,617	6.6
With children < 6 yrs	17,503	13,595	77.7	3,908	22.3	2,818	16.1	1,090	6.2
Married-couple families	26,705	22,887	85.7	3,818	14.3	2,735	10.2	1,083	4.1
Female head, no spouse	9,639	6,057	62.8	3,582	37.2	2,296	23.8	1,286	13.3
Male head, no spouse	2,782	2,013	72.4	769	27.6	569	20.5	200	7.2
Other household with child <sup>2</sup>	572	405	70.8	167	29.2	118	20.6	49	8.6
With no children < 18 yrs	77,866	69,052	88.7	8,814	11.3	4,708	6.0	4,106	5.3
More than one adult	45,772	41,610	90.9	4,162	9.1	2,409	5.3	1,753	3.8
Women living alone	17,934	15,266	85.1	2,668	14.9	1,284	7.2	1,384	7.7
Men living alone	14,160	12,177	86.0	1,983	14.0	1,015	7.2	968	6.8
With elderly	28,211	25,927	91.9	2,284	8.1	1,402	5.0	882	3.1
Elderly living alone	11,148	10,168	91.2	980	8.8	552	5.0	428	3.8
Race/ethnicity of households:									
White non-Hispanic	82,935	74,041	89.3	8,894	10.7	5,154	6.2	3,740	4.5
Black non-Hispanic	14,441	10,732	74.3	3,709	25.7	2,251	15.6	1,458	10.1
Hispanic <sup>3</sup>	13,504	9,873	73.1	3,631	26.9	2,439	18.1	1,192	8.8
Other	6,686	5,772	86.3	914	13.7	582	8.7	332	5.0
Household income-to-poverty ratio:									
Under 1.00	13,117	7,576	57.8	5,541	42.2	3,014	23.0	2,527	19.3
Under 1.30	20,383	12,427	61.0	7,956	39.0	4,403	21.6	3,553	17.4
Under 1.85	29,680	19,622	66.1	10,058	33.9	5,731	19.3	4,327	14.6
1.85 and over	70,433	65,038	92.3	5,395	7.7	3,595	5.1	1,800	2.6
Income unknown	17,452	15,755	90.3	1,697	9.7	1,101	6.3	596	3.4
Area of residence: <sup>4</sup>									
Inside metropolitan area	98,189	83,790	85.3	14,399	14.7	8,757	8.9	5,642	5.7
In principal cities <sup>5</sup>	32,808	27,006	82.3	5,802	17.7	3,634	11.1	2,168	6.6
Not in principal cities	48,239	42,125	87.3	6,114	12.7	3,650	7.6	2,464	5.1
Outside metropolitan area	19,375	16,625	85.8	2,750	14.2	1,669	8.6	1,081	5.6
Census geographic region:									
Northeast	21,341	18,616	87.2	2,725	12.8	1,610	7.5	1,115	5.2
Midwest	26,370	22,671	86.0	3,699	14.0	2,254	8.5	1,445	5.5
South	43,542	36,621	84.1	6,921	15.9	4,216	9.7	2,705	6.2
West	26,311	22,507	85.5	3,804	14.5	2,346	8.9	1,458	5.5

<sup>1</sup>Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2008, these represented 366,000 households (0.3 percent of all households.)

<sup>2</sup>Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

<sup>3</sup>Hispanics may be of any race.

<sup>4</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2004 and later years but are not precisely comparable with those of earlier years.

<sup>5</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

Food insecurity was more prevalent among households with children (21.0 percent) than among those with no children (11.3 percent).<sup>10</sup> Among households with children, those headed by a married couple showed the lowest rate of food insecurity (14.3 percent).

Across the metropolitan area classifications, the prevalence of food insecurity was highest for households located in principal cities of metropolitan areas (17.7 percent), intermediate for those in nonmetropolitan areas (14.2 percent), and lowest in suburbs and other metropolitan areas outside principal cities (12.7 percent).<sup>11</sup> Regionally, the prevalence of food insecurity was highest in the South (15.9 percent), intermediate in the West (14.5 percent) and Midwest (14.0 percent), and lowest in the Northeast (12.8 percent).

The prevalence rates of very low food security in various types of households followed a pattern similar to that observed for food insecurity. Rates were lowest for married couples with children (4.1 percent), multiple-adult households with no children (3.8 percent), and households with elderly persons (3.1 percent). Very low food security was more prevalent than the national average (5.7 percent) for households with children headed by single women (13.3 percent), women living alone (7.7 percent), men living alone (6.8 percent), Black and Hispanic households (10.1 and 8.8 percent, respectively), households with incomes below the poverty line (19.3 percent), and households located in principal cities of metropolitan areas (6.6 percent).

Very low food security among children was least prevalent in married-couple households, White non-Hispanic households, and households with incomes above 185 percent of the poverty line (table 3). Children in households headed by single women were more likely to experience very low food security, as were children in households headed by a Black or Hispanic person and those in households with incomes below 185 percent of the poverty line.

The prevalence of food insecurity increased from 2007 to 2008 for all categories of households analyzed (fig. 3). Increases were largest for single parents with children (both men and women) and for Hispanic households. The prevalence of very low food security also increased from 2007 to 2008 for all categories of households except for single-male-headed households with children (fig. 4). Among the households surveyed, this category, too, registered an increase, but the change was within a range that could have resulted from sampling variation. Increases in the prevalence of very low food security were largest for single-female-headed families with children and for households with incomes below, or not far above, the poverty line.

## Food Insecurity in Low-Income Households

Food insecurity is by definition a condition that results from insufficient household resources. In 2008, food insecurity was more than four times as prevalent in households with annual incomes below 185 percent of the poverty line as it was in households with incomes above that range (table 2). However, many factors that might affect a household's food security (such as job loss, divorce, or other unexpected events) are not captured by an annual income measure. Some households experienced episodes of food insecurity, or even very low food security, even though their annual incomes were well above the poverty line (Nord and Brent, 2002; Gundersen and Gruber, 2001).

<sup>10</sup>About one-third of the difference in food insecurity between households with and without children results from a difference in the measures applied to the two types of households. Responses to questions about children as well as adults are considered in assessing the food security status of households with children, but for both types of households, a total of three indications of food insecurity is required for classification as food insecure. Even with the child-referenced questions omitted from the scale, however, 17.9 percent of households with children would be classified as food insecure (that is, as having food insecurity among adults), compared with 11.3 percent for households without children. Comparisons of very low food security are not biased by this measurement issue because a higher threshold is applied to households with children consistent with the larger number of questions taken into consideration.

<sup>11</sup>Revised metropolitan statistical areas (MSAs) and principal cities within them were delineated by the Office of Management and Budget in 2003, based on revised standards developed by the U.S. Census Bureau in collaboration with other Federal agencies. Food security prevalence statistics by area of residence are comparable with those for 2004 and later years, but are not precisely comparable with those for earlier years. Principal cities include the incorporated areas of the largest city in each MSA and other cities in the MSA that meet specified criteria based on population size and commuting patterns.

Table 3

**Prevalence of food security and food insecurity in households with children by selected household characteristics, 2008**

Category	Total <sup>1</sup>	Food-secure households		Food-insecure households <sup>2</sup>		Households with very low food security among children	
		1,000	Percent	1,000	Percent	1,000	Percent
All households with children	39,699	31,364	79.0	8,335	21.0	506	1.3
Household composition:							
With children < 6 yrs	17,503	13,595	77.7	3,908	22.3	166	.9
Married-couple families	26,705	22,886	85.7	3,819	14.3	196	.7
Female head, no spouse	9,639	6,057	62.8	3,582	37.2	266	2.8
Male head, no spouse	2,782	2,014	72.4	768	27.6	31	1.1
Other household with child <sup>3</sup>	572	405	70.8	167	29.2	13	2.3
Race/ethnicity of households:							
White non-Hispanic	24,237	20,480	84.5	3,757	15.5	152	.6
Black non-Hispanic	5,613	3,825	68.1	1,788	31.9	146	2.6
Hispanic <sup>4</sup>	7,294	4,950	67.9	2,344	32.1	177	2.4
Other	2,554	2,108	82.5	446	17.5	31	1.2
Household income-to-poverty ratio:							
Under 1.00	5,975	2,968	49.7	3,007	50.3	244	4.1
Under 1.30	9,229	4,960	53.7	4,269	46.3	329	3.6
Under 1.85	12,586	7,271	57.8	5,315	42.2	385	3.1
1.85 and over	22,245	20,006	89.9	2,239	10.1	80	.4
Income unknown	4,867	4,085	83.9	782	16.1	41	.8
Area of residence: <sup>5</sup>							
Inside metropolitan area	33,592	26,597	79.2	6,995	20.8	447	1.3
In principal cities <sup>6</sup>	10,614	7,834	73.8	2,780	26.2	166	1.6
Not in principal cities	17,288	14,246	82.4	3,042	17.6	211	1.2
Outside metropolitan area	6,107	4,766	78.0	1,341	22.0	59	1.0
Census geographic region:							
Northeast	7,132	5,787	81.1	1,345	18.9	89	1.2
Midwest	8,773	7,045	80.3	1,728	19.7	81	.9
South	14,393	11,064	76.9	3,329	23.1	175	1.2
West	9,400	7,466	79.4	1,934	20.6	161	1.7
Individuals in households with children:							
All individuals in households with children	160,524	126,394	78.7	34,130	21.3	2,263	1.4
Adults in households with children	86,418	68,961	79.8	17,457	20.2	1,186	1.4
Children	74,106	57,433	77.5	16,673	22.5	1,077	1.5

<sup>1</sup>Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2008, these represented 120,000 households with children (0.3 percent of all households with children.)

<sup>2</sup>Food-insecure households are those with low or very low food security among adults or children.

<sup>3</sup>Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

<sup>4</sup>Hispanics may be of any race.

<sup>5</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2004 and later years but are not precisely comparable with those of earlier years.

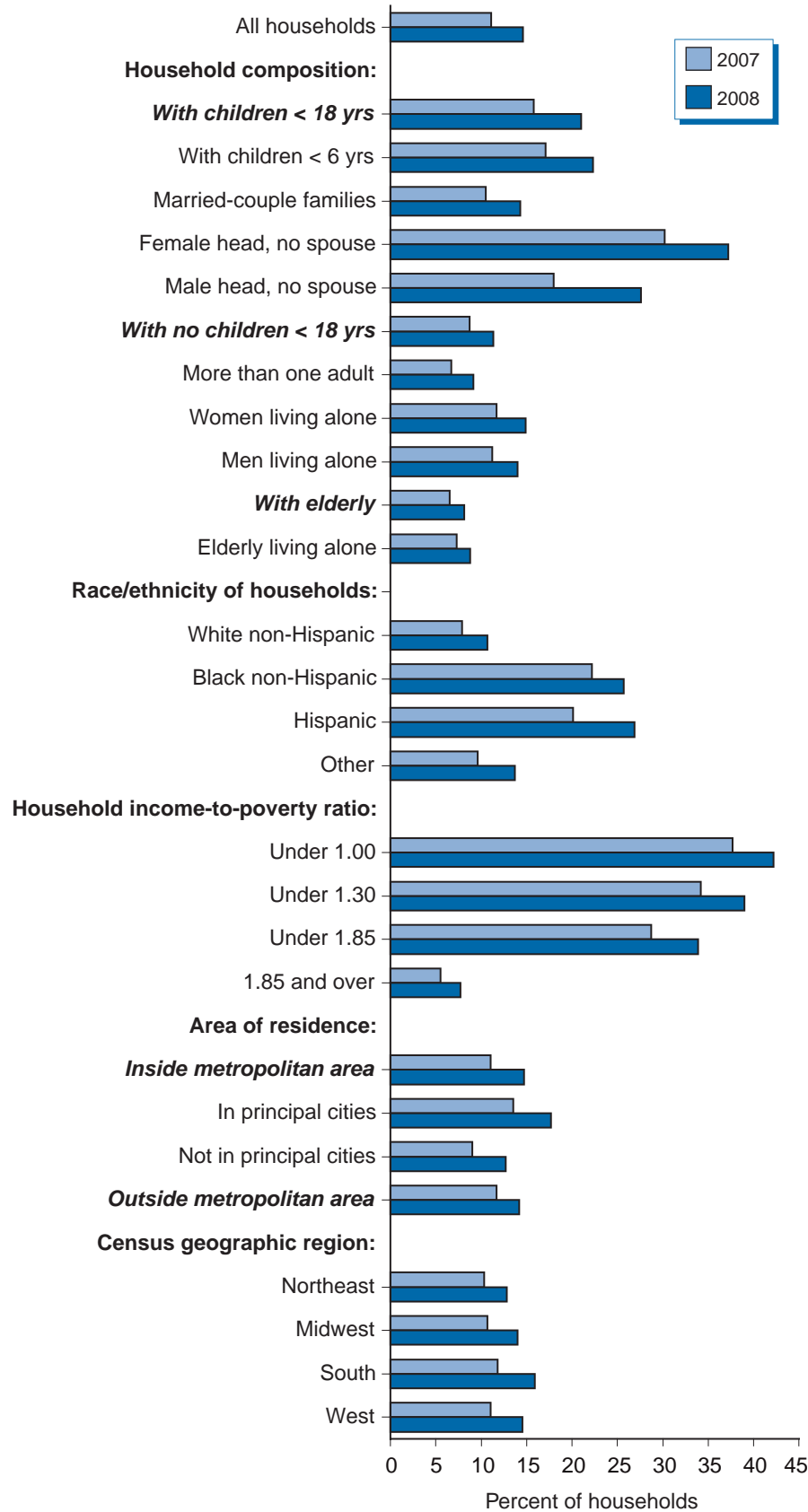
<sup>6</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.



Figure 3

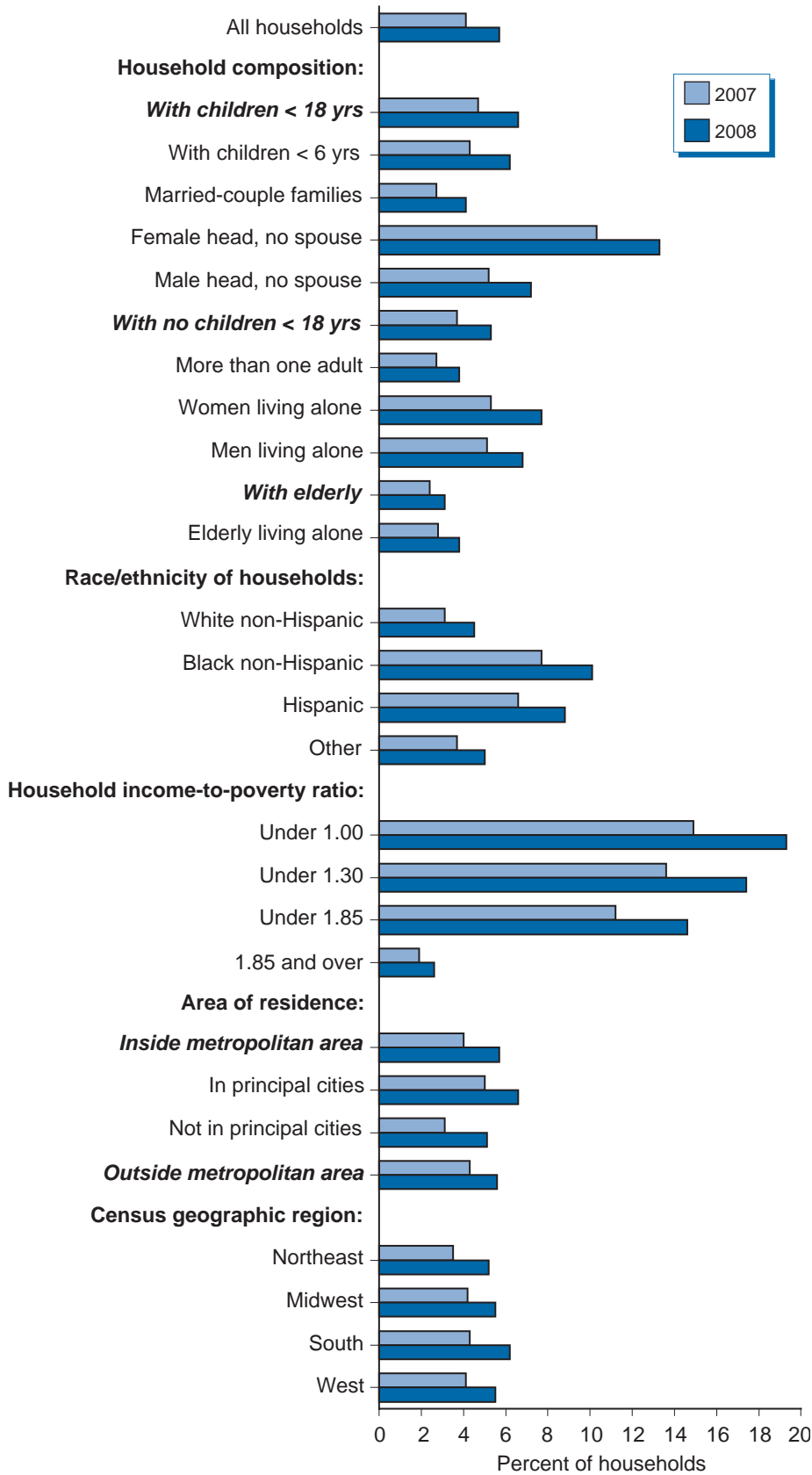
**Prevalence of food insecurity, 2007 and 2008**



Source: Calculated by ERS based on Current Population Survey Food Security Supplement data, December 2007 and December 2008.

Figure 4

**Prevalence of very low food security, 2007 and 2008**



Source: Calculated by ERS based on Current Population Survey Food Security Supplement data, December 2007 and December 2008.

On the other hand, many low-income households (including 58 percent of those with incomes below the official poverty line) were food secure.

Table 4 presents food security statistics for households with annual incomes below 130 percent of the poverty line.<sup>12</sup> Thirty-nine percent of these low-income households were food insecure, including 17.4 percent that had very low food security at times during the year. Low-income households with children were more likely to be food insecure than low-income households without children (46.3 percent vs. 33.1 percent), but were no more likely to have very low food security (16.6 percent vs. 18.1 percent). Low-income single-parent households with children were especially vulnerable to food insecurity (50.3 percent for those headed by single women and 48.6 percent for those headed by single men).

### **Number of Persons, by Household Food Security Status and Selected Household Characteristics**

The food security survey is designed to measure food security status at the household level. While it is informative to examine the number of persons residing in food-insecure households, these statistics should be interpreted carefully. In a single food-insecure household, different household members may have been affected differently by the households' food insecurity. Some members—particularly young children—may have experienced only mild effects or none at all, while adults were more severely affected. It is more precise, therefore, to describe these statistics as representing “persons living in food-insecure households” rather than as representing “food-insecure persons.” Similarly, “persons living in households with very low food security” is a more precise description than “persons with very low food security.”

In 2008, 49.1 million people lived in food-insecure households (table 1A). They constituted 16.4 percent of the U.S. civilian noninstitutionalized population and included 32.4 million adults and 16.7 million children. Of these individuals, 12.1 million adults and 5.2 million children lived in households with very low food security, and 1.1 million children (1.5 percent of U.S. children) lived in households with very low food security among children (table 1B). Tables 5 and 6 present estimates of the number of people and the number of children in the households in each food security status and household type.

### **Prevalence of Food Insecurity by State**

The prevalence of food insecurity varied considerably from State to State. Data for 3 years, 2006-08, were combined to provide more reliable statistics at the State level (table 7). Estimated prevalence rates of food insecurity during this 3-year period ranged from 6.9 percent in North Dakota to 17.4 percent in Mississippi; estimated prevalence rates of very low food security ranged from 2.6 percent in North Dakota to 7.4 percent in Mississippi.

The margin of error for the State prevalence rates should be taken into consideration when interpreting these statistics and especially when comparing prevalence rates across States. The margin of error reflects

<sup>12</sup>Households with income below 130 percent of the poverty line are eligible to receive SNAP benefits, provided they meet other eligibility criteria. Children in these households are eligible for free meals in the National School Lunch and School Breakfast Programs.



Table 4

**Households with income below 130 percent of the poverty line by food security status and selected household characteristics, 2008**

Category	Total <sup>1</sup>	Food secure		Food insecure					
		1,000	Percent	All	With low food security		With very low food security		
	1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All low-income households	20,383	12,427	61.0	7,956	39.0	4,403	21.6	3,553	17.4
Household composition:									
With children < 18 yrs	9,229	4,960	53.7	4,269	46.3	2,738	29.7	1,531	16.6
With children < 6 yrs	4,900	2,689	54.9	2,211	45.1	1,513	30.9	698	14.2
Married-couple families	3,766	2,223	59.0	1,543	41.0	1,057	28.1	486	12.9
Female head, no spouse	4,425	2,200	49.7	2,225	50.3	1,347	30.4	878	19.8
Male head, no spouse	840	432	51.4	408	48.6	278	33.1	130	15.5
Other household with child <sup>2</sup>	197	104	52.8	93	47.2	56	28.4	37	18.8
With no children < 18 yrs	11,154	7,467	66.9	3,687	33.1	1,665	14.9	2,022	18.1
More than one adult	4,208	2,813	66.8	1,395	33.2	687	16.3	708	16.8
Women living alone	4,206	2,823	67.1	1,383	32.9	573	13.6	810	19.3
Men living alone	2,740	1,830	66.8	910	33.2	406	14.8	504	18.4
With elderly	4,315	3,361	77.9	954	22.1	531	12.3	423	9.8
Elderly living alone	2,465	1,972	80.0	493	20.0	243	9.9	250	10.1
Race/ethnicity of households:									
White non-Hispanic	10,182	6,707	65.9	3,475	34.1	1,710	16.8	1,765	17.3
Black non-Hispanic	4,455	2,396	53.8	2,059	46.2	1,167	26.2	892	20.0
Hispanic <sup>3</sup>	4,596	2,604	56.7	1,992	43.3	1,294	28.2	698	15.2
Other	1,149	719	62.6	430	37.4	233	20.3	197	17.1
Area of residence: <sup>4</sup>									
Inside metropolitan area	16,199	9,705	59.9	6,494	40.1	3,617	22.3	2,877	17.8
In principal cities <sup>5</sup>	7,030	4,019	57.2	3,011	42.8	1,762	25.1	1,249	17.8
Not in principal cities	6,055	3,789	62.6	2,266	37.4	1,192	19.7	1,074	17.7
Outside metropolitan area	4,184	2,721	65.0	1,463	35.0	787	18.8	676	16.2
Census geographic region:									
Northeast	3,241	2,059	63.5	1,182	36.5	615	19.0	567	17.5
Midwest	4,303	2,581	60.0	1,722	40.0	952	22.1	770	17.9
South	8,510	5,105	60.0	3,405	40.0	1,921	22.6	1,484	17.4
West	4,329	2,681	61.9	1,648	38.1	916	21.2	732	16.9
Individuals in low-income households (by food security status of household):									
All individuals in low-income households	56,265	32,341	57.5	23,924	42.5	14,447	25.7	9,477	16.8
Adults in low-income households	36,196	21,750	60.1	14,446	39.9	8,241	22.8	6,205	17.1
Children in low-income households	20,069	10,592	52.8	9,477	47.2	6,206	30.9	3,271	16.3

<sup>1</sup>Totals exclude households whose income was not reported (about 15 percent of households), and those whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale (0.7 percent of low-income households).

<sup>2</sup>Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

<sup>3</sup>Hispanics may be of any race.

<sup>4</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2004 and later years but are not precisely comparable with those of earlier years.

<sup>5</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 19 percent of low-income households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

Table 5

**Number of individuals by food security status of households and selected household characteristics, 2008**

Category	Total <sup>1</sup>	In food-insecure households							
		In food-secure households		All		In households with low food security		In households with very low food security	
		1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All individuals in households	299,567	250,459	83.6	49,108	16.4	31,824	10.6	17,284	5.8
Household composition:									
With children < 18 yrs	160,524	126,394	78.7	34,130	21.3	23,549	14.7	10,581	6.6
With children < 6 yrs	75,300	57,646	76.6	17,654	23.4	12,795	17.0	4,859	6.5
Married-couple families	115,058	97,333	84.6	17,725	15.4	12,831	11.2	4,894	4.3
Female head, no spouse	33,681	20,726	61.5	12,955	38.5	8,212	24.4	4,743	14.1
Male head, no spouse	9,629	6,860	71.2	2,769	28.8	2,015	20.9	754	7.8
Other household with child <sup>2</sup>	2,155	1,474	68.4	681	31.6	491	22.8	190	8.8
With no children < 18 yrs	139,043	124,064	89.2	14,979	10.8	8,276	6.0	6,703	4.8
More than one adult	106,948	96,620	90.3	10,328	9.7	5,977	5.6	4,351	4.1
Women living alone	17,934	15,266	85.1	2,668	14.9	1,284	7.2	1,384	7.7
Men living alone	14,160	12,177	86.0	1,983	14.0	1,015	7.2	968	6.8
With elderly	54,468	49,301	90.5	5,167	9.5	3,396	6.2	1,771	3.3
Elderly living alone	11,148	10,168	91.2	980	8.8	552	5.0	428	3.8
Race/ethnicity of households:									
White non-Hispanic	199,282	176,212	88.4	23,070	11.6	14,239	7.1	8,831	4.4
Black non-Hispanic	36,722	26,723	72.8	9,999	27.2	6,403	17.4	3,596	9.8
Hispanic <sup>3</sup>	44,820	31,653	70.6	13,167	29.4	9,212	20.6	3,955	8.8
Other	18,742	15,870	84.7	2,872	15.3	1,970	10.5	902	4.8
Household income-to-poverty ratio:									
Under 1.00	36,647	19,752	53.9	16,895	46.1	10,050	27.4	6,845	18.7
Under 1.30	56,265	32,341	57.5	23,924	42.5	14,447	25.7	9,477	16.8
Under 1.85	80,823	50,509	62.5	30,314	37.5	18,728	23.2	11,586	14.3
1.85 and over	175,935	161,887	92.0	14,048	8.0	9,810	5.6	4,238	2.4
Income unknown	42,809	38,061	88.9	4,748	11.1	3,287	7.7	1,461	3.4
Area of residence: <sup>4</sup>									
Inside metropolitan area	251,869	210,500	83.6	41,369	16.4	26,822	10.6	14,547	5.8
In principal cities <sup>5</sup>	81,111	64,627	79.7	16,484	20.3	11,039	13.6	5,445	6.7
Not in principal cities	128,278	110,238	85.9	18,040	14.1	11,487	9.0	6,553	5.1
Outside metropolitan area	47,698	39,959	83.8	7,739	16.2	5,002	10.5	2,737	5.7
Census geographic region:									
Northeast	53,859	46,354	86.1	7,505	13.9	4,700	8.7	2,805	5.2
Midwest	65,640	55,599	84.7	10,041	15.3	6,551	10.0	3,490	5.3
South	110,029	90,382	82.1	19,647	17.9	12,879	11.7	6,768	6.2
West	70,039	58,122	83.0	11,917	17.0	7,695	11.0	4,222	6.0

<sup>1</sup>Totals exclude individuals in households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2008, these represented 893,000 individuals (0.3 percent of all individuals.)

<sup>2</sup>Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

<sup>3</sup>Hispanics may be of any race.

<sup>4</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2004 and later years but are not precisely comparable with those of earlier years.

<sup>5</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of individuals living in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

Table 6

**Number of children by food security status of households and selected household characteristics, 2008**

Category	Total <sup>1</sup>	In food-secure households		In food-insecure households <sup>2</sup>		In households with very low food security among children	
			Percent		Percent		Percent
All children	74,106	57,433	77.5	16,673	22.5	1,077	1.5
Household composition:							
With children < 6 yrs	37,467	28,303	75.5	9,164	24.5	456	1.2
Married-couple families	51,457	43,346	84.2	8,111	15.8	421	0.8
Female head, no spouse	17,508	10,516	60.1	6,992	39.9	554	3.2
Male head, no spouse	4,305	3,012	70.0	1,293	30.0	84	2.0
Other household with child <sup>3</sup>	836	559	66.9	277	33.1	19	2.3
Race/ethnicity of households:							
White non-Hispanic	43,900	36,874	84.0	7,026	16.0	271	0.6
Black non-Hispanic	10,998	7,260	66.0	3,738	34.0	351	3.2
Hispanic <sup>4</sup>	14,679	9,705	66.1	4,974	33.9	400	2.7
Other	4,530	3,597	79.4	933	20.6	54	1.2
Household income-to-poverty ratio:							
Under 1.00	13,331	6,465	48.5	6,866	51.5	570	4.3
Under 1.30	20,069	10,592	52.8	9,477	47.2	760	3.8
Under 1.85	26,926	15,386	57.1	11,540	42.9	872	3.2
1.85 and over	38,193	34,438	90.2	3,755	9.8	120	0.3
Income unknown	8,987	7,609	84.7	1,378	15.3	85	0.9
Area of residence: <sup>5</sup>							
Inside metropolitan area	62,532	48,583	77.7	13,949	22.3	922	1.5
In principal cities <sup>6</sup>	20,294	14,529	71.6	5,765	28.4	344	1.7
Not in principal cities	31,826	25,910	81.4	5,916	18.6	445	1.4
Outside metropolitan area	11,574	8,851	76.5	2,723	23.5	155	1.3
Census geographic region:							
Northeast	12,319	9,893	80.3	2,426	19.7	166	1.3
Midwest	16,192	12,779	78.9	3,413	21.1	175	1.1
South	27,686	20,964	75.7	6,722	24.3	364	1.3
West	17,909	13,797	77.0	4,112	23.0	372	2.1

<sup>1</sup>Totals exclude children in households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2008, these represented 221,000 children (0.3 percent.)

<sup>2</sup>Food-insecure households are those with low or very low food security among adults or children.

<sup>3</sup>Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

<sup>4</sup>Hispanics may be of any race.

<sup>5</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2004 and later years, but are not precisely comparable with those of earlier years.

<sup>6</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of children living in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

sampling variation—the uncertainty associated with estimates that are based on information from a limited number of households in each State. The margins of error presented in table 7 indicate the range (above or below the estimated prevalence rate) within which the true prevalence rate is 90 percent likely to fall. For example, considering the margins of error, it is not certain that the prevalence of very low food security was higher in Mississippi than in the States with the next five highest prevalence rates.

Taking into account margins of error of the State and U.S. estimates, the prevalence of food insecurity was higher (i.e., statistically significantly higher) than the national average in 10 States and lower than the national average in 14 States. In the remaining 26 States and the District of Columbia, differences from the national average were not statistically significant. The prevalence of very low food security was higher than the national average in 8 States, lower than the national average in 9 States, and not significantly different from the national average in 33 States and the District of Columbia.

State-level prevalence rates of food insecurity and very low food security for the period 2006-08 are compared with 3-year average rates for 2003-05 and 1996-98 in table 8. The prevalence rates for 2006-08 are repeated from table 7. The prevalence rates for the two earlier periods were reported previously in *Household Food Security in the United States, 2005* (Nord et al., 2006). The 1996-98 statistics presented here and in *Household Food Security in the United States, 2005* were revised from those reported in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999) to adjust for differences in data collection procedures in the two periods.<sup>13</sup> They are presented as a baseline to assess longer term changes in State-level food security conditions.<sup>14</sup>

In four States—Idaho, South Carolina, Utah, and Wyoming—prevalence rates of food insecurity declined from 2003-05 to 2006-08 by statistically significant percentages. The largest declines were in Idaho and Utah. Prevalence rates increased by statistically significant percentages in 13 States, with the largest increases observed in Nevada and West Virginia. During the same period, the prevalence of very low food security declined by a statistically significant percentage only in Wyoming, while increasing in 23 States. The largest increases were in Mississippi and Oregon. Changes not marked as statistically significant in table 8 were within ranges that could have resulted from sampling variation (that is, by the interviewed households not precisely representing all households in the State).

<sup>13</sup>To reduce the burden on survey respondents, households—especially those with higher incomes—that report no indication of any food access problems on two or three “screener” questions are not asked the questions in the food security module. They are classified as food secure. Screening procedures in the CPS food security surveys were modified from year to year prior to 1998 to achieve an acceptable balance between accuracy and respondent burden. Since 1998, screening procedures have remained unchanged. The older, more restrictive screening procedures depressed prevalence estimates—especially for food insecurity—compared with those in use since 1998 because a small proportion of food-insecure households were screened out along with those that were food secure. To provide an appropriate baseline for assessing changes in State prevalence rates of food insecurity, statistics from the 1996-98 report were adjusted upward to offset the estimated effects of the earlier screening procedures on each States’ prevalence rates. The method used to calculate these adjustments was described in detail in *Household Food Security in the United States, 2001* (Nord et al., 2002), appendix D.

<sup>14</sup>Seasonal effects on food security measurement (see fig. 2) probably bias prevalence rates for 1996-98 upward somewhat compared with 2003-05 and 2006-08. At the national level, this effect may have raised the measured prevalence rate of food insecurity in 1996-98 by about 0.8 percentage point and the prevalence rate of very low food security by about 0.4 percentage point. However, seasonal effects may have differed from State to State.

Table 7

**Prevalence of household-level food insecurity and very low food security by State, average 2006-08<sup>1</sup>**

State	Number of households		Food insecurity (low or very low food security)		Very low food security	
	Average 2006-08 <sup>2</sup>	Interviewed	Prevalence	Margin of error <sup>3</sup>	Prevalence	Margin of error <sup>3</sup>
	<i>Number</i>	<i>Number</i>	<i>Percent</i>	<i>Percentage points</i>	<i>Percent</i>	<i>Percentage points</i>
U.S.	116,758,000	124,307	12.2	0.25	4.6	0.18
AK	247,000	1,586	11.6	1.66	4.4	1.31
AL	1,873,000	1,398	13.3	1.66	5.4	1.02
AR	1,149,000	1,432	15.9*	3.19	5.6	1.50
AZ	2,496,000	1,542	13.2	1.51	4.9	.84
CA	12,882,000	9,176	12.0	.74	4.3	.48
CO	1,949,000	2,721	11.6	1.13	5.0	.67
CT	1,388,000	2,601	11.0	1.53	4.1	1.07
DC	277,000	1,917	12.4	1.15	4.2	.73
DE	338,000	1,887	9.4*	.98	3.7*	.73
FL	7,463,000	5,029	12.2	.64	4.9	.48
GA	3,670,000	2,627	14.2*	1.10	5.4*	.66
HI	452,000	1,744	9.1*	1.17	3.0*	.77
IA	1,233,000	2,554	11.6	1.15	4.8	.93
ID	547,000	1,437	11.4	1.37	3.9	.75
IL	4,930,000	3,702	11.1	1.27	4.1	.51
IN	2,483,000	2,029	11.2	1.49	4.3	1.04
KS	1,143,000	1,955	13.8*	1.09	4.8	1.09
KY	1,663,000	1,881	12.6	1.49	4.4	.80
LA	1,647,000	1,167	11.0	1.62	3.7	1.16
MA	2,484,000	1,891	8.3*	1.04	3.8	.96
MD	2,149,000	2,922	9.6*	.82	3.4*	.46
ME	541,000	2,566	13.7*	1.15	6.4*	.98
MI	3,973,000	2,952	12.0	1.45	4.4	.85
MN	2,110,000	3,169	10.3*	.92	4.1	.77
MO	2,421,000	2,230	14.0*	1.31	5.8*	.97
MS	1,149,000	1,207	17.4*	2.22	7.4*	1.40
MT	426,000	1,481	10.9*	1.25	4.4	.76
NC	3,580,000	2,597	13.7*	1.38	4.4	.66
ND	272,000	1,776	6.9*	.93	2.6*	.65
NE	710,000	1,948	10.4*	1.06	4.0	.72
NH	518,000	2,729	8.5*	.83	3.1*	.66
NJ	3,148,000	2,292	10.3*	.97	3.4*	.84
NM	761,000	1,165	14.1*	1.74	4.6	.92
NV	984,000	1,957	12.4	1.67	4.6	.99
NY	7,596,000	4,844	11.3	.95	4.3	.46
OH	4,567,000	3,523	13.3	1.22	5.2	.62
OK	1,414,000	1,648	14.0*	1.41	5.9*	.81
OR	1,498,000	1,733	13.1	1.55	6.6*	1.14
PA	4,970,000	3,835	11.2	.98	4.2	.47
RI	427,000	2,097	11.7	1.44	4.2	.55
SC	1,795,000	1,827	13.1	1.24	5.2	.91
SD	325,000	2,111	10.3*	1.72	4.1	1.06
TN	2,520,000	1,733	13.5	2.00	4.6	.93
TX	8,646,000	5,904	16.3*	1.08	5.7*	.56
UT	861,000	1,308	11.2	1.88	4.5	1.13
VA	2,966,000	2,608	8.6*	1.25	3.3*	.68
VT	261,000	1,837	12.1	1.63	5.7*	1.09
WA	2,599,000	2,151	11.1	1.72	4.3	.56
WI	2,312,000	2,574	10.1*	.72	3.7*	.42
WV	727,000	1,521	12.0	2.03	4.5	1.10
WY	221,000	1,786	9.2*	1.44	2.9*	.81

\*Difference from U.S. average was statistically significant with 90 percent confidence ( $t > 1.645$ ).

<sup>1</sup>Prevalence rates for 1996-98 reported in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999) are not directly comparable with the rates reported here because of differences in screening procedures in the CPS Food Security Supplements from 1995 to 1998. Comparable statistics for the earlier period are presented in table 8.

<sup>2</sup>Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. These represented about 0.3 percent of all households in each year.

<sup>3</sup>Margin of error with 90 percent confidence (1.645 times the standard error of the estimated prevalence rate).

Source: Prepared by ERS using data from the December 2006, December 2007, and December 2008 Current Population Survey Food Security Supplements.

Table 8

**Prevalence of household-level food insecurity and very low food security by State, 1996-98 (average), 2003-05 (average), and 2006-08 (average)<sup>1</sup>**

State	Food insecurity (low or very low food security)					Very low food security				
	Average	Average	Average	Change	Change	Average	Average	Average	Change	Change
	2006-08	2003-05	1996-98 <sup>1</sup>	2003-05 to 2006-08	1996-98 to 2006-08	2006-08	2003-05	1996-98 <sup>1</sup>	2003-05 to 2006-08	1996-98 to 2006-08
	Percent		Percentage points		Percent		Percentage points			
U.S.	12.2	11.4	11.3	0.8*	0.9*	4.6	3.8	3.7	0.8*	0.9*
AK	11.6	12.2	8.7	-6	2.9*	4.4	4.9	3.6	-.5	.8
AL	13.3	12.3	12.5	1.0	.8	5.4	3.4	3.3	2.0*	2.1*
AR	15.9	14.7	13.7	1.2	2.2	5.6	5.6	4.8	0.0	.8
AZ	13.2	12.2	14.6	1.0	-1.4	4.9	3.8	4.3	1.1*	.6
CA	12.0	11.7	13.3	.3	-1.3*	4.3	3.6	4.3	.7*	0.0
CO	11.6	12.0	10.8	-.4	.8	5.0	3.9	3.8	1.1*	1.2*
CT	11.0	8.2	11.0	2.8*	0.0	4.1	2.6	4.1	1.5*	0.0
DC	12.4	11.4	13.7	1.0	-1.3	4.2	3.8	4.7	.4	-.5
DE	9.4	6.6	8.1	2.8*	1.3	3.7	1.9	2.9	1.8*	.8
FL	12.2	9.4	13.2	2.8*	-1.0	4.9	3.5	4.5	1.4*	.4
GA	14.2	12.4	10.9	1.8*	3.3*	5.4	5.1	3.4	.3	2.0*
HI	9.1	7.8	12.9	1.3	-3.8*	3.0	2.8	3.1	.2	-.1
IA	11.6	10.9	8.0	.7	3.6*	4.8	3.5	2.6	1.3*	2.2*
ID	11.4	14.1	11.3	-2.7*	.1	3.9	3.7	3.3	.2	.6
IL	11.1	9.1	9.6	2.0*	1.5*	4.1	3.2	3.2	.9*	.9*
IN	11.2	11.1	9.0	.1	2.2	4.3	4.1	2.9	.2	1.4*
KS	13.8	12.3	11.5	1.5	2.3*	4.8	4.6	4.2	.2	.6
KY	12.6	12.8	9.7	-.2	2.9*	4.4	4.2	3.4	.2	1.0*
LA	11.0	12.8	14.4	-1.8	-3.4*	3.7	3.6	4.4	.1	-.7
MA	8.3	7.8	7.5	.5	.8	3.8	3.0	2.1	.8	1.7*
MD	9.6	9.4	8.7	.2	.9	3.4	3.6	3.3	-.2	.1
ME	13.7	12.3	9.8	1.4	3.9*	6.4	4.6	4.0	1.8*	2.4*
MI	12.0	11.5	9.6	.5	2.4*	4.4	4.1	3.1	.3	1.3*
MN	10.3	7.7	8.6	2.6*	1.7*	4.1	3.0	3.1	1.1*	1.0*
MO	14.0	11.7	10.1	2.3*	3.9*	5.8	4.0	3.0	1.8*	2.8*
MS	17.4	16.5	14.6	.9	2.8	7.4	4.4	4.2	3.0*	3.2*
MT	10.9	11.2	11.2	-.3	-.3	4.4	4.6	3.0	-.2	1.4*
NC	13.7	13.2	9.8	.5	3.9*	4.4	4.5	2.7	-.1	1.7*
ND	6.9	6.4	5.5	.5	1.4*	2.6	2.2	1.6	.4	1.0*
NE	10.4	10.3	8.7	.1	1.7*	4.0	4.0	2.5	0.0	1.5*
NH	8.5	6.5	8.6	2.0*	-.1	3.1	2.2	3.1	.9	0.0
NJ	10.3	8.1	8.9	2.2*	1.4*	3.4	2.6	3.1	.8	.3
NM	14.1	16.8	16.5	-2.7	-2.4*	4.6	5.7	4.8	-1.1	-.2
NV	12.4	8.4	10.4	4.0*	2.0	4.6	3.0	4.0	1.6*	.6
NY	11.3	10.4	11.9	.9	-.6	4.3	3.1	4.1	1.2*	.2
OH	13.3	12.6	9.7	.7	3.6*	5.2	3.8	3.5	1.4*	1.7*
OK	14.0	14.6	13.1	-.6	.9	5.9	4.8	4.2	1.1*	1.7*
OR	13.1	11.9	14.2	1.2	-1.1	6.6	3.9	6.0	2.7*	.6
PA	11.2	9.8	8.3	1.4*	2.9*	4.2	2.9	2.6	1.3*	1.6*
RI	11.7	12.4	10.2	-.7	1.5	4.2	4.1	2.7	.1	1.5*
SC	13.1	15.5	11.0	-2.4*	2.1*	5.2	6.3	3.5	-1.1	1.7*
SD	10.3	9.5	8.2	.8	2.1*	4.1	3.2	2.2	.9	1.9*
TN	13.5	13.0	11.8	.5	1.7	4.6	4.2	4.4	.4	.2
TX	16.3	16.0	15.2	.3	1.1*	5.7	5.1	5.5	.6*	.2
UT	11.2	14.5	10.3	-3.3*	.9	4.5	5.1	3.1	-.6	1.4
VA	8.6	8.4	10.2	.2	-1.6	3.3	2.7	3.0	.6	.3
VT	12.1	9.5	8.8	2.6*	3.3*	5.7	3.9	2.7	1.8*	3.0*
WA	11.1	11.2	13.2	-.1	-2.1	4.3	3.9	4.7	.4	-.4
WI	10.1	9.5	8.5	.6	1.6*	3.7	2.7	2.6	1.0*	1.1*
WV	12.0	8.9	9.5	3.1*	2.5	4.5	3.0	3.1	1.5*	1.4*
WY	9.2	11.1	9.9	-1.9*	-.7	2.9	4.1	3.5	-1.2*	-.6

\*Change was statistically significant with 90 percent confidence ( $t > 1.645$ ).

<sup>1</sup> Statistics for 1996-98 were revised to account for changes in survey screening procedures introduced in 1998.

Source: Prepared by ERS based on Current Population Survey Food Security Supplement data.



## Household Spending on Food

This section provides information on how much households spent on food, as reported in the December 2008 food security survey. Food insecurity is a condition that arises from lack of money and other resources to acquire food. In most households, the majority of food consumed by household members is purchased—either from supermarkets or grocery stores to be eaten at home, or from cafeterias, restaurants, or vending machines to be eaten outside the home. The amount of money that a household spends on food, therefore, provides insight into how adequately the household is meeting its food needs.<sup>15</sup> When households reduce food spending below some minimum level because of constrained resources, various aspects of food insecurity such as disrupted eating patterns and reduced food intake may result.

### Methods

The household food expenditure statistics in this report are based on *usual* weekly spending for food, as reported by respondents after they were given a chance to reflect on the household's actual food spending during the previous week. Respondents were first asked to report the amounts of money their households had spent on food in the week prior to the interview (including any purchases made with SNAP or food stamp benefits) at:

- supermarkets and grocery stores;
- stores other than supermarkets and grocery stores, such as meat markets, produce stands, bakeries, warehouse clubs, and convenience stores;
- restaurants, fast food places, cafeterias, and vending machines;
- any other kind of place.<sup>16</sup>

Total spending for food, based on responses to this series of questions, was verified with the respondent, and the respondent was then asked how much the household usually spent on food during a week. Earlier analyses by ERS researchers found that food expenditures estimated from data collected by this method were consistent with estimates from the Consumer Expenditure Survey (CES)—the principal source of data on U.S. household expenditures for goods and services (Oliveira and Rose, 1996).

Food spending was adjusted for household size and composition in two ways. The first adjustment was calculated by dividing each household's usual weekly food spending by the number of persons in the household, yielding the "usual weekly food spending per person" for that household. The second adjustment accounts more precisely for the different food needs of households by comparing each household's usual food spending to the estimated cost of the Thrifty Food Plan for that household in December 2008.<sup>17</sup> The Thrifty Food Plan—developed by USDA—serves as a national standard for a nutritious, low-cost diet. It represents a set of "market baskets" of food that people in specific age and gender categories could consume at home to maintain a healthful diet that meets current dietary standards, taking into account the food consumption patterns of U.S. households.<sup>18</sup> Each household's reported usual weekly food spending was divided by the cost of the Thrifty Food Plan for that household, calculated

<sup>15</sup>Food spending is only an indirect indicator of food consumption. It understates food consumption in households that receive food from in-kind programs, such as the National School Lunch and School Breakfast Programs; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); meal programs for children in child care and for the elderly; and private charitable organizations. (Purchases with SNAP benefits, however, are counted as food spending in the CPS food security survey.) Food spending also understates food consumption in households that acquire a substantial part of their food supply through gardening, hunting, or fishing, as well as in households that eat more meals at friends' or relatives' homes than they provide to friends or relatives. (Food spending overstates food consumption in households with the opposite characteristics.) Food spending also understates food consumption in geographical areas with relatively low food prices and overstates consumption in areas with high food prices.

<sup>16</sup>For spending in the first two categories of stores, respondents were also asked how much of the amount was for "nonfood items such as pet food, paper products, alcohol, detergents, or cleaning supplies." These amounts are not included in calculating spending for food.

<sup>17</sup>The cost of the Thrifty Food Plan is revised each month to account for inflation in food prices.

<sup>18</sup>The Thrifty Food Plan, in addition to its use as a research tool, is used as a basis for setting the maximum SNAP (food stamp) benefit amounts. (See appendix C for further information on the Thrifty Food Plan and estimates of the weekly cost of the Thrifty Food Plan and three other USDA food plans for each age-gender group.)

based on the age and gender of each household member and the number of persons in the household (see table C-1).<sup>19</sup>

The medians of each of the two food spending measures (spending per person per week and spending relative to the cost of the Thrifty Food Plan) were estimated at the national level and for households in various categories to represent the usual weekly food spending of the typical household in each category. Medians are reported rather than averages (means) because medians are not unduly affected by the few unexpectedly high values of usual food spending that are believed to be reporting errors or data entry errors. Thus, the median better reflects what a typical household spent.

Data were weighted using food security supplement weights provided by the U.S. Census Bureau so that the interviewed households would represent all households in the United States. About 10 percent of households interviewed in the CPS food security survey did not respond to the food spending questions or reported zero usual food spending and were excluded from the analysis. As a result, the total number of households represented in tables 9 and 10 is somewhat smaller than that in tables 1 and 2, and food spending estimates may not be fully representative of all households in the United States.<sup>20</sup>

## Food Expenditures, by Selected Household Characteristics

In 2008, the typical U.S. household spent \$43.75 per person each week for food (table 9). Median household food spending relative to the cost of the Thrifty Food Plan—which adjusts more precisely for food needs of persons in different age-gender categories—was 1.14. That is, the typical household spent 14 percent more on food than the cost of the Thrifty Food Plan, taking into account the age and gender of the household members. Median spending for food per person (\$43.75 per person per week), not adjusted for inflation, was higher than in 2007 (\$42.50), but median spending relative to the cost of the Thrifty Food Plan was lower in 2008 (1.14) than in 2007 (1.20).

Households with children under age 18 generally spent less for food, relative to the cost of the Thrifty Food Plan, than those without children. The typical household with children spent an amount equal to the cost of the Thrifty Food Plan, while the typical household with no children spent 20 percent more than the cost of the Thrifty Food Plan. The median food expenditure relative to the Thrifty Food Plan was lower for households with children headed by single women (0.92) than for married couples with children (1.03). The median food expenditure relative to the Thrifty Food Plan was highest for men living alone (1.37).

Median food expenditures relative to the Thrifty Food Plan were lower for Black households (0.95) and Hispanic households (0.96) than for non-Hispanic White households (1.19). This pattern is consistent with the lower average incomes and higher poverty rates of these racial and ethnic minorities.

As expected, higher income households spent more money on food than lower income households.<sup>21</sup> The typical household with income below the poverty line spent about 13 percent less than the cost of the Thrifty Food Plan, while the typical household with income above 185 percent of the poverty line spent 25 percent more than the cost of the Thrifty Food Plan.

<sup>19</sup>Thrifty Food Plan costs are estimated separately for Alaska and Hawaii using adjustment factors calculated from USDA's Thrifty Food Plan costs for those States for the second half of 2008.

<sup>20</sup>Households that were unable or unwilling to report food spending were less likely to be food insecure than those that did report food spending (8.5 percent compared with 11.4 percent). Food spending may, therefore, be slightly underestimated from these data.

<sup>21</sup>However, food spending does not rise proportionately with income increases, so high-income households actually spend a smaller *proportion* of their income on food than do low-income households.



Table 9

**Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP), 2008**

Category	Number of households <sup>1</sup>	Median weekly food spending	
		Per person	Relative to cost of TFP
	<i>1,000</i>	<i>Dollars</i>	<i>Ratio</i>
All households	110,072	43.75	1.14
Household composition:			
With children < 18 yrs	37,626	33.33	1.00
At least one child < 6 yrs	16,717	30.00	.99
Married-couple families	25,389	34.00	1.03
Female head, no spouse	9,078	31.43	.92
Male head, no spouse	2,624	33.33	.94
Other household with child <sup>2</sup>	535	30.00	.88
With no children < 18 yrs	72,446	50.00	1.20
More than one adult	42,845	47.50	1.20
Women living alone	16,405	50.00	1.18
Men living alone	13,196	62.00	1.37
With elderly	25,505	44.00	1.08
Elderly living alone	9,879	50.00	1.18
Race/ethnicity of households:			
White non-Hispanic	77,905	47.50	1.19
Black non-Hispanic	13,191	36.67	.95
Hispanic <sup>3</sup>	12,728	35.00	.96
Other	6,248	42.50	1.12
Household income-to-poverty ratio:			
Under 1.00	12,305	32.50	.87
Under 1.30	19,258	33.00	.89
Under 1.85	28,079	33.33	.90
1.85 and over	67,579	50.00	1.25
Income unknown	14,413	40.00	1.07
Area of residence: <sup>4</sup>			
Inside metropolitan area	91,974	45.00	1.17
In principal cities <sup>5</sup>	30,542	45.00	1.17
Not in principal cities	45,203	45.00	1.18
Outside metropolitan area	18,097	40.00	1.01
Census geographic region:			
Northeast	19,741	45.00	1.18
Midwest	24,610	40.00	1.07
South	40,922	42.50	1.14
West	24,799	47.33	1.19

<sup>1</sup>Totals exclude households that did not answer the questions about spending on food or reported zero usual food spending. These represented 6.5 percent of all households.

<sup>2</sup>Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

<sup>3</sup>Hispanics may be of any race.

<sup>4</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation. Food spending statistics by area of residence are comparable with those for 2004 and later years, but are not precisely comparable with those of earlier years.

<sup>5</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

Median food spending relative to the cost of the Thrifty Food Plan for households outside metropolitan areas was 1.01, compared with 1.17 for households inside metropolitan areas. Regionally, median spending on food was lowest in the Midwest (1.07 times the cost of the Thrifty Food Plan).

## Food Expenditures and Household Food Security

Food-secure households typically spent more on food than food-insecure households. Median food spending relative to the cost of the Thrifty Food Plan was 1.18 among food-secure households, compared with 0.90 among food-insecure households (table 10). Thus, the typical food-secure household spent 31 percent more for food than the typical household of the same size and composition that was food insecure.

The pattern of higher food spending by food-secure households was consistent across household structure, race/ethnicity, income, metropolitan residence, and geographic region (table 11). For every household type, median food spending relative to the cost of the Thrifty Food Plan was higher for food-secure than food-insecure households. This was true even for households within the same income category. For example, among households with incomes below the poverty line, median food spending relative to the cost of the Thrifty Food Plan was 0.91 for food-secure households compared with 0.82 for food-insecure households.

Although the relationship between food expenditures and food security was consistent, the levels of food expenditure varied substantially across household types, even within the same food security status. For food-insecure households, food expenditures of typical households in most categories were below the cost of the Thrifty Food Plan, but there were some notable exceptions. Food-insecure individuals living alone—especially men living alone—spent substantially more on food than the cost of the Thrifty Food Plan for their age and gender. Food-insecure households with incomes above 185 percent of the poverty line also registered a median food expenditure higher than the cost of the Thrifty Food Plan.<sup>22</sup>

<sup>22</sup>ERS analysis has found that the experiences of food insecurity of higher and middle-income households are, disproportionately, occasional and of short duration (Nord et al., 2000). Their food expenditures during those food-insecure periods may have been lower than the amount they reported as their “usual” weekly spending for food.

Table 10

### Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP) by food security status, 2008

Category	Number of households <sup>1</sup>	Median weekly food spending	
		Per person	Relative to cost of TFP
	<i>1,000</i>	<i>Dollars</i>	<i>Ratio</i>
All households	110,072	43.75	1.14
Food security status:			
Food-secure households	93,528	45.00	1.18
Food-insecure households	16,327	33.33	.90
Households with low food security	9,936	33.33	.91
Households with very low food security	6,391	34.50	.89

<sup>1</sup>Total for all households excludes households that did not answer the questions about spending on food or reported zero usual spending for food. These represented 6.5 percent of all households. Totals in the bottom section also exclude households that did not answer any of the questions in the food security scale.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

Table 11

**Weekly household food spending relative to the cost of the Thrifty Food Plan (TFP) by food security status and selected household characteristics, 2008**

Category	Median weekly food spending relative to TFP <sup>1</sup>	
	Food secure	Food insecure
	<i>Ratio</i> (cost of TFP = 1)	
All households	1.18	0.90
Household composition:		
With children < 18 yrs	1.04	.84
At least one child < 6 yrs	1.03	.81
Married couple families	1.06	.83
Female head, no spouse	.98	.84
Male head, no spouse	.96	.89
Other household with child <sup>2</sup>	.98	NA
With no children < 18 yrs	1.24	.96
More than one adult	1.20	.88
Women living alone	1.20	1.07
Men living alone	1.37	1.14
With elderly	1.11	.89
Elderly living alone	1.18	.99
Race/ethnicity of households:		
White non-Hispanic	1.20	.95
Black non-Hispanic	.98	.84
Hispanic <sup>3</sup>	1.00	.83
Other	1.16	.96
Household income-to-poverty ratio:		
Under 1.00	.91	.82
Under 1.30	.92	.83
Under 1.85	.94	.83
1.85 and over	1.26	1.06
Income unknown	1.11	.79
Area of residence: <sup>4</sup>		
Inside metropolitan area	1.20	.91
In principal cities <sup>5</sup>	1.20	.91
Not in principal cities	1.20	.94
Outside metropolitan area	1.04	.85
Census geographic region:		
Northeast	1.20	.96
Midwest	1.11	.88
South	1.18	.86
West	1.21	.95

NA=Median not reported; fewer than 100 interviewed households in the category.

<sup>1</sup>Statistics exclude households that did not answer the questions about spending on food or reported zero usual food spending and those that did not provide valid responses to any of the questions on food security. These represented 6.8 percent of all households.

<sup>2</sup>Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

<sup>3</sup>Hispanics may be of any race.

<sup>4</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation. Food spending statistics by area of residence are comparable with those for 2004 and later years but are not precisely comparable with those of earlier years.

<sup>5</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

## Use of Federal and Community Food and Nutrition Assistance Programs

Households with limited resources employ a variety of methods to help meet their food needs. Some participate in one or more of the Federal food and nutrition assistance programs or obtain food from emergency food providers in their communities to supplement the food they purchase. Households that turn to Federal and community food and nutrition assistance programs typically do so because they are having difficulty in meeting their food needs. The use of such programs by low-income households and the relationship between their food security status and use of food and nutrition assistance programs provide insight into the extent of their difficulties in obtaining enough food and the ways they cope with those difficulties.

This section presents information about the food security status and food expenditures of households that participated in the three largest Federal food and nutrition assistance programs and the two most common community food assistance programs. (See box, “Federal and Community Food and Nutrition Assistance Programs,” p. 28) It also provides information about the extent to which food-insecure households participated in these programs and about the characteristics of households that obtained food from community food pantries. Total participation in the Federal food and nutrition assistance programs, participation rates of eligible households in those programs, and characteristics of participants in those programs are not described in this report. Extensive information on those topics is available from the USDA’s Food and Nutrition Service.<sup>23</sup>

### Methods

The December 2008 CPS food security survey included a number of questions about the use of Federal and community-based food and nutrition assistance programs. All households with incomes below 185 percent of the Federal poverty threshold were asked these questions. In order to minimize the burden on respondents, households with incomes above that range were not asked the questions unless they indicated some level of difficulty in meeting their food needs on preliminary screener questions (listed in footnote 4). The questions analyzed in this section are:

- “During the past 12 months...did anyone in this household get food stamp benefits, that is, either food stamps or a food-stamp benefit card?” Households that responded affirmatively were then asked in which months they received food stamp benefits and on what date they last received them. Information from these three questions was combined to identify households that received SNAP benefits (the new name for the Food Stamp Program) in the 30 days prior to the survey.<sup>24</sup>
- “During the past 30 days, did any children in the household...receive free or reduced-cost lunches at school?” (Only households with children between the ages of 5 and 18 were asked this question.)
- “During the past 30 days, did any women or children in this household get food through the WIC program?” (Only households with a child aged 0-5 or a woman aged 15-45 were asked this question.)

<sup>23</sup>Information on Federal food and nutrition assistance programs, including participation rates and characteristics of participants, is available from the Food and Nutrition Service website at [www.fns.usda.gov](http://www.fns.usda.gov). Additional research findings on the operation and effectiveness of these programs are available from the ERS website at [www.ers.usda.gov/briefing/foodnutritionassistance](http://www.ers.usda.gov/briefing/foodnutritionassistance).

<sup>24</sup>The Food Stamp Program was in the process of being renamed in some States at the time of the December 2008 food security survey. Respondents were asked about “food stamp benefits or a food-stamp benefit card” rather than “SNAP benefits” because most would not yet have been aware of the name change. Interviewers were, however, alerted to the name change so they could provide clarification if needed.

## Federal and Community Food and Nutrition Assistance Programs

### *Federal Food and Nutrition Assistance Programs*

USDA's Food and Nutrition Service (FNS) administers 15 domestic food and nutrition assistance programs. The three largest programs are:

- The Supplemental Nutrition Assistance Program (SNAP), previously called the Food Stamp Program. The program provides monthly benefits for eligible low-income households to purchase approved food items at authorized food stores. Clients qualify for the program based on available household income, assets, and certain basic expenses. In an average month of fiscal year 2008 (October 1, 2007 through September 30, 2008), SNAP provided benefits to 28.4 million people in the United States. The average benefit was about \$102 per person per month, and total Federal expenditures for the program were \$37.5 billion.
- The National School Lunch Program. The program operates in about 100,000 public and nonprofit private schools and residential child-care institutions. All meals served under the program receive Federal subsidies, and free or reduced-price lunches are available to low-income students. In 2008, the program provided lunches to an average of 31 million children each school day. About half of the lunches served in 2008 were free, and an additional 10 percent were provided at reduced prices.
- The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The program is a federally funded preventive nutrition program that provides grants to States to support distribution of supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and nonbreastfeeding postpartum women, for infants in low-income families, and for children in low-income

families who are younger than 5 years old and who are found to be at nutritional risk. Most State WIC programs provide vouchers that participants use to acquire supplemental food packages at authorized food stores. In fiscal year 2008, WIC served an average 8.7 million participants per month at an average monthly cost for food (after rebates to the WIC program from manufacturers) of about \$44 per person.

### *Community Food-Assistance Providers*

Food pantries and emergency kitchens are the main direct providers of emergency food assistance. These agencies are locally based and rely heavily on volunteers. The majority of them are affiliated with faith-based organizations. (See Ohls et al., 2002, for more information.) Most of the food distributed by food pantries and emergency kitchens comes from local resources, but USDA supplements these resources through The Emergency Food Assistance Program (TEFAP). In 2008, TEFAP supplied 512 million pounds of commodities to community emergency food providers. Over half of all food pantries and emergency kitchens received TEFAP commodities in 2000, and these commodities accounted for about 14 percent of all food distributed by them (Ohls et al., 2002). Pantries and kitchens play different roles, as follows:

- Food pantries distribute unprepared foods for offsite use. An estimated 32,737 pantries operated in 2000 (the last year for which nationally representative statistics are available) and distributed, on average, 239 million pounds of food per month. Households using food pantries received an average of 38.2 pounds of food per visit.
- Emergency kitchens (sometimes referred to as soup kitchens) provide individuals with prepared food to eat at the site. In 2000 an estimated 5,262 emergency kitchens served a total of 474,000 meals on an average day.

- “In the last 12 months, did you or other adults in your household ever get emergency food from a church, a food pantry, or food bank?” The use of these resources any time during the last 12 months is referred to in the rest of this section as “food pantry use.” Households that reported using a food pantry in the last 12 months were asked, “How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?” Households reporting that they did not use a food pantry in the last 12 months were asked, “Is there a church, food pantry, or food bank in your community where you could get emergency food if you needed it?”
- “In the last 12 months, did you or other adults in your household ever eat any meals at a soup kitchen?” The use of this resource is referred to as “use of an emergency kitchen” in the following discussion.



Prevalence rates of food security, food insecurity, and very low food security, as well as median food expenditures relative to the cost of the Thrifty Food Plan, were calculated for households reporting use of each food and nutrition assistance provider and for comparison groups of nonparticipating households with incomes and household compositions similar to those of food assistance recipients. Statistics for participating households excluded households with incomes above the ranges specified for the comparison groups.<sup>25</sup> The proportions of food-insecure households participating in each of the three largest Federal food and nutrition assistance programs—the Supplemental Nutrition Assistance Program (SNAP), National School Lunch Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)—were calculated, as well as the proportion that participated in any of the three programs. These analyses were restricted to households with annual incomes below 185 percent of the poverty line because most households with incomes above this range were not asked whether they participated in these programs.

The numbers and proportions of households using food pantries and emergency kitchens were calculated at the national level and, for food pantries, by selected household characteristics. Households were not asked these questions, and were assumed not to have used these resources, if they had incomes above 185 percent of the poverty line and gave no indication of food insecurity on either of two preliminary screener questions (listed in footnote 6). Analysis indicated that this screening procedure excluded only a negligible number of households that may have used these facilities.

Estimates of the proportion of households using emergency kitchens based on the CPS food security surveys almost certainly understate the proportion of the population that actually uses these providers. The CPS selects households to interview from an address-based list and therefore interviews only persons who occupy housing units. People who are homeless at the time of the survey are not included in the sample, and those in tenuous housing arrangements (for instance, temporarily doubled up with another family) also may be missed. These two factors—exclusion of the homeless and underrepresentation of those who are tenuously housed—bias estimates of emergency kitchen use downward, especially among certain subgroups of the population. This is much less true for food pantry users because they need cooking facilities to make use of items from a food pantry.<sup>26</sup> Therefore, detailed analyses in this section focus primarily on the use of food pantries.

Finally, among households that participated in the three largest Federal food programs, the proportions who also obtained food from food pantries and emergency kitchens were calculated. This analysis was restricted to households with annual incomes below 185 percent of the poverty line.

Data for all calculations were weighted using food security supplement weights. These weights, provided by the U.S. Census Bureau, are based on sampling probabilities and enable the interviewed households to statistically represent all civilian households in the United States.

<sup>25</sup>Some program participants reported incomes that were higher than the program eligibility criteria. They may have had incomes below the eligibility threshold during part of the year, or subfamilies within the household may have had incomes low enough to have been eligible.

<sup>26</sup>Previous studies of emergency kitchen users and food pantry users confirm these assumptions. For example, a nationally representative survey of people who use food pantries and emergency kitchens found that about 36 percent of emergency kitchen clients and 8 percent of households that received food from food pantries were homeless in 2001 (Briefel et al., 2003).

## Food Security and Food Spending of Households That Received Food and Nutrition Assistance

The relationship between food security and the use of food and nutrition assistance programs is complex. There are reasons to expect that households that report using food and nutrition assistance programs in a one-time survey can either be more food secure or less food secure than low-income households not using those programs. Since the programs provide food and other resources to reduce the severity of food insecurity, households are expected to be more food secure after receiving program benefits than before doing so. On the other hand, it is the more food-insecure households, those having greater difficulty meeting their food needs, that seek assistance from the programs.<sup>27</sup> Fifty-six percent of households that received SNAP benefits, 49 percent of households that received free or reduced-cost school lunches, and 46 percent of those that received WIC benefits were food insecure (table 12). The prevalence of very low food security among households participating in SNAP was nearly twice that of nonparticipating households in the same income range (25.7 percent versus 13.4 percent). For households that received free or reduced-cost school lunches, the prevalence of very low food security was about 60 percent higher than that of nonparticipating households with school-age children in the same income range. About 70 percent of households that obtained emergency food from community food pantries were food insecure, and 38 percent had very low food security. Seventy-four percent of households in which someone had eaten at an emergency kitchen were food insecure and 50 percent had very low food security.

<sup>27</sup>This “self-selection” effect is evident in the association between food security and food program participation that is observed in the food security survey. Participating households were less food secure than similar nonparticipating households. More complex analysis using methods to account for this self-targeting is required to assess the extent to which the programs improve food security (see Wilde and Nord, 2005; Gundersen and Oliveira, 2001; Gundersen and Gruber, 2001; Nelson and Lurie, 1998).

Table 12

### Percent of households by food security status and participation in selected Federal and community food assistance programs, 2008

Category	Food secure	Food insecure		
		All	With low food security	With very low food security
<i>Percent</i>				
Income less than 130 percent of poverty line:				
Received SNAP <sup>1</sup> benefits previous 12 months	43.8	56.2	30.6	25.7
Received SNAP <sup>1</sup> benefits all 12 months	47.0	53.0	29.1	24.0
Received SNAP <sup>1</sup> benefits 1 to 11 months	39.3	60.7	32.6	28.0
Did not receive SNAP <sup>1</sup> benefits previous 12 months	69.5	30.5	17.1	13.4
Income less than 185 percent of poverty line; school-age children in household:				
Received free or reduced-price school lunch previous 30 days	50.6	49.4	31.1	18.3
Did not receive free or reduced-price school lunch previous 30 days	68.8	31.2	19.8	11.4
Income less than 185 percent of poverty line; children under age 5 in household:				
Received WIC previous 30 days	54.3	45.7	30.7	15.0
Did not receive WIC previous 30 days	61.2	38.8	27.7	11.1
Income less than 185 percent of poverty line:				
Received emergency food from food pantry previous 12 months	30.2	69.8	31.7	38.1
Did not receive emergency food from food pantry previous 12 months	71.3	28.7	17.5	11.2
Ate meal at emergency kitchen previous 12 months	25.9	74.1	24.4	49.7
Did not eat meal at emergency kitchen previous 12 months	67.0	33.0	19.1	13.9

<sup>1</sup>SNAP (Supplemental Nutrition Assistance Program) is the new name for the Food Stamp Program, effective as of October 2008.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

A possible complicating factor in the preceding analysis is that food insecurity was measured over a 12-month period. An episode of food insecurity may have occurred at a different time during the year than the use of a specific food and nutrition assistance program. A similar analysis using a 30-day measure of food insecurity largely overcomes this potential problem because measured food insecurity and reported use of food and nutrition assistance programs are more likely to refer to contemporaneous conditions when both are referenced to the previous 30 days. That analysis (see appendix D and table D-2) found associations between prevalence rates of food insecurity and the use of food and nutrition assistance programs that were similar to those in table 12, although 30-day prevalence rates were somewhat lower than the corresponding 12-month rates.

Households that received food and nutrition assistance—except for WIC—also spent less for food than nonrecipient households (table 13).<sup>28</sup> Typical (median) food expenditures of households that received SNAP benefits were 85 percent of the cost of the Thrifty Food Plan.<sup>29</sup> The corresponding statistics were 78 percent for households with children who received free or reduced-price school lunches, and 82 percent for households that received emergency food from food pantries. Typical food expenditures for nonparticipating households in the eligible income ranges for SNAP and free and reduced-price school lunches were higher than those of participating households. Food spending in WIC households, however, did not differ significantly from that of non-WIC households with children under age 5 and in the same income range.

<sup>28</sup>Food purchased with SNAP benefits is included in household food spending as calculated here. However, the value of school lunches and food obtained with WIC vouchers is not included. Food from these sources supplemented the food purchased by many of these households.

<sup>29</sup>The maximum SNAP benefit for households is approximately equal to the cost of the Thrifty Food Plan. About 30 percent of the SNAP caseload receives the maximum benefit. Households with countable income receive less.

Table 13  
**Weekly household food spending relative to the cost of the Thrifty Food Plan (TFP) by participation in selected Federal and community food assistance programs, 2008**

Category	Median weekly food spending relative to cost of the TFP
	<i>Ratio</i>
Income less than 130 percent of poverty line:	
Received SNAP <sup>1</sup> benefits previous 30 days	0.85
Did not receive SNAP <sup>1</sup> benefits previous 30 days	.90
Income less than 185 percent of poverty line; school-age children in household:	
Received free or reduced-price school lunch previous 30 days	.78
Did not receive free or reduced-price school lunch previous 30 days	.85
Income less than 185 percent of poverty line; children under age 5 in household:	
Received WIC previous 30 days	.81
Did not receive WIC previous 30 days	.82
Income less than 185 percent of poverty line:	
Received emergency food from food pantry previous 12 months	.82
Did not receive emergency food from food pantry previous 12 months	.91

<sup>1</sup>SNAP (Supplemental Nutrition Assistance Program) is the new name for the Food Stamp Program, effective as of October 2008.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.



## Participation in Federal Food and Nutrition Assistance Programs by Food-Insecure Households

Fifty-five percent of food-insecure households received assistance from one or more of the three largest Federal food and nutrition assistance programs during the month prior to the December 2008 food security survey (table 14). SNAP reached 33.7 percent, the National School Lunch Program 32.5 percent, and WIC 14.0 percent.<sup>30</sup> Just over half of households classified as having very low food security participated in one or more of the three largest Federal food and nutrition assistance programs, and the largest share of these (34.4 percent) participated in SNAP.<sup>31</sup>

### Use of Food Pantries and Emergency Kitchens

Some 4.8 million households (4.1 percent of all households) obtained emergency food from food pantries one or more times during the 12-month period ending in December 2008 (table 15). A smaller number—623,000 households (0.5 percent)—had members who ate one or more meals at an emergency kitchen. (See box, p. 28, for descriptions of these facilities.) Households that obtained food from food pantries included 8.8 million adults and 4.5 million children. The percentage of households that used food pantries was up from 3.36 percent in 2007, and the number of households that used food pantries was 22 percent higher in 2008 than in 2007. Of the households that reported having obtained food from a food pantry in the last 12 months, 26 percent reported that this had occurred in almost every month, 28 percent reported that it had occurred in “some months, but not every month,” and the remaining 46 percent reported that it had occurred in only 1 or 2 months (analysis not shown).

### Use of Food Pantries and Emergency Kitchens, by Food Security Status

Use of food pantries and emergency kitchens was strongly associated with food insecurity. Food-insecure households were 13 times as likely as food-secure households to have obtained food from a food pantry, and 14 times as likely as food-secure households to have eaten a meal at an emergency kitchen (table 15). Furthermore, among food-insecure households, those with

<sup>30</sup>These statistics may be biased downward somewhat. It is known from comparisons between household survey data and administrative records that food program participation is underreported by household survey respondents, including those in the CPS. This is probably true for food-insecure households as well, although the extent of underreporting by these households is not known. Statistics are based on the subsample of households with annual incomes below 185 percent of the poverty line. Not all these households were eligible for certain of the programs. (For example, those without pregnant women or children and with incomes above 130 percent of poverty would not have been eligible for any of the programs.)

<sup>31</sup>The statistics in table 14 were also calculated for households that were food insecure during the 30-day period prior to the survey. In principle, that analysis is preferable because food security status and use of programs are more certainly contemporaneous than when food insecurity is assessed over a 12-month period. However, the results differed only slightly from those in table 14 and are not presented separately.

Table 14

#### Participation of food-insecure households in selected Federal food assistance programs, 2008

Program	Share of food-insecure households that participated in the program during the previous 30 days <sup>1</sup>	Share of households with very low food security that participated in the program during the previous 30 days <sup>1</sup>
<i>Percent</i>		
SNAP <sup>2</sup>	33.7	34.4
Free or reduced-price school lunch	32.5	27.9
WIC	14.0	11.1
Any of the three programs	55.0	51.8
None of the three programs	45.0	48.2

<sup>1</sup>Analysis is restricted to households with annual incomes less than 185 percent of the poverty line because most households with incomes above that range were not asked whether they participated in food assistance programs.

<sup>2</sup>SNAP (Supplemental Nutrition Assistance Program) is the new name for the Food Stamp Program, effective as of October 2008.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

Table 15

**Use of food pantries and emergency kitchens, 2008**

Category	Pantries			Kitchens		
	Total <sup>1</sup>	Users	Percent	Total <sup>1</sup>	Users	Percent
	1,000	1,000		1,000	1,000	
All households	117,113	4,773	4.1	117,151	623	0.53
All persons in households	297,984	13,304	4.5	298,249	1,339	.45
Adults in households	224,468	8,755	3.9	224,562	944	.42
Children in households	73,516	4,549	6.2	73,686	395	.54
Households by food security status:						
Food-secure households	100,155	1,457	1.5	100,158	183	.18
Food-insecure households	16,898	3,313	19.6	16,927	440	2.60
Households with low food security	10,274	1,549	15.1	10,295	141	1.37
Households with very low food security	6,624	1,764	26.6	6,631	299	4.51

<sup>1</sup>Totals exclude households that did not answer the question about food pantries or emergency kitchens. Totals in the bottom section also exclude households that did not answer any of the questions in the food security scale.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

very low food security were much more likely to have used a food pantry or emergency kitchen than were those with low food security.

A large majority (80.4 percent) of food-insecure households, and even of households with very low food security (73.4 percent), did not use a food pantry at any time during the previous year. In some cases, this was because there was no food pantry available or because the household believed there was none available. Among food-insecure households that did not use a food pantry, 30 percent reported that there was no such resource in their community, and an additional 18 percent said they did not know if there was one (statistics not tabulated). Still, 68 percent of food-insecure households that knew there was a food pantry in their community did not make use of it.

About 31 percent of households that used food pantries were classified as food secure. However, over half (55 percent; analysis not shown) of these food-secure households reported at least some concerns or difficulties in obtaining enough food by responding positively to 1 or 2 of the 18 indicators of food insecurity, indicating marginal food security. (A household must report occurrence of at least three of the indicators to be classified as food insecure; see appendix A.) Households with marginal food security (those that reported one or two indicators of food insecurity) were about ten times as likely to have used a food pantry and five times as likely to have eaten at an emergency kitchen as were households with high food security (those that reported no indicators of food insecurity).

### Use of Food Pantries, by Selected Household Characteristics

The use of food pantries varied considerably by household structure and by race and ethnicity (table 16). Households with children were more likely than those without children to use food pantries (5.6 percent compared with 3.3 percent). Food-pantry use was especially high among households with children headed by single women (11.5 percent), while use by married couples with children (3.3 percent) and households with elderly members

Table 16

**Use of food pantries by selected household characteristics, 2008**

Category	Total <sup>1</sup>	Pantry users	
	1,000	1,000	Percent
All households	117,113	4,773	4.1
Household composition:			
With children < 18 yrs	39,405	2,219	5.6
At least one child < 6 yrs	17,360	1,103	6.4
Married-couple families	26,569	875	3.3
Female head, no spouse	9,520	1,097	11.5
Male head, no spouse	2,747	190	6.9
Other household with child <sup>2</sup>	569	57	10.0
With no children < 18 yrs	77,708	2,554	3.3
More than one adult	45,675	1,156	2.5
Women living alone	17,875	882	4.9
Men living alone	14,159	516	3.6
With elderly	28,122	820	2.9
Elderly living alone	11,112	408	3.7
Race/ethnicity of households:			
White non-Hispanic	82,779	2,550	3.1
Black non-Hispanic	14,300	1,163	8.1
Hispanic <sup>3</sup>	13,379	763	5.7
Other	6,655	297	4.5
Household income-to-poverty ratio:			
Under 1.00	12,988	2,225	17.1
Under 1.30	20,206	2,999	14.8
Under 1.85	29,450	3,587	12.2
1.85 and over	70,317	830	1.2
Income unknown	17,347	357	2.1
Area of residence: <sup>4</sup>			
Inside metropolitan area	97,781	3,855	3.9
In principal cities <sup>5</sup>	32,589	1,579	4.8
Not in principal cities	48,088	1,450	3.0
Outside metropolitan area	19,332	918	4.7
Census geographic region:			
Northeast	21,282	694	3.3
Midwest	26,277	1,229	4.7
South	43,364	1,731	4.0
West	26,190	1,119	4.3

<sup>1</sup>Totals exclude households that did not answer the question about getting food from a food pantry. They represented 0.7 percent of all households.

<sup>2</sup>Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

<sup>3</sup>Hispanics may be of any race.

<sup>4</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation. Food pantry statistics by area of residence are comparable with those for 2004 and later years but are not precisely comparable with those of earlier years.

<sup>5</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

(2.9 percent) was lower than the national average. Use of food pantries was higher among Black (8.1 percent) and Hispanic households (5.7 percent) than among non-Hispanic Whites (3.1 percent), consistent with the higher rates of poverty and food insecurity of these minorities. In spite of their lower use rate, non-Hispanic Whites comprised a majority (53 percent) of food-pantry users because of their larger share in the general population.

Seventeen percent of households with incomes below the poverty line received food from food pantries, compared with 1.2 percent of households with incomes above 185 percent of the poverty line.<sup>32</sup> Among households with incomes above the poverty line but below 185 percent of the poverty line, about 1.4 million (3.6 million less 2.2 million) used food pantries in 2008, comprising 29 percent of all households using food pantries and 8.3 percent of households in that income range.

Use of food pantries was higher in principal cities of metropolitan areas (4.8 percent) and in nonmetropolitan areas (4.7 percent) than in metropolitan areas outside of central cities (3.0 percent). The percentage of households that used food pantries was smaller in the Northeast than in any other region, and smaller in the South than in the Midwest.

## Combined Use of Federal and Community Food and Nutrition Assistance

Both Federal and community food and nutrition assistance programs are important resources for low-income households. To design and manage these programs so that they function together effectively as a nutrition safety net, it is important to know how they complement and supplement each other. The extent to which households that participate in Federal food and nutrition assistance programs also receive assistance from community food assistance programs provides information about these relationships.

Just over one in four (27.5 percent) of the households that received SNAP benefits in the month prior to the survey also obtained food from a food pantry at some time during the year (table 17). Those households comprised 46.9 percent of all households that reported using a food pantry. Food pantry

<sup>32</sup>Use of food pantries by households with incomes higher than 1.85 times the poverty line was probably slightly underreported by the CPS food security survey. Households in this income range were not asked the question about using a food pantry unless they had indicated some level of food stress on at least one of two preliminary screener questions (listed in footnote 6). However, analysis of the use of food pantries by households at different income levels below 1.85 times the poverty line (and thus not affected by the screen) indicates that the screening had only a small effect on the estimate of food pantry use by households with incomes above that range.

Table 17

### Combined use of Federal and community food assistance programs by low-income households,<sup>1</sup> 2008

Category	Share of category that obtained food from food pantry	Share of food pantry users in category	Share of category that ate meal at emergency kitchen	Share of emergency kitchen users in category
	<i>Percent</i>			
Received SNAP <sup>2</sup> benefits previous 30 days	27.5	46.9	3.5	42.4
Received free or reduced-price school lunch previous 30 days	18.2	32.7	1.7	22.4
Received WIC previous 30 days	19.1	15.8	1.7	9.9
Participated in one or more of the three Federal programs	21.0	64.4	2.6	56.4
Did not participate in any of the three Federal programs	6.9	35.6	1.2	43.6

<sup>1</sup>Analysis is restricted to households with annual incomes less than 185 percent of the poverty line because most households with incomes above that range were not asked whether they participated in food assistance programs.

<sup>2</sup>SNAP (Supplemental Nutrition Assistance Program) is the new name for the Food Stamp Program, effective as of October 2008.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

use was somewhat less common among households with members who participated in the National School Lunch Program (18.2 percent) and WIC (19.1 percent). A majority of food-pantry users (64.4 percent) received food from at least one of the three largest Federal food and nutrition assistance programs. The remainder of food-pantry users (35.6 percent) did not participate in any of these Federal programs.

Only small proportions (from 1.7 to 3.5 percent) of households that received assistance from the three largest Federal food and nutrition assistance programs reported that any household member had eaten a meal at an emergency kitchen during the 12 months prior to the survey. Nevertheless, these households comprised a sizeable share of emergency kitchen users in the housed population. Among households with incomes less than 185 percent of the poverty line who reported that someone in the household ate one or more meals at an emergency kitchen, 42.4 percent received SNAP benefits, 22.4 percent received free or reduced-cost meals in the National School Lunch Program, 9.9 percent received WIC benefits, and 56.4 percent participated in at least one of these three programs. These statistics probably overstate the actual shares of emergency kitchen users who participate in the Federal food and nutrition assistance programs, however. Those most likely to be underrepresented in the food security survey—the homeless or tenuously housed—are also less likely than other income-eligible groups to participate in those programs.

## References

- Anderson, S.A. (ed.). 1990. "Core Indicators of Nutritional State for Difficult-To-Sample Populations," *Journal of Nutrition* 120(11S):1557-1600, Report by the Life Sciences Research Office, Federation of American Societies for Experimental Biology, for the American Institute of Nutrition.
- Andrews, Margaret, Gary Bickel, and Steven Carlson. 1998. "Household Food Security in the United States in 1995: Results From the Food Security Measurement Project," *Family Economics and Nutrition Review* 11(1&2):17-28, USDA, Center for Nutrition Policy and Promotion.
- Andrews, Margaret, Mark Nord, Gary Bickel, and Steven Carlson. 2000. *Household Food Security in the United States, 1999*. FANRR-8, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr8/](http://www.ers.usda.gov/publications/fanrr8/).
- Andrews, Margaret, and Mark Prell. 2001. *Second Food Security Measurement and Research Conference: Volume I: Proceedings*, FANRR 11-1, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr11-1/](http://www.ers.usda.gov/publications/fanrr11-1/).
- Andrews, Margaret, and Mark Prell. 2001. *Second Food Security Measurement and Research Conference: Volume II: Papers*, FANRR 11-2, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr11-2/](http://www.ers.usda.gov/publications/fanrr11-2/).
- Bickel, G., M. Andrews, and S. Carlson. 1998. "The Magnitude of Hunger: A New National Measure of Food Security," *Topics in Clinical Nutrition* 13(4):15-30.
- Bickel, G., S. Carlson, and M. Nord. 1999. *Household Food Security in the United States 1995-1998: Advance Report*, USDA, Food and Nutrition Service. Available at: <http://www.fns.usda.gov/oane/menu/published/foodsecurity/foodsec98.pdf/>.
- Bickel, G., M. Nord, C. Price, W.L. Hamilton, and J.T. Cook. 2000. *Guide to Measuring Household Food Security, Revised 2000*, USDA, Food and Nutrition Service. Available at: [www.fns.usda.gov/fsec/files/fsguide.pdf/](http://www.fns.usda.gov/fsec/files/fsguide.pdf/).
- Briefel, R., J. Jacobson, N. Clusen, T. Zavitsky, M. Satake, B. Dawsen, and R. Cohen. 2003. *The Emergency Food Assistance System—Findings From the Client Survey*, E-FAN-03-007, prepared by Mathematica Policy Research, Inc., for USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/efan03007/](http://www.ers.usda.gov/publications/efan03007/).
- Carlson, S.J., M.S. Andrews, and G.W. Bickel. 1999. "Measuring Food Insecurity and Hunger in the United States: Development of a National Benchmark Measure and Prevalence Estimates," *The Journal of Nutrition* 129:510S-516S.



- Citro, Constance F., and Robert T. Michael (eds.). 1995. *Measuring Poverty: A New Approach*, Washington, DC: The National Academies Press.
- Cohen, Barbara, Mark Nord, Robert Lerner, James Parry, and Kenneth Yang. 2002a. *Household Food Security in the United States, 1998 and 1999: Technical Report*, E-FAN-02-010, prepared by IQ Solutions and USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/efan02010/](http://www.ers.usda.gov/publications/efan02010/).
- Cohen, Barbara, James Parry, and Kenneth Yang. 2002b. *Household Food Security in the United States, 1998 and 1999: Detailed Statistical Report*, E-FAN-02-011, prepared by IQ Solutions and USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/efan02011/](http://www.ers.usda.gov/publications/efan02011/).
- Gundersen, Craig, and Joseph Gruber. 2001. "The Dynamic Determinants of Food Insecurity," Margaret Andrews and Mark Prell (eds.), *Second Food Security Measurement and Research Conference, Volume II: Papers*, FANRR-11-2, pp. 92-110, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr11-2/](http://www.ers.usda.gov/publications/fanrr11-2/).
- Gundersen, Craig, and Victor Oliveira. 2001. "The Food Stamp Program and Food Insufficiency," *American Journal of Agricultural Economics* 83(4):875-87.
- Hamilton, W.L., J.T. Cook, W.W. Thompson, L.F. Buron, E.A. Frongillo, Jr., C.M. Olson, and C.A. Wehler. 1997a. *Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project*, prepared for USDA, Food and Consumer Service. Available at: <http://www.fns.usda.gov/oane/menu/published/foodsecurity/sumrpt.pdf/>.
- Hamilton, W.L., J.T. Cook, W.W. Thompson, L.F. Buron, E.A. Frongillo, Jr., C.M. Olson, and C.A. Wehler. 1997b. *Household Food Security in the United States in 1995: Technical Report*, prepared for USDA, Food and Consumer Service. Available at: [www.fns.usda.gov/oane/menu/published/foodsecurity/tech\\_rpt.pdf/](http://www.fns.usda.gov/oane/menu/published/foodsecurity/tech_rpt.pdf/).
- Kerr, Richard L., Betty B. Peterkin, Andrea J. Blum, and Linda E. Cleveland. 1984. "USDA 1983 Thrifty Food Plan," *Family Economics Review* No. 1.
- National Research Council. 2006. *Food Insecurity and Hunger in the United States: An Assessment of the Measure*, Gooloo S. Wunderlich and Janet L. Norwood (eds.), Committee on National Statistics, Panel to Review the U.S. Department of Agriculture's Measurement of Food Insecurity and Hunger, Washington, DC: The National Academies Press.
- Nelson, K., M. Brown, and N. Lurie. 1998. "Hunger in an Adult Patient Population," *Journal of the American Medical Association* 279:1211-14.
- Nord, Mark. 2002. *A 30-Day Food Security Scale for Current Population Survey Food Security Supplement Data*, E-FAN-02-015, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/efan02015/](http://www.ers.usda.gov/publications/efan02015/).

- Nord, Mark. 2009. *Food Insecurity in Households with Children: Prevalence, Severity, and Household Characteristics*, EIB-56, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/eib56/](http://www.ers.usda.gov/publications/eib56/).
- Nord, Mark, Margaret Andrews, and Steven Carlson. 2002a. *Household Food Security in the United States, 2001*, FANRR-29, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr29/](http://www.ers.usda.gov/publications/fanrr29/).
- Nord, Mark, Margaret Andrews, and Steven Carlson. 2003. *Household Food Security in the United States, 2002*, FANRR-35, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr35/](http://www.ers.usda.gov/publications/fanrr35/).
- Nord, Mark, Margaret Andrews, and Steven Carlson. 2004. *Household Food Security in the United States, 2003*, FANRR-42, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr42/](http://www.ers.usda.gov/publications/fanrr42/).
- Nord, Mark, Margaret Andrews, and Steven Carlson. 2005. *Household Food Security in the United States, 2004*, ERR-11, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/err11/](http://www.ers.usda.gov/publications/err11/).
- Nord, Mark, Margaret Andrews, and Steven Carlson. 2006. *Household Food Security in the United States, 2005*, ERR-29, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/err29/](http://www.ers.usda.gov/publications/err29/).
- Nord, Mark, Margaret Andrews, and Steven Carlson. 2007. *Household Food Security in the United States, 2006*, ERR-49, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/err49/](http://www.ers.usda.gov/publications/err49/).
- Nord, Mark, Margaret Andrews, and Steven Carlson. 2008. *Household Food Security in the United States, 2007*, ERR-66, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/err66/](http://www.ers.usda.gov/publications/err66/).
- Nord, Mark, Margaret Andrews, and F. Joshua Winicki. 2000. "Frequency and Duration of Food Insecurity and Hunger in U.S. Households," paper presented at the Fourth International Conference on Dietary Assessment Methods, Tucson, AZ, Sept. 17-20, 2000.
- Nord, Mark, and Gary Bickel. 2002. *Measuring Children's Food Security in U.S. Households, 1995-99*, FANRR- 25, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr25/](http://www.ers.usda.gov/publications/fanrr25/).
- Nord, Mark, and C. Philip Brent. 2002. *Food Insecurity in Higher Income Households*, E-FAN-02-016, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/efan02016/](http://www.ers.usda.gov/publications/efan02016/).
- Nord, Mark, and Heather Hopwood. 2007. "Recent Advances Provide Improved Tools for Measuring Children's Food Security," *Journal of Nutrition* 137: 533-536.
- Nord, M., K. Jemison, and G.W. Bickel. 1999. *Prevalence of Food Insecurity and Hunger by State, 1996-1998*, FANRR-2, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr2/](http://www.ers.usda.gov/publications/fanrr2/).

- Nord, Mark, Nader Kabbani, Laura Tiehen, Margaret Andrews, Gary Bickel, and Steven Carlson. 2002b. *Household Food Security in the United States, 2000*, FANRR-21, USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr21/](http://www.ers.usda.gov/publications/fanrr21/).
- Nord, Mark, and Linda S. Kantor. 2006. "Seasonal Variation in Food Insecurity is Associated with Heating and Cooling Costs among Low-Income Elderly Americans," *Journal of Nutrition* 136: 2939-2944.
- Nord, Mark, and Kathleen Romig. 2006. "Hunger in the Summer: Seasonal Food Insecurity and the National School Lunch and Summer Food Service Programs," *Journal of Children and Poverty* Vol. 12, No. 2, pp. 141-158.
- Ohls, James, Larry Radbill, and Allen Schirm. 2001. *Household Food Security in the United States, 1995-1997: Technical Issues and Statistical Report*, prepared by Mathematica Policy Research, Inc., for USDA, Food and Nutrition Service. Available at: [www.fns.usda.gov/oane/MENU/Published/FoodSecurity/FoodSecurityTech.pdf/](http://www.fns.usda.gov/oane/MENU/Published/FoodSecurity/FoodSecurityTech.pdf/).
- Ohls, James, Fazana Saleem-Ismail, Rhoda Cohen, and Brenda Cox. 2002. *The Emergency Food Assistance System Study—Findings from the Provider Survey, Volume II: Final Report*, FANRR-16-2, prepared by Mathematica Policy Research, Inc., for USDA, Economic Research Service. Available at: [www.ers.usda.gov/publications/fanrr16-2/](http://www.ers.usda.gov/publications/fanrr16-2/).
- Oliveira, Victor, and Donald Rose. 1996. *Food Expenditure Estimates From the 1995 CPS Food Security Supplement: How Do They Compare with the Consumer Expenditure Survey?* Staff Report No. AGES9617, USDA, Economic Research Service.
- Olson, C.M. (ed.). 1999. Symposium: Advances in Measuring Food Insecurity and Hunger in the U.S. Sponsored by the American Society for Nutritional Sciences as part of Experimental Biology 98, Apr. 1998, San Francisco, CA, published as supplement to *Journal of Nutrition* 129:504S-528S. Available at: [www.nutrition.org/content/vol129/issue2/](http://www.nutrition.org/content/vol129/issue2/).
- Price, C., W.L. Hamilton, and J.T. Cook. 1997. *Household Food Security in the United States in 1995: Guide to Implementing the Core Food Security Module*, report prepared for USDA, Food and Consumer Service.
- Radimer, Kathy L., and Mark Nord. 2005. "Associations of Household, Adult, and Child Food Security with Health Conditions: National Health and Nutrition Examination Survey (NHANES) 1999-2002," presentation at the Experimental Biology annual research conference San Diego, CA, March 31-April 5, 2005.
- U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. 1999. *The Thrifty Food Plan, 1999*.
- U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. 2007. *The Thrifty Food Plan, 2006*, CNPP-19, Alexandria, VA, Center for Nutrition Policy and Promotion, U.S. Department of Agriculture.

Available at: [www.cnpp.usda.gov/Publications/FoodPlans/MiscPubs/TFP2006Report.pdf/](http://www.cnpp.usda.gov/Publications/FoodPlans/MiscPubs/TFP2006Report.pdf/).

U.S. Department of Agriculture, Food and Consumer Service, Office of Analysis and Evaluation. 1995. *Food Security Measurement and Research Conference: Papers and Proceedings*.

Wilde, Parke, and Mark Nord. 2005. "The Effect of Food Stamps on Food Security: A Panel Data Approach," *Review of Agricultural Economics* 27(3):425-432.

Wilde, Parke E., and Jerusha N. Peterman. 2006. "Individual Weight Change is Associated with Household Food Security Status," *Journal of Nutrition* 136:1395-1400.

Winicki, Joshua, and Kyle Jemison. 2003. "Food Insecurity and Hunger in the Kindergarten Classroom: Its Effect on Learning and Growth," *Contemporary Economic Policy* 21(2): 145-156.

Wright, B.D. 1977. *Solving Measurement Problems with the Rasch Model*. Mesa Psychometric Laboratory, The University of Chicago, College of Education, Chicago, IL. Available at: [www.rasch.org/memos.htm/](http://www.rasch.org/memos.htm/).

Wright, B.D. 1983. *Fundamental Measurement in Social Science and Education*. Mesa Psychometric Laboratory, The University of Chicago, College of Education, Chicago, IL. Available at: [www.rasch.org/memos.htm/](http://www.rasch.org/memos.htm/).

## Appendix A—Household Responses to Questions in the Food Security Scale

The 18 questions used for the food security measure ask about conditions, experiences, and behaviors that range widely in severity. Those indicating less severe food insecurity are observed with greater frequency, and frequency declines as severity increases. For example, the least severe condition, *We worried whether our food would run out before we got money to buy more*, was reported by 19.7 percent of households in 2008 (table A-1). *Adults cut the size of meals or skipped meals because there wasn't enough money for food* was reported by 9.2 percent of households. The most severe condition, *Children did not eat for a whole day because there wasn't enough money for food*, was reported by 0.1 percent of households with children. (See box, p. 3, for the complete wording of these questions.)

The two least severe questions refer to uncertainty about having enough food and the experience of running out of food. The remaining 16 items indicate reduced quality, variety, or desirability of diets and increasingly severe disruptions of normal eating patterns and reductions in food intake. Three or more affirmative responses are required for a household to be classified

Table A-1  
Responses to items in the food security scale, 2005-08<sup>1</sup>

Scale item <sup>2</sup>	Households affirming item <sup>3</sup>			
	2005	2006	2007	2008
	Percent			
Household items:				
Worried food would run out before (I/we) got money to buy more	15.6	15.1	15.4	19.7
Food bought didn't last and (I/we) didn't have money to get more	12.2	12.1	12.4	15.3
Couldn't afford to eat balanced meals	10.7	10.9	11.3	14.8
Adult items:				
Adult(s) cut size of meals or skipped meals	6.2	6.3	6.5	9.2
Respondent ate less than felt he/she should	6.5	6.3	6.5	9.0
Adult(s) cut size or skipped meals in 3 or more months	4.6	4.5	5.1	7.1
Respondent hungry but didn't eat because couldn't afford	2.9	3.5	3.3	4.6
Respondent lost weight	2.0	2.1	2.1	3.0
Adult(s) did not eat for whole day	1.3	1.4	1.3	1.6
Adult(s) did not eat for whole day in 3 or more months	.9	.9	.9	1.1
Child items:				
Relied on few kinds of low-cost food to feed child(ren)	14.7	15.0	14.3	17.5
Couldn't feed child(ren) balanced meals	8.5	8.7	8.2	11.3
Child(ren) were not eating enough	3.7	3.9	4.4	5.9
Cut size of child(ren)'s meals	1.3	1.2	1.9	2.6
Child(ren) were hungry	.8	.8	1.2	1.6
Child(ren) skipped meals	.6	.5	.7	1.0
Child(ren) skipped meals in 3 or more months	.4	.4	.6	.7
Child(ren) did not eat for whole day	.1	.1	.2	.1

<sup>1</sup>Survey responses weighted to population totals.

<sup>2</sup>The full wording of each question includes explicit reference to resource limitation, e.g., "...because (I was/we were) running out of money to buy food," or "...because there wasn't enough money for food."

<sup>3</sup>Households not responding to an item are omitted from the calculations. Households without children are omitted from the calculation of child-referenced items.

Source: Calculated by ERS using data from the December 2005, December 2006, December 2007, and December 2008 Current Population Survey Food Security Supplements.

as food insecure. Thus, all households in that category affirmed at least one item indicating reduced diet quality or disruption of normal eating patterns or reduction in food intake, and most food-insecure households reported multiple indicators of these conditions (table A-2).

A large majority of households (67 percent of households with children and 81 percent of those without children) reported no problems or concerns in meeting their food needs. Households that reported only one or two indications of food insecurity (12 percent of households with children and 8 percent of households without children) are also classified as food secure. Most of these households affirmed one or both of the first two items, indicating uncertainty about having

Table A-2

**Percentage of households, by food security raw score, 2008**

<i>Panel A: Households with children</i>			
Raw score (number of food-insecure conditions reported)	Percent of households <sup>1</sup>	Cumulative percent of households <sup>1</sup>	Food security status
0	66.78	66.78	Food secure (79.00 percent)
1	7.13	73.91	
2	5.10	79.00	
3	4.26	83.27	Low food security (14.41 percent)
4	3.01	86.28	
5	2.75	89.03	
6	2.25	91.28	
7	2.13	93.41	
8	1.80	95.21	Very low food security (6.59 percent)
9	1.27	96.48	
10	1.15	97.63	
11	.72	98.65	
12	.50	98.85	
13	.36	99.22	
14	.35	99.56	
15	.25	99.81	
16	.06	99.88	
17	.08	99.96	
18	.04	100.00	
<i>Panel B: Households with no children</i>			
Raw score (number of food-insecure conditions reported)	Percent of households <sup>1</sup>	Cumulative percent of households <sup>1</sup>	Food security status
0	80.86	80.86	Food secure (88.68 percent)
1	4.38	85.25	
2	3.43	88.68	
3	3.10	91.78	Low food security (6.05 percent)
4	1.49	93.26	
5	1.46	94.73	
6	1.74	96.46	Very low food security (5.27 percent)
7	1.48	97.94	
8	1.06	99.01	
9	.43	99.44	
10	.56	100.00	

<sup>1</sup>Survey responses weighted to population totals.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.



enough food or about exhausting their food supply, but did not indicate actual disruptions of normal eating patterns or reductions in food intake. Although these households are classified as food secure, the food security of some of them may have been tenuous at times, especially in the sense that they lacked “assured ability to acquire acceptable foods in socially acceptable ways,” a condition that the Life Sciences Research Office includes in its definition of food insecurity (Anderson, 1990, p. 1,598).<sup>1</sup> Research examining health and children’s development in these marginally food-secure households is ongoing. Findings to date indicate that outcomes are either intermediate between those in highly food-secure and food-insecure households or more closely resemble those in food-insecure households (Radimer and Nord, 2005; Winicki and Jemison, 2003; Wilde and Peterman, 2006).

## Frequency of Occurrence of Behaviors, Experiences, and Conditions That Indicate Food Insecurity

Most of the questions used to calculate the food security scale also elicit information about how often the food-insecure behavior, experience, or condition occurred. The food security scale does not take all of this frequency-of-occurrence information into account, but analysis of these responses can provide insight into the frequency and duration of food insecurity. Frequency-of-occurrence information is collected in the CPS Food Security Supplements using two different methods (see box, “Questions Used To Assess the Food Security of Households in the CPS Food Security Survey,” p. 3):

- **Method 1:** A condition is described, and the respondent is asked whether this was often, sometimes, or never true for his or her household during the past 12 months.
- **Method 2:** Respondents who answer “yes” to a yes/no question are asked, “How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?”

Table A-3 presents responses to each food security question broken down by reported frequency of occurrence for all households interviewed in the December 2008 survey. Questions using Method 1 are presented in the top panel of the table and those using Method 2 are presented in the bottom panel. Most households that responded affirmatively to Method 1 questions reported that the behavior, experience, or condition occurred “sometimes,” while 17 to 26 percent (depending on the specific question), reported that it occurred “often.” For example, 5.2 percent of households reported that in the past 12 months they had often worried whether their food would run out before they got money to buy more, and 14.5 percent reported that this had occurred sometimes (but not often). Thus, a total of 19.7 percent of households reported that this had occurred at some time during the past 12 months, and, of those, 26 percent reported that it had occurred often. (Note that calculations across some rows in table A-3 differ from tabled values because of rounding in each column.)

In response to Method 2 questions, 28 to 36 percent of households that responded “yes” to the base question reported that the behavior, experience, or condition occurred “in almost every month;” 36 to 44 percent reported

<sup>1</sup>The Life Sciences Research Office (LSRO) is a nonprofit organization based in Bethesda, MD. Concepts and definitions of food security and related conditions developed by LSRO for the American Institute of Nutrition (Anderson, 1990) provided key parts of the theoretical underpinnings of the household food security measure.

Table A-3

**Frequency of occurrence of behaviors, experiences, and conditions indicating food insecurity reported by all U.S. households, 2008<sup>1</sup>**

Condition <sup>2</sup>	Ever during the year	Frequency of occurrence			
		Often	Sometimes	Often	Sometimes
		— Percent of all households —		— Percent of — “ever during the year”	
Worried food would run out before (I/we) got money to buy more	19.7	5.2	14.5	26	74
Food bought didn't last and (I/we) didn't have money to get more	15.3	3.4	11.9	22	78
Couldn't afford to eat balanced meals	14.8	3.8	11.0	26	74
Relied on few kinds of low-cost food to feed child(ren)	17.5	4.1	13.4	23	77
Couldn't feed child(ren) balanced meals	11.3	2.2	9.1	19	81
Child(ren) were not eating enough	5.9	1.0	4.9	17	83

Condition <sup>2</sup>	Frequency of occurrence						
	Ever during the year	Almost every month	Some months but not every month	In only 1 or 2 months	Some months		
					Almost every month	but not every month	In only 1 or 2 months
— Percent of all households —				— Percent of — “ever during the year”			
Adult(s) cut size of meals or skipped meals	9.2	3.1	4.0	2.1	34	43	23
Respondent ate less than felt he/she should	8.9	2.8	4.0	2.2	31	44	25
Respondent hungry but didn't eat because couldn't afford	4.6	1.6	1.9	1.1	36	41	23
Respondent lost weight	3.0	NA	NA	NA	NA	NA	NA
Adult(s) did not eat for whole day	1.6	0.5	0.6	0.5	33	36	32
Cut size of child(ren)'s meals	2.6	0.7	1.2	0.7	28	46	27
Child(ren) were hungry	1.6	0.5	0.6	0.5	31	39	30
Child(ren) skipped meals	1.0	0.3	0.4	0.3	32	37	30
Child(ren) did not eat for whole day	0.1	NA	NA	NA	NA	NA	NA

NA = Frequency of occurrence information was not collected for these conditions.

<sup>1</sup>Survey responses weighted to population totals. Households not responding to an item or not responding to the followup question about frequency of occurrence are omitted from the calculation of percentages for that item. Households without children are omitted from the calculation of percentages for child-referenced items.

<sup>2</sup>The full wording of each question includes explicit reference to resource limitation, e.g., “...because (I was/we were) running out of money to buy food,” or “...because there wasn't enough money for food.”

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

that it occurred in “some months, but not every month,” and 23 to 32 percent reported that it occurred “in only 1 or 2 months.” For example, 9.2 percent of households reported that an adult cut the size of a meal or skipped a meal because there was not enough money for food. In response to the followup question asking how often this happened, 3.1 percent said that it happened in almost every month (i.e., 34 percent of those who responded “yes” to the base question), 4.0 percent said it happened in some months but not every month (43 percent of those who responded “yes” to the base question), and 2.1 percent said it happened in only 1 or 2 months (23 percent of those who responded “yes” to the base question).

Table A-4 presents the same frequency-of-occurrence response statistics for households classified as having very low food security. Almost all of these households responded affirmatively (either “often” or “sometimes”) to the first four questions—questions that are sensitive to less severe aspects of food insecurity—and 38 to 49 percent of those who responded affirmatively

Table A-4

**Frequency of occurrence of behaviors, experiences, and conditions indicating food insecurity reported by households with very low food security, 2008<sup>1</sup>**

Condition <sup>2</sup>	Ever during the year	Frequency of occurrence				
		Often	Sometimes	Often	Sometimes	
		— Percent of all households —			— Percent of — “ever during the year”	
Worried food would run out before (I/we) got money to buy more	98.1	49.3	48.7	50	50	
Food bought didn't last and (I/we) didn't have money to get more	96.0	39.5	56.4	41	59	
Couldn't afford to eat balanced meals	94.4	41.2	53.2	44	56	
Relied on few kinds of low-cost food to feed child(ren)	93.0	38.0	54.9	41	59	
Couldn't feed child(ren) balanced meals	82.8	24.6	58.1	30	70	
Child(ren) were not eating enough	60.3	13.4	46.9	22	78	

Condition <sup>2</sup>	Ever during the year	Frequency of occurrence					
		Almost every month	Some months but not every month	In only 1 or 2 months	Almost every month	Some months but not every month	In only 1 or 2 months
		— Percent of all households —			— Percent of — “ever during the year”		
Adult(s) cut size of meals or skipped meals	96.7	43.7	44.7	8.3	45	46	9
Respondent ate less than felt he/she should	93.4	40.4	41.5	11.4	43	44	12
Respondent hungry but didn't eat because couldn't afford	66.4	27.5	27.9	11.1	41	42	17
Respondent lost weight	47.2	NA	NA	NA	NA	NA	NA
Adult(s) did not eat for whole day	27.0	9.4	9.8	7.8	35	36	29
Cut size of child(ren)'s meals	32.4	10.9	14.6	7.0	34	45	22
Child(ren) were hungry	23.8	7.5	9.4	6.9	32	39	29
Child(ren) skipped meals	14.8	5.0	5.7	4.1	34	38	28
Child(ren) did not eat for whole day	2.2	NA	NA	NA	NA	NA	NA

NA = Frequency of occurrence information was not collected for these conditions.

<sup>1</sup>Survey responses weighted to population totals. Households not responding to an item or not responding to the followup question about frequency of occurrence are omitted from the calculation of percentages for that item. Households without children are omitted from the calculation of percentages for child-referenced items.

<sup>2</sup>The full wording of each question includes explicit reference to resource limitation, e.g., “...because (I was/we were) running out of money to buy food,” or “...because there wasn't enough money for food.”

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

reported that these conditions had occurred often during the past year. In response to Method 2 questions, 35 to 45 percent of households that affirmed adult-referenced questions and 32 to 35 percent of households that affirmed child-referenced questions reported that the conditions had occurred in “almost every month.”

### Monthly and Daily Occurrence of Food-Insecure Conditions

Respondents also reported whether the behaviors and experiences that indicate food insecurity had occurred during the 30 days prior to the survey. (Responses to these questions are used to assess the food security status of households during the 30-day period prior to the survey. Statistics based on this measure are reported in appendix D.) For seven of these behaviors and experiences, respondents also reported how many days the condition had occurred during that period. Responses to these questions are summarized in table A-5.

Table A-5

**Monthly and daily occurrence of behaviors, experiences, and conditions indicating food insecurity reported by all U.S. households, 2008<sup>1</sup>**

Condition <sup>2</sup>	For households reporting condition at any time during previous 30 days					Monthly average occurrence	Average daily prevalence	
	Ever during previous 30 days	Number of days out of previous 30 days			Days <sup>3</sup>			Percent <sup>3</sup>
		1- 7 days	8-14 days	15-30 days				
Worried food would run out before (I/we) got money to buy more	10.03	NA	NA	NA	NA	NA		
Food bought didn't last and (I/we) didn't have money to get more	8.62	NA	NA	NA	NA	NA		
Couldn't afford to eat balanced meals	9.25	NA	NA	NA	NA	NA		
Relied on few kinds of low-cost food to feed child(ren)	10.25	NA	NA	NA	NA	NA		
Couldn't feed child(ren) balanced meals	6.91	NA	NA	NA	NA	NA		
Child(ren) were not eating enough	3.65	NA	NA	NA	NA	NA		
Adult(s) cut size of meals or skipped meals	6.52	65	15	20	8.3	1.81		
Respondent ate less than felt he/she should	5.92	55	17	28	10.3	2.04		
Respondent hungry but didn't eat because couldn't afford	3.24	58	14	28	9.6	1.04		
Respondent lost weight	2.13	NA	NA	NA	NA	NA		
Adult(s) did not eat for whole day	1.12	69	11	19	7.7	0.29		
Cut size of child(ren)'s meals	1.79	59	18	23	9.6	0.57		
Child(ren) were hungry	1.10	63	15	22	8.6	0.31		
Child(ren) skipped meals	0.66	68	17	15	7.8	0.17		
Child(ren) did not eat for whole day	0.11	NA	NA	NA	NA	NA		

NA = Number of days of occurrence was not collected for these conditions.

<sup>1</sup>Survey responses weighted to population totals. The 30-day and daily statistics refer to the 30-day period from mid-November to mid-December; the survey was conducted during the week of December 14-20, 2008.

<sup>2</sup>The full wording of each question includes explicit reference to resource limitation, e.g., "...because (I was/we were) running out of money to buy food," or "...because there wasn't enough money for food."

<sup>3</sup>Households without children are excluded from the denominator of child-referenced items.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

Most households that reported the occurrence of reduced food intake or being hungry during the 30 days prior to the survey reported that these conditions were of relatively short duration, although some households reported longer or more frequent spells. For example, of the 6.52 percent of households in which adults cut the size of meals or skipped meals during the previous 30 days because there wasn't enough money for food, 65 percent reported that this had occurred in 1 to 7 days, 15 percent reported that it had occurred in 8-14 days, and 20 percent reported that it had occurred in 15 days or more of the previous 30 days. On average, households reporting occurrence of this condition at any time in the previous 30 days reported that it occurred in 8.3 days. The daily occurrence patterns were generally similar for all of the indicators of reduced food intake and disrupted eating patterns. Average days of occurrence (for those reporting occurrence at any time during the month) ranged from 7.8 days for *child(ren) skipped meals* to 10.3 days for *respondent ate less than he/she felt he/she should*.

Average daily prevalence of the various behaviors, experiences, and conditions characterizing very low food security were calculated based on the proportion of households reporting the condition at any time during the

previous 30 days and the average number of days in which the condition occurred.<sup>2</sup> These daily prevalence rates ranged from 2.04 percent for *respondent ate less than he/she felt he/she should to 0.17 percent for children skipped meals*.

No direct measure of the daily prevalence of very low food security has yet been developed. However, the ratio of daily prevalence to monthly prevalence of the various indicator conditions provides a basis for approximating the average daily prevalence of very low food security during the reference 30-day period. For the adult-referenced items, daily prevalences ranged from 26 to 34 percent of their prevalence at any time during the month (analysis not shown, based on table A-5) and from 18 to 23 percent of their prevalence at any time during the year (analysis not shown, based on tables A-3 and A-5). The corresponding ranges for daily prevalences of the child-referenced items were 26 to 32 percent of monthly prevalence and 17 to 22 percent of annual prevalence. These findings are generally consistent with those of Nord et al. (2000), and are used to estimate upper and lower bounds of the daily prevalence of very low food security described earlier in this report.

<sup>2</sup>Average daily prevalence is calculated as the product of the 30-day prevalence and the average number of days divided by 30.

## Appendix B—Background on the U.S. Food Security Measurement Project

---

This report of household food security in 2008 is the latest in a series of reports on *Measuring Food Security in the United States*. Previous reports in the series are:

- *Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project* (Hamilton et al., 1997a)
- *Household Food Security in the United States in 1995: Technical Report* (Hamilton et al., 1997b)
- *Household Food Security in the United States, 1995-1998: Advance Report* (Bickel et al., 1999)
- *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999)
- *Guide to Measuring Household Food Security, Revised 2000* (Bickel et al., 2000)
- *Household Food Security in the United States, 1999* (Andrews et al., 2000)
- *Household Food Security in the United States, 1995-1997: Technical Issues and Statistical Report* (Ohls et al., 2001)
- *Household Food Security in the United States, 1998 and 1999: Detailed Statistical Report* (Cohen et al., 2002b)
- *Household Food Security in the United States, 1998 and 1999: Technical Report* (Cohen et al., 2002a)
- *Household Food Security in the United States, 2000* (Nord et al., 2002b)
- *Measuring Children's Food Security in U.S. Households, 1995-99* (Nord and Bickel, 2002)
- *Household Food Security in the United States, 2001* (Nord et al., 2002a)
- *A 30-Day Food Security Scale for Current Population Survey Food Security Supplement Data* (Nord 2002)
- *Household Food Security in the United States, 2002* (Nord et al., 2003)
- *Household Food Security in the United States, 2003* (Nord et al., 2004)
- *Household Food Security in the United States, 2004* (Nord et al., 2005)
- *Household Food Security in the United States, 2005* (Nord et al., 2006)
- *Household Food Security in the United States, 2006* (Nord et al., 2007)
- *Household Food Security in the United States, 2007* (Nord et al., 2008)

The series was inaugurated in September 1997 with the three-volume report, *Household Food Security in the United States in 1995* (Hamilton et al., 1997a and 1997b, Price et al., 1997). The advance report of findings for 1995-98 (Bickel, Carlson, and Nord, 1999) was released in July 1999, and a



report detailing prevalence rates of food insecurity by State for the 1996-98 period (Nord, Jemison, and Bickel, 1999) was released in September 1999. Summary reports of findings for 1999 (Andrews et al., 2000), 2000 (Nord et al., 2002b), 2001 (Nord et al., 2002a), 2002 (Nord et al., 2003), and 2003 (Nord et al., 2004) continued the national report series and expanded its scope. Detailed statistical reports for 1995-97 (Ohls et al., 2001) and for 1998-99 (Cohen et al., 2002b) provided additional prevalence statistics along with standard errors for prevalence estimates and explored technical issues in food security measurement.

The estimates contained in all of these reports are based on a direct survey measure developed over several years by the U.S. Food Security Measurement Project, an ongoing collaboration among Federal agencies, academic researchers, and both commercial and nonprofit private organizations (Carlson et al., 1999; Olson, 1999.) The measure was developed in response to the National Nutrition Monitoring and Related Research Act of 1990. The Ten-Year Comprehensive Plan developed under the act specified the following task:

*Recommend a standardized mechanism and instrument(s) for defining and obtaining data on the prevalence of “food insecurity” or “food insufficiency” in the U.S. and methodologies that can be used across the NNMRR Program and at State and local levels.<sup>1</sup>*

Beginning in 1992, USDA staff reviewed the existing research literature, focusing on the conceptual basis for measuring the severity of food insecurity and hunger and on the practical problems of developing a survey instrument for use in sample surveys at national, State, and local levels.

In January 1994, USDA’s Food and Nutrition Service (FNS) joined with the U.S. Department of Health and Human Services’ National Center for Health Statistics (NCHS) in sponsoring a National Conference on Food Security Measurement and Research. This meeting brought together leading academic experts and other private researchers and key staff of the concerned Federal agencies. The conference identified the consensus among researchers in the field as to the strongest conceptual basis for a national measure of food insecurity and hunger. It also led to a working agreement about the best method for implementing such a measure in national surveys (USDA, 1995).

After extensive cognitive assessment, field testing, and analysis by the U.S. Census Bureau, a food security survey questionnaire was fielded by the bureau as a supplement to the Current Population Survey (CPS) of April 1995.<sup>2</sup> The CPS food security survey was repeated in September 1996, April 1997, August 1998, April 1999, September 2000, April 2001, and December of 2001 and later years. Minor modifications to the questionnaire format and screening procedures were made over the first several years, and a more substantial revision in screening and format, designed to reduce respondent burden and improve data quality, was introduced with the August 1998 survey. However, the content of the 18 questions upon which the U.S. Food Security Scale is based remained constant in all years.<sup>3</sup>

Initial analysis of the 1995 data was undertaken by Abt Associates, Inc., through a cooperative venture with FNS, the interagency working group,

<sup>1</sup>Task V-C-2.4, U.S. Department of Health and Human Services and U.S. Department of Agriculture: Ten-Year Comprehensive Plan for the National Nutrition Monitoring and Related Research Program. *Federal Register* 1993, 58:32 752-806.

<sup>2</sup>The Current Population Survey (CPS) is a representative national sample of approximately 60,000 households conducted monthly by the U.S. Census Bureau for the U.S. Department of Labor, Bureau of Labor Statistics. Its primary purpose is to monitor labor force participation and employment in the United States and each of the 50 States. Various Federal agencies sponsor collection of specialized supplementary data by the CPS following the labor-force interview. The CPS food security survey has been conducted annually since 1995 as one such CPS supplement, sponsored by USDA. From 1995 to 2000 the food security survey alternated between April and August/September; beginning in 2001, it has been conducted in early December.

<sup>3</sup>In some years, alternative wording of some questions was tested in one-eighth of the sample. In those surveys, either the equivalence of the measure in the test cases was assured, based on the other questions in the scale, or the test cases were omitted from the analysis sample used to estimate prevalence rates.

and other key researchers involved in developing the questionnaire. The Abt team used nonlinear factor analysis and other state-of-the-art scaling methods to produce a measurement scale for the severity of deprivation in basic food needs, as experienced by U.S. households. Extensive testing was carried out to establish the validity and reliability of the scale and its applicability across various household types in the broad national sample (Hamilton et al., 1997a, 1997b).<sup>4</sup>

Following collection of the September 1996 and April 1997 CPS food security data, Mathematica Policy Research, Inc. (MPR), under a contract awarded by FNS, reproduced independently the results from the 1995 CPS food security data, estimated prevalences of food insecurity and food insecurity with hunger for 1996 and 1997, and assessed the stability and robustness of the measurement model when applied to the separate datasets. The MPR findings (Ohls et al., 2001) establish the stability of the food security measure over the 1995-97 period. That is, the relative severities of the items were found to be nearly invariant across years and across major population groups and household types.

In 1998, USDA's Economic Research Service (ERS) assumed sponsorship of the Census Bureau's annual CPS food security data collection for USDA. In 1999, ERS, FNS, and the National Center for Health Statistics, U.S. Department of Health and Human Services, sponsored the Second Food Security Measurement and Research Conference. The conference included presentations on a range of food security measurement issues and on research applications using the new food security measure (Andrews and Prell, 2001a; 2001b). Discussions at this conference and subsequent interagency meetings led to a decision to combine the two most severe categories and not report "food insecure with severe hunger" as a separate category.

ERS and IQ Solutions (working under a contract awarded by ERS) analyzed the 1998 and 1999 data, applying and refining the procedures developed for USDA in the Abt and MPR research. These analyses found continuing stability of the measure in those 2 years (Cohen et al., 2002a). Research by ERS and FNS also developed measurement methods for assessing the food security of children (Nord and Bickel, 2002) and for measuring the food security of households during the 30 days prior to interview based on the CPS food security survey data available from 1995 to 2004 (Nord, 2002).<sup>5</sup>

In 2003-06 an expert panel convened by the Committee on National Statistics (CNSTAT) of the National Academies conducted a thorough review of the food security measurement methods. USDA requested the review by CNSTAT to ensure that the measurement methods USDA uses to assess households' access—and lack of access—to adequate food and the language used to describe those conditions are conceptually and operationally sound and that they convey useful and relevant information to policy officials and the public. The panel convened by CNSTAT to conduct this study included economists, sociologists, nutritionists, statisticians, and other researchers. One of the central issues the CNSTAT panel addressed was whether the concepts and definitions underlying the measurement methods—especially the concept and definition of hunger and the relationship between hunger and food insecurity—were appropriate for the policy context in which food security statistics are used.

<sup>4</sup>The food security scale reported here is based on the Rasch measurement model, an application of maximum likelihood estimation in the family of Item Response Theory models (Wright, 1977, 1983). These statistical measurement models were developed in educational testing, where test items vary systematically in difficulty and the overall score measures the level of difficulty that the tested individual has mastered. In the present application, the items vary in the severity of food insecurity to which they refer, and the overall score measures the severity of food insecurity recently experienced by household members.

<sup>5</sup>Beginning with the 2005 data, all questions in the food security scale were asked with respect to the last 30 days as well as the last 12 months. These data support calculation of a full-range 30-day scale.

The CNSTAT panel recommended that USDA continue to measure and monitor food insecurity regularly in a household survey, affirmed the appropriateness of the general methodology currently used to measure food insecurity, and suggested several ways in which the methodology might be refined (contingent on confirmatory research). Research on these issues is currently underway at ERS.

The CNSTAT panel recommended that USDA make a clear and explicit distinction between food insecurity and hunger. Food insecurity—the condition assessed in the food security survey and represented in the statistics in this report—is a household-level economic and social condition of limited or uncertain access to adequate food. Hunger is an individual-level physiological condition that may result from food insecurity. The word “hunger,” the panel stated in its final report, “...should refer to a potential consequence of food insecurity that, because of prolonged, involuntary lack of food, results in discomfort, illness, weakness, or pain that goes beyond the usual uneasy sensation.” To measure hunger in this sense would require collection of more detailed and extensive information on physiological experiences of individual household members than could be accomplished effectively in the context of the CPS-FSS. In the CPS-FSS, one person provides information on all household members, and the basic CPS, which carries the CPS-FSS as a supplement, is focused primarily on employment and other labor force issues. The panel recommended, therefore, that new methods be developed to measure hunger and that a national assessment of hunger be conducted using an appropriate survey of individuals rather than a survey of households.

The CNSTAT panel also recommended that USDA consider alternate labels to convey the severity of food insecurity without using the word “hunger,” since hunger is not adequately assessed in the food security survey. USDA concurred with this recommendation and, accordingly, introduced the new labels “low food security” and “very low food security” to replace “food insecurity without hunger” and “food insecurity with hunger,” respectively, beginning with the 2006 report. USDA is collaborating with partners in the food security measurement community to explore how best to implement other recommendations of the CNSTAT panel.

A large number of independent researchers in the academic and nutrition communities also have used the U.S. food security survey module and food security scale to assess the severity and prevalence of food insecurity in various population groups. One general result of these studies has been to verify the consistency of the measurement construct and the robustness of the measurement method in diverse populations and survey contexts.

Nonetheless, the following caveats need to be kept in mind when interpreting the prevalence estimates in this report:

- The Current Population Survey, which carries the food security survey as a supplement, is representative of the noninstitutionalized population of the United States. It is based on a complete address list of sampled areas (counties and metropolitan areas), but does not include homeless persons who are not in shelters. This may result in an underestimate of the number of persons with very low food security.

- Case study and ethnographic research suggests that some parents are reluctant to report inadequate food intake for their children even when it has occurred (Hamilton et al., 1997b, p. 88). This may result in an underestimate of the prevalence of very low food security among children based on food security survey data.
- Small, random measurement errors, combined with the nature of the distribution of households across the range of severity of food insecurity, may result in a modest overestimate of food insecurity and very low food security. False positives—the incorrect classification of food-secure households as food insecure—are more likely than false negatives because there are more households just above the food insecurity threshold than in a similar range just below it. (Most households are food secure, and the number in each range of severity declines as severity increases.) The same is true at the very low food security threshold (Hamilton et al., 1997a, p. 65; Hamilton et al., 1997b, p. 89).

## Appendix C—USDA’s Thrifty Food Plan

The Thrifty Food Plan—developed by USDA—serves as a national standard for a nutritious diet at low cost. It represents a set of “market baskets” of food that people of specific age and gender could consume at home to maintain a healthful diet that meets current dietary standards, taking into account the food consumption patterns of U.S. households. The cost of the meal plan for each age-gender category is calculated based on average national food prices adjusted for inflation.<sup>1</sup>

The cost of the market basket for a household is further adjusted by household size to account for economies of scale. The cost of the Thrifty Food Plan is used in this report to adjust household spending on food so that spending can be compared meaningfully among households of different sizes and age-gender compositions. It provides a baseline that takes into account differences in households’ calorie and nutrient requirements due to these differences in household composition. This appendix provides background information on the Thrifty Food Plan and details of how it is calculated for each household.

In 1961, USDA developed four cost-specific, nutritionally balanced food plans: Economy, Low-Cost, Moderate-Cost, and Liberal. The food plans were developed by studying the food-purchasing patterns of households in the United States and modifying these choices by the least amount necessary to meet nutritional guidelines at specific cost objectives. The Economy Food Plan and its successor, the Thrifty Food Plan, have been used for a number of important policy and statistical purposes over the years. In the 1960s, a low-income threshold based on the Economy Food Plan was adopted as the official poverty threshold of the United States (Citro and Michael, 1995, p. 110). The cost of the Thrifty Food Plan is used by USDA’s Food and Nutrition Service as a basis for determining families’ maximum SNAP allotments.<sup>2</sup>

The last revision of the Thrifty Food Plan was completed by USDA’s Center for Nutrition Policy and Promotion (CNPP) in 2006. This was done to reflect updated dietary recommendations and food composition data and current food prices and consumption patterns, while maintaining the cost at the level of the previous market baskets (USDA, 2007). CNPP updates the cost of each of USDA’s four food plans monthly to reflect changes in food prices, as measured by the Consumer Price Index for specific food categories. Table C-1 lists estimated weekly costs of the four USDA food plans for the month of December 2008—the month the 2008 CPS food security survey was conducted.

The cost of the Thrifty Food Plan was calculated for each household in the food security survey, based on the information in table C-1, and was used as a baseline for comparing food expenditures across different types of households.<sup>3</sup> The food plan costs in table C-1 are given for individuals in the context of four-person families. For households that are larger or smaller than four persons, the costs must be adjusted for economies of scale, as specified in the first footnote of table C-1. For example, the weekly Thrifty Food Plan cost for a household composed of a married couple with no children, ages 29 (husband) and 30 (wife), is given by adding the individual Thrifty Food Plan costs for the husband (\$40.00) and wife (\$35.50) and adjusting the total upward by 10 percent. The adjusted total (\$83.00) represents the cost of the Thrifty Food Plan for this type of household.

<sup>1</sup>The costs of the Thrifty Food Plan for residents of Alaska and Hawaii are calculated based on State food prices rather than average national food prices.

<sup>2</sup>The Thrifty Food Plan was revised several times over the years (with major changes in 1983, 1999, and 2006) in order to take into account new information about nutritional needs, nutritional values of foods, food consumption preferences, and food prices (Kerr et al., 1984; USDA, 1999; USDA, 2007). In these revisions, USDA gave attention both to cost containment—keeping the cost of the Thrifty Food Plan near the SNAP or food stamp benefit level—and to the buying patterns of households (Citro and Michael, 1995, p. 111).

<sup>3</sup>For residents in Alaska and Hawaii, the Thrifty Food Plan costs were adjusted upward by 20 percent and 58 percent, respectively, to reflect the higher cost of the Thrifty Food Plan in those States.



Table C-1

**Weekly cost of USDA food plans: Cost of food at home at four levels, December 2008**

Age-gender group <sup>1</sup>	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan
<i>Dollars</i>				
<b>Child:</b>				
1 year <sup>2</sup>	20.70	27.50	31.40	38.00
2-3 years	22.10	27.80	33.60	40.90
4-5 years	23.00	29.10	35.90	43.70
6-8 years	29.30	39.60	48.60	57.20
9-11 years	33.90	44.00	56.40	66.30
<b>Male:</b>				
12-13 years	35.90	50.20	62.40	73.50
14-18 years	37.30	52.00	64.80	74.60
19-50 years	40.00	51.30	64.10	78.40
51-70 years	36.60	48.70	59.50	72.10
71 years and over	36.70	48.20	59.70	73.30
<b>Female:</b>				
12-13 years	36.00	43.90	52.50	63.80
14-18 years	35.70	44.10	53.20	65.40
19-50 years	35.50	44.70	54.90	70.40
51-70 years	35.20	43.60	54.10	64.40
71 years and over	34.60	43.20	53.90	64.70
<i>Examples of families</i>				
<b>1. Couple:</b>				
19-50 years	83.00	105.60	131.00	163.70
<b>2. Couple, 19-50 years, with 2 children, ages 2-3 and 4-5 years</b>				
	120.60	152.90	188.60	233.40

<sup>1</sup>The costs given are for individuals in 4-person families. For individuals in other-size families, the following adjustments are suggested: 1-person – add 20 percent; 2-person – add 10 percent; 3-person – add 5 percent; 5- or 6-person – subtract 5 percent; 7- (or more) person – subtract 10 percent.

<sup>2</sup>USDA does not have official food plan cost estimates for children less than 1 year old. Since the Thrifty Food Plan identifies the most economical sources of food, in this analysis we assume a food plan based on breastfeeding. We arbitrarily set the cost of feeding a child under 1 year at half the cost of feeding a 1-year-old child, in order to account for the added food intake of mothers and other costs associated with breastfeeding. While this estimate is rather arbitrary, it affects only 2.5 percent of households in our analysis.

Source: USDA, Center for Nutrition Policy and Promotion, <http://www.cnpp.usda.gov/Publications/FoodPlans/2008/CostofFoodDec08.pdf>.



## Appendix D—Food Security During 30 Days Prior to the Food Security Survey

The annual food security survey was designed with the primary objective of assessing households' food security during the 12-month period prior to the survey, but information is also collected with reference to the 30-day period prior to the survey. From 1995-2004, information on 30-day food security was collected for only a subset of the food security questions—those indicating more severe levels of food insecurity. Beginning with the 2005 survey, information on the full set of food security questions has been collected for both the 30 days and 12 months prior to the survey. Households that responded affirmatively to each 12-month question were asked whether the same behavior, experience, or condition occurred during the last 30 days. Responses to these questions were used to assess the food security status of households during the 30 days prior to the survey, following the same protocols that were used for the 12-month measure. The 30-day statistics for 2008 are, therefore, comparable with those for 2005 and later years, but not with those reported for 2004 and earlier years.

About 91 percent of households were food secure throughout the 30-day period from mid-November to mid-December 2008 (table D-1).<sup>1</sup> About 10.4 million households (8.8 percent) were food insecure at some time during that 30-day period, including 4.2 million (3.6 percent) with very low food security. The prevalence rates of food insecurity and very low food security during this period were higher than during the same period in 2007 (6.3 and 2.4 percent, respectively).

The number of households that were food insecure at some time during the 30 days from mid-November to mid-December was 60 percent of the number that were food insecure at some time during the entire 12 months prior to the survey; the corresponding statistic for very low food security was 63 percent. If food insecurity during this 30-day period was similar to that for other 30-day periods throughout the year, then these comparisons imply that the average household that was food insecure at some time during the year experienced this condition in 7 months of the year, while the average household with very low food security experienced that condition in 7 or 8 months of the year.<sup>2</sup> However, analysis of food insecurity in different months suggests that food insecurity is somewhat more prevalent in the summer months (July-September) than in March-April and November-December (Cohen et al., 2002a; Nord and Romig, 2006; Nord and Kantor, 2006), so typical frequencies may be somewhat higher than the 7 or 8 months implied by the December data.

The prevalence rates of food insecurity and very low food security during the 30 days prior to the survey varied across household types following the same general pattern as the 12-month measure. Prevalence rates were lowest for married-couple families with children, households with two or more adults without children, households that included an elderly person, White non-Hispanic households, and households with incomes higher than 185 percent of the poverty line. Prevalence rates were highest for households with children headed by a single parent, households headed by Blacks and Hispanics, and households with low incomes. Relationships between 30-day and 12-month

<sup>1</sup>The food security survey was conducted during the week of December 14-20, 2008.

<sup>2</sup>The implied frequency of very low food security (7.5 months on average) for those experiencing the condition at any time during the year is consistent with that reported in 2005-07, but is lower than that estimated in 2004 and earlier years (8 to 9 months). This is a result of the new methodology for measuring food security during the 30 days prior to the survey, which includes 30-day-referenced questions corresponding to each question in the 12-month measure.

Table D-1

**Households by food security status during the 30 days prior to the food security survey and selected household characteristics, 2008<sup>1</sup>**

Category	Total <sup>1</sup> 1,000	Food secure		Food insecure					
		1,000	Percent	All 1,000	Percent	With low food security		With very low food security	
						1,000	Percent	1,000	Percent
All households	117,565	107,208	91.2	10,357	8.8	6,137	5.2	4,220	3.6
Household composition:									
With children < 18 yrs	39,699	34,797	87.7	4,902	12.3	3,245	8.2	1,657	4.2
With children < 6 yrs	17,503	15,296	87.4	2,207	12.6	1,546	8.8	661	3.8
Married-couple families	26,705	24,508	91.8	2,197	8.2	1,489	5.6	708	2.7
Female head, no spouse	9,639	7,468	77.5	2,171	22.5	1,393	14.5	778	8.1
Male head, no spouse	2,782	2,355	84.7	427	15.3	287	10.3	140	5.0
Other household with child <sup>2</sup>	572	465	81.3	107	18.7	76	13.3	31	5.4
With no children < 18 yrs	77,866	72,411	93.0	5,455	7.0	2,892	3.7	2,563	3.3
More than one adult	45,772	43,147	94.3	2,625	5.7	1,464	3.2	1,161	2.5
Women living alone	17,934	16,287	90.8	1,647	9.2	836	4.7	811	4.5
Men living alone	14,160	12,977	91.6	1,183	8.4	592	4.2	591	4.2
With elderly	28,211	26,929	95.5	1,282	4.5	792	2.8	490	1.7
Elderly living alone	11,148	10,639	95.4	509	4.6	279	2.5	230	2.1
Race/ethnicity of households:									
White non-Hispanic	82,935	77,477	93.4	5,458	6.6	3,134	3.8	2,324	2.8
Black non-Hispanic	14,441	12,360	85.6	2,081	14.4	1,164	8.1	917	6.3
Hispanic <sup>3</sup>	13,504	11,204	83.0	2,300	17.0	1,497	11.1	803	5.9
Other	6,686	6,167	92.2	519	7.8	342	5.1	177	2.6
Household income-to-poverty ratio:									
Under 1.00	13,117	9,557	72.9	3,560	27.1	1,957	14.9	1,603	12.2
Under 1.30	20,383	15,297	75.0	5,086	25.0	2,807	13.8	2,279	11.2
Under 1.85	29,680	23,321	78.6	6,359	21.4	3,643	12.3	2,716	9.2
1.85 and over	70,433	67,402	95.7	3,031	4.3	1,893	2.7	1,138	1.6
Income unknown	17,452	16,483	94.4	969	5.6	602	3.4	367	2.1
Area of residence: <sup>4</sup>									
Inside metropolitan area	98,189	89,378	91.0	8,811	9.0	5,204	5.3	3,607	3.7
In principal cities <sup>5</sup>	32,808	29,331	89.4	3,477	10.6	2,125	6.5	1,352	4.1
Not in principal cities	48,239	44,485	92.2	3,754	7.8	2,161	4.5	1,593	3.3
Outside metropolitan area	19,375	17,829	92.0	1,546	8.0	933	4.8	613	3.2
Census geographic region:									
Northeast	21,341	19,695	92.3	1,646	7.7	920	4.3	726	3.4
Midwest	26,370	24,168	91.6	2,202	8.4	1,297	4.9	905	3.4
South	43,542	39,394	90.5	4,148	9.5	2,551	5.9	1,597	3.7
West	26,311	23,950	91.0	2,361	9.0	1,369	5.2	992	3.8

<sup>1</sup>The 30-day prevalence rates refer to the 30-day period from mid-November to mid-December; the survey was conducted during the week of December 14-20, 2008. Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the 30-day food security scale. In 2008, these represented 366,000 households (0.3 percent of all households.) The 30-day statistics for 2004 and earlier years were based on a different methodology and are not comparable with these statistics.

<sup>2</sup>Households with children in complex living arrangements (e.g., children of other relatives or unrelated roommate or boarder).

<sup>3</sup>Hispanics may be of any race.

<sup>4</sup>Metropolitan area residence is based on the 2003 Office of Management and Budget delineation.

<sup>5</sup>Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.

prevalence rates did not differ greatly across the categories of households listed in table D-1.

The 30-day food security measure facilitates a more temporally precise analysis of the relationship between households' food insecurity and their use of Federal and community food and nutrition assistance programs than does the 12-month measure. Measured food insecurity and reported use of food and nutrition assistance programs are more likely to refer to contemporaneous conditions when both are referenced to the previous 30 days than when one or both is referenced to the previous 12 months. For households that left SNAP (the Food Stamp Program) during the year, the 30-day measure of food security can also provide information about their food security status after they left the program.

The 30-day prevalence of food insecurity (44.3 percent) and very low food security (24.5 percent) among households that left SNAP during the year were more than twice the corresponding rates for households in the same low-income range that did not receive SNAP benefits at any time during the year (20.0 percent food insecurity and 8.9 percent very low food security; table D-2). Prevalence rates among SNAP leavers were somewhat higher than those among households that received SNAP benefits during the 30 days prior to the survey. This implies that not all households that left the program did so because their economic situations had improved to a level that ensured access to enough food without assistance. Associations of 30-day prevalence rates of food insecurity and very low food security with use of other food and nutrition assistance programs were similar to those of the 12-month measure reported in table 12.

Table D-2

**Prevalence of food insecurity during the 30 days prior to the food security survey, by participation in selected Federal and community food assistance programs, 2008<sup>1</sup>**

Category	Food insecurity (low or very low food security)	Very low food security
	<i>Percent</i>	
Income less than 130 percent of poverty line:		
Received SNAP <sup>2</sup> benefits previous 30 days	33.5	14.4
Received SNAP <sup>2</sup> benefits in every month during the previous 12 months	33.4	15.2
Received SNAP <sup>2</sup> benefits previous 12 months but not previous 30 days (SNAP leavers)	44.3	24.5
Did not receive SNAP <sup>2</sup> benefits previous 12 months	20.0	8.9
Income less than 185 percent of poverty line; school-age children in household:		
Received free or reduced-price school lunch previous 30 days	31.7	11.4
Did not receive free or reduced-price school lunch previous 30 days	17.3	7.3
Income less than 185 percent of poverty line; children under age 5 in household:		
Received WIC previous 30 days	26.9	9.2
Did not receive WIC previous 30 days	22.4	6.1
Income less than 185 percent of poverty line:		
Received emergency food from food pantry previous 30 days	54.4	32.7
Did not receive emergency food from food pantry previous 30 days	19.1	7.5

<sup>1</sup>The 30-day prevalence rates refer to the 30-day period from mid-November to mid-December; the survey was conducted during the week of December 14-20, 2008. The number of interviewed households reporting use of emergency kitchens during the previous 30 days was too small to provide reliable food security prevalence estimates.

<sup>2</sup>SNAP (Supplemental Nutrition Assistance Program) is the new name for the Food Stamp Program, effective as of October 2008.

Source: Calculated by ERS using data from the December 2008 Current Population Survey Food Security Supplement.