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

*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

Food Assistance
and Nutrition
Research Report
Number 29

Measuring Food Security in the United States

Household Food Security in the United States, 2001

Mark Nord
Margaret Andrews
Steven Carlson

Food Assistance & Nutrition Research Program

Household Food Security in the United States, 2001. By Mark Nord, Margaret Andrews, and Steven Carlson. Food and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture, Food Assistance and Nutrition Research Report No. 29.

Abstract

Eighty-nine percent of American households were food secure throughout the entire year 2001. The rest were food insecure at least some time during the year, meaning they did not always have access to enough food for active, healthy lives for all household members because they lacked sufficient money or other resources for food. The prevalence of food insecurity rose from 10.1 percent in 1999 to 10.7 percent in 2001, and the prevalence of food insecurity with hunger rose from 3.0 percent to 3.3 percent during the same period. This report, based on data from the December 2001 food security survey, provides the most recent statistics on the food security of U.S. households, as well as on how much they spent for food and the extent to which food-insecure households participated in Federal and community food assistance programs. Survey responses indicate that the typical food-secure household in the United States spent 32 percent more than the typical food-insecure household of the same size and household composition. About one-half of all food-insecure households participated in one or more of the three largest Federal food assistance programs during the month prior to the survey. About 19 percent of food-insecure households—2.8 percent of all U.S. households—obtained emergency food from a food pantry at some time during the year.

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

About the Authors

Mark Nord and Margaret Andrews work in the Food and Rural Economics Division, Economic Research Service (ERS), U.S. Department of Agriculture. Nord is Team Leader for Food Stamp and Food Security Research, and Andrews is Assistant Deputy Director for Food Stamp Research in the Food Assistance and Nutrition Research Program. Steven Carlson is Director of Family Programs Staff in the Office of Analysis, Nutrition, and Evaluation, Food and Nutrition Service, U.S. Department of Agriculture.

Acknowledgments

The authors thank the following reviewers for their critical and insightful reviews of the report: Gail Harrison, School of Public Health, University of California, Los Angeles; Linda Ghelfi and David Smallwood, Economic Research Service, U.S. Department of Agriculture.

1800 M Street, NW
Washington, DC 20036-5831

October 2002

Contents

Summary iii

Introduction 1

Section 1. Household Food Security 2

Methods 2

Prevalence of Food Insecurity and Hunger—National Conditions and Trends 3

Prevalence of Food Insecurity and Hunger—Conditions and Trends, by Selected Household Characteristics 6

Food Insecurity and Hunger in Low-Income Households 11

Number of Persons by Household Food Security Status and Household Type 13

Prevalence of Food Insecurity and Hunger by State, 1999-2001 16

Section 2. Household Spending on Food 18

Methods 18

Food Expenditures by Selected Household Characteristics 20

Food Expenditures and Household Food Security 22

Section 3. Use of Federal and Community Food Assistance Programs 24

Methods 24

Food Security and Food Spending of Households That Received Food Assistance 27

Participation in Federal Food Assistance Programs by Food-Insecure Households 29

Use of Food Pantries and Emergency Kitchens 30

Use of Food Pantries and Emergency Kitchens by Food Security Status 31

Use of Food Pantries by Selected Household Characteristics 32

Combined Use of Federal and Community Food Assistance 34

References 35

Appendix A: Household Responses to Questions in the Food Security Scale 37

Frequency of Occurrence of Behaviors, Experiences, and Conditions That Indicate Food Insecurity 39

Appendix B: Background on the U.S. Food Security Measurement Project 42

Appendix C: USDA's Thrifty Food Plan 44

Appendix D: Changes in Prevalence of Food Insecurity and Hunger by State, 1996-98 (average) to 1999-2001 (average) 46

Summary

Food security—access by all people at all times to enough food for an active, healthy life—declined in the United States from 1999 to 2001.[1] The prevalence of food insecurity increased by 0.6 percentage points and the prevalence of hunger by 0.3 percentage points during the period.

Food security is one of several necessary conditions for a population to be healthy and well nourished. The U.S. Department of Agriculture (USDA) monitors food security in the Nation's households through an annual survey of some 40,000 households conducted by the U.S. Census Bureau. The most recent food security survey reveals 89.3 percent of U.S. households were food secure throughout calendar year 2001. "Food secure" means they had access, at all times, to enough food for an active, healthy life for all household members. The remaining 10.7 percent of U.S. households (11.5 million) were food insecure. At some time during the year, these households were uncertain of having, or unable to acquire, enough food to meet basic needs of all their members because they had insufficient money or other resources. About one-third of food-insecure households (3.5 million, or 3.3 percent of all U.S. households) were food insecure to the extent that one or more household members were hungry at least some time during the year because they could not afford enough food. The other two-thirds of food-insecure households obtained enough food to avoid hunger, using a variety of coping strategies such as eating less varied diets, participating in Federal food assistance programs, or getting emergency food from community food pantries. The prevalence of hunger on any given day was much lower than the annual rate; on a typical day in 2001, about 0.4 to 0.6 percent of households were food insecure with hunger. Children were hungry at times during the year in 211,000 households (0.6 percent of households with children) because the household lacked sufficient money or other resources for food.

The amount households spend for food is an indicator of how adequately they are meeting their food needs. In 2001, the typical (median) U.S. household spent $37.50 per person for food each week. Weekly food spending by the typical household was about 32 percent higher 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 typical food-secure household spent 35 percent more than the cost of the Thrifty Food Plan, while the typical food-insecure household spent 2 percent more than the cost of the Thrifty Food Plan.

Some households participate in Federal food assistance programs or turn to community resources such as food pantries and emergency kitchens for help when they lack money to buy food. Among all food-insecure households:

- 51.5 percent received help from one or more of the three largest Federal food assistance programs—food stamps, free or reduced-price school lunches, or WIC—during the month prior to the survey;
- 18.6 percent obtained emergency food from a food pantry, church, or food bank during the 12 months prior to the survey; and
- 2.8 percent had members who ate at an emergency kitchen sometime during the 12 months prior to the survey.

Some 3.0 million households—2.8 percent of all U.S. households—reported getting emergency food from food pantries, churches, or food banks one or more times during 2001.

[1]The rates of food insecurity and hunger observed in 2001 were only slightly higher than those observed in 2000. Comparisons of 2001 statistics are made to 1999 rather than to 2000 because seasonal effects related to the month in which the surveys were conducted may bias comparisons between 2000 and 2001. Further information on this issue is detailed in section 1.

Household Food Security in the United States, 2001

Mark Nord
Margaret Andrews
Steven Carlson

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 yearly food security surveys, 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 of food insecurity and hunger in U.S. households. USDA reports in the series *Measuring Food Security in the United States* have summarized the findings of this research for each year from 1995 to 2000. (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, using data collected in the December 2001 food security survey. The report also updates the statistical series initiated in last year's report on household food spending, how food-insecure households use Federal and community food assistance, and the numbers of households using community food pantries and emergency kitchens. These statistics provide additional insight into the nature of food insecurity and how low-income households meet their food needs.

Unless otherwise noted, statistical differences described in the text are significant at the 90 percent confidence level.

Section 1. 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, food insecurity, and hunger in U.S. households based on the December 2001 food security survey—the seventh annual survey in the Nation's food security monitoring system.

Methods

The results presented in all three sections of this report are based on data collected in the Current Population Survey (CPS) food security surveys for the years 1995-2001. The statistics presented in section 1 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.[2] Each question asks whether the condition or behavior occurred during the previous 12 months and specifies a lack of money or other resources to obtain food as the reason for the condition or behavior. Voluntary fasting or dieting to lose weight is thereby excluded from the measure. Response frequencies for the 18 items used to classify households are provided in appendix A. Full-question wordings are presented in Bickel et al., 2000, and are available from the ERS Food Security Briefing Room at http://www.ers.usda.gov/briefing/foodsecurity/

Interviewed households are classified into one of three categories—food secure, food insecure without hunger, food insecure with hunger—based on the number of food-insecure conditions and behaviors the household reported. Households classified as food insecure with hunger that include children are further classified as to whether both children and adults were hungry or only adults. The presence of hunger among children in food-insecure households is measured by a subset of the food security questions that ask specifically about the conditions and experiences of children (Nord and Bickel, 2002). Appropriate weighting factors are then applied to the surveyed households to obtain nationally representative prevalence estimates.

Examples of Questions from the CPS Food Security Survey

"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?

"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?

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?

In the last 12 months were you ever hungry, but didn't eat, because you couldn't afford enough food?

(For households with children) 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?

[2]The methods used to measure the extent of food insecurity and hunger 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). Further details on the development of the measure are provided in appendix B.

Prevalence of Food Insecurity and Hunger—National Conditions and Trends

Eighty-nine percent of U.S. households were food secure throughout the entire year 2001. "Food secure" means that all household members had access at all times to enough food for an active, healthy life. The remaining 11.5 million U.S. households (10.7 percent of all households) were food insecure at some time during the year. That is, they were uncertain of having, or unable to acquire, enough food to meet basic needs for all household members because they had insufficient money and other resources for food. About two-thirds of food-insecure households avoided hunger, in many cases by relying on a few basic foods and reducing variety in their diets. But 3.5 million households (3.3 percent of all U.S. households) were food insecure to the extent that one or more household members were hungry, at least some time during the year, because they couldn't afford enough food. In most households, children were protected from substantial reductions in food intake and ensuing hunger. However, in some 211,000 households (0.6 percent of households with children) food insecurity was sufficiently severe that one or more children in each household were also hungry on one or more days during the year because the household lacked money for enough food. In some households with more than one child, not all the children experienced hunger. In particular, younger children are often protected from hunger even when older children are not.

When interpreting food security statistics, it is important to keep in mind that households are classified as food insecure, or food insecure with hunger if they experienced the condition at any time during the previous 12 months. The rates of food insecurity and hunger on any given day are far below the annual rates. For example, the prevalence of hunger on a typical day is estimated to be about 13 to 18 percent of the annual rate (see box), or 0.4 to 0.6 percent of households (460,000 to 630,000 households) on a typical day in 2001.

How often were people hungry in households with hunger?

When poverty-linked hunger occurs in the United States, it is, in most cases, occasional or episodic, not chronic. The food security scale on which the statistics in this report are based is designed to register these occasional or episodic occurrences. Most of the questions ask whether a condition, experience, or behavior occurred at any time in the past 12 months. Three of the questions ask how many months a specific condition or behavior occurred, but households can be classified as food insecure or hungry based on a single, severe episode during the year. It is important to keep this aspect of the scale in mind when interpreting food security and hunger statistics. ERS analysis of CPS Food Security Supplement data has found that:

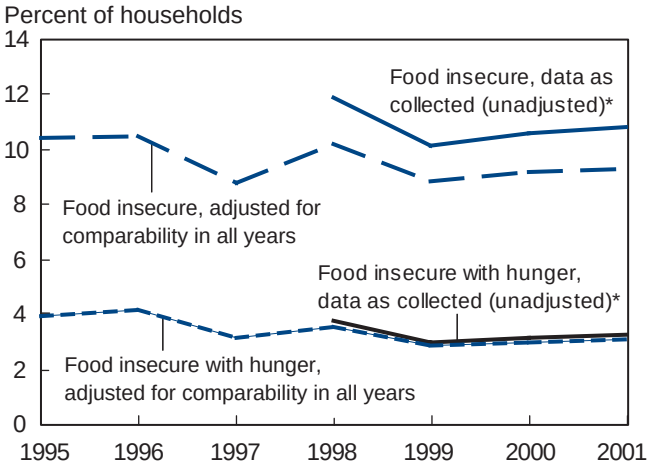
- About one-third of the hunger measured by the standard 12-month measure is rare or occasional, occurring in only 1 or 2 months of the year. Two-thirds is recurring, experienced in 3 or more months of the year.
- For about one-fifth of households classified as food insecure and one-fourth of those classified as hungry, occurrence of the condition was frequent or chronic. That is, it occurred often, or in almost every month.
- The monthly prevalence of resource-constrained hunger in the United States is about 70 percent of the annual prevalence, and the daily prevalence of hunger is 13 to 18 percent of the annual prevalence.

(Appendix A provides information on how often conditions indicating food insecurity and hunger occurred as reported by respondents to the December 2001 food security survey. See Nord et al., 2000, for further information about the frequency of food insecurity and hunger.)

The prevalence of food insecurity and hunger increased somewhat from 1999 to 2001 after having declined from 1995 to 1999 (fig. 1).[3] The year-to-year deviations from a consistent downward trend from 1995 to 2000 included a substantial 2-year cycle that is believed to result from a seasonal influence on food security prevalence rates (Cohen et al., 2002b). The CPS food security surveys over this period were conducted in April in odd-numbered years and August or September in even-numbered years. Measured prevalence of food insecurity was higher in the August/September collections, suggesting a seasonal response effect. In 2001, the survey was conducted in early December. Data collection is planned for December in future years, which will avoid further problems of seasonality effects in interpreting annual changes.

[3]Because of changes in screening procedures used to reduce respondent burden, food security statistics from 1995 to 1997 are not directly comparable with those from 1998 to 2001. Figure 1 presents statistics for the years 1995 to 2001, adjusted to be comparable across all years, as well as statistics for 1998 to 2001 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.

Figure 1
Trends in prevalence of food insecurity and hunger in U.S. households, 1995-2001



*Data as collected in 1995-97 are not directly comparable with data collected in 1998-2001.

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

A smaller food security survey was also conducted in April 2001 to provide information to bridge the new December series to the previous years' statistics, since seasonal effects of conducting the survey in December were unknown. 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. At the national level, the measured prevalence of food insecurity was slightly higher and the prevalence of hunger was slightly lower in the December 2001 survey than in the April 2001 survey, but the differences were not statistically significant. From April 1999 to April 2001, prevalences of both food insecurity and hunger increased, and these increases were statistically significant.[4] Thus, the April 2001 survey confirms that the observed increases in food insecurity and hunger from April 1999 to December 2001 represented genuine changes from 1999 to 2001 and were not artifacts of the month in which surveys were conducted. Throughout this section, therefore, statistics from the December 2001 survey are compared with those from April 1999.

The prevalence of food insecurity rose from 10.1 percent in 1999 to 10.7 percent in 2001 and the prevalence of food insecurity with hunger rose from 3.0 percent to 3.3 percent (table 1). The number of food-insecure households increased from 10.5 million in 1999 to 11.5 million in 2001, an increase of 9.4 percent, and the number of households that were food insecure with hunger rose from 3.1 million to 3.5 million during the 2-year period, an increase of 12.9 percent. (During this period, the total number of households in the Nation grew by 3.0 percent.) The prevalence of food insecurity with hunger among children was unchanged from 1999 to 2001.

[4]Prevalence rates of food insecurity were 10.1 percent in April 1999, 10.6 percent in April 2001, and 10.7 percent in December 2001; corresponding rates of food insecurity with hunger were 3.0, 3.4, and 3.3 percent.

Table 1—Prevalence of food security, food insecurity, and hunger by year

Unit	Total[1]	Food secure		Food insecure					
				All		Without hunger		With hunger	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
Households									
1998	103,309	91,121	88.2	12,188	11.8	8,353	8.1	3,835	3.7
1999	104,684	94,154	89.9	10,529	10.1	7,420	7.1	3,109	3.0
2000	106,043	94,942	89.5	11,101	10.5	7,786	7.3	3,315	3.1
2001	107,824	96,303	89.3	11,521	10.7	8,010	7.4	3,511	3.3
All individuals (by food security status of household)[2]									
1998	268,366	232,219	86.5	36,147	13.5	26,290	9.8	9,857	3.7
1999	270,318	239,304	88.5	31,015	11.5	23,237	8.6	7,779	2.9
2000	273,685	240,454	87.9	33,231	12.1	24,708	9.0	8,523	3.1
2001	276,661	243,019	87.8	33,642	12.2	24,628	8.9	9,014	3.3
Adults (by food security status of household)[2]									
1998	197,084	174,964	88.8	22,120	11.2	15,632	7.9	6,488	3.3
1999	198,900	179,960	90.5	18,941	9.5	13,869	7.0	5,072	2.5
2000	201,922	181,586	89.9	20,336	10.1	14,763	7.3	5,573	2.8
2001	204,340	183,398	89.8	20,942	10.2	14,879	7.3	6,063	3.0

	Total[1]	Food secure		Food insecure					
				All		Without hunger among children		With hunger among children	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
Households with children									
1998	38,036	31,335	82.4	6,701	17.6	6,370	16.7	331	.9
1999	37,884	32,290	85.2	5,594	14.8	5,375	14.2	219	.6
2000	38,113	31,942	83.8	6,171	16.2	5,916	15.5	255	.7
2001	38,330	32,141	83.9	6,189	16.1	5,978	15.6	211	.6
Children (by food security status of household)[2]									
1998	71,282	57,255	80.3	14,027	19.7	13,311	18.7	716	1.0
1999	71,418	59,344	83.1	12,074	16.9	11,563	16.2	511	.7
2000	71,763	58,867	82.0	12,896	18.0	12,334	17.2	562	.8
2001	72,321	59,620	82.4	12,701	17.6	12,234	16.9	467	.6

[1]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 2001, these represented 353,000 households (0.3 percent of all households.)

[2]The food security survey measures food security status at the household level. Not all individuals residing in food-insecure households are appropriately characterized as food insecure. Similarly, not all individuals in households classified as food insecure with hunger nor all children in households classified as food insecure with hunger among children were subject to reductions in food intake or experienced resource-constrained hunger.

Sources: Calculated by ERS using data from the August 1998, April 1999, September 2000, and December 2001 Current Population Survey Food Security Supplements.

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

The prevalence of food insecurity and hunger varied considerably among household types (table 2). Rates of food insecurity were well below the national average of 10.7 percent for households with more than one adult and no children (6.0 percent) and for households with elderly persons (5.5 percent).[5] Rates of food insecurity substantially higher than the national average were registered by the following groups:

- households with incomes below the official poverty line (36.5 percent),[6]
- households with children, headed by a single woman (31.9 percent),
- Black households (21.3 percent), and
- Hispanic households (21.8 percent).

Overall, households with children reported food insecurity at more than double the rate for households without children (16.1 vs. 7.7 percent). Among households with children, those with married-couple families showed the lowest rate of food insecurity (10.7 percent).

[5]"Elderly" in this report refers to persons age 65 and older.
[6]The Federal poverty line was $17,960 for a family of four in 2001.

The prevalence of food insecurity for households located in central cities (13.9 percent) and nonmetropolitan areas (11.5 percent) substantially exceeded the rate for households in suburbs and other metropolitan areas outside central cities (8.3 percent). Regionally, the prevalence of food insecurity was higher in the South and West (12.3 and 11.9 percent, respectively) than in the Northeast and Midwest (8.2 and 9.0 percent).

The prevalence of hunger in various types of households followed a pattern similar to that observed for food insecurity. Hunger rates were lowest for married couples with children (2.1 percent), multiple-adult households with no children (2.1 percent), and households with elderly persons (1.5 percent). Hunger rates were higher than the 3.3 percent national average among families headed by single women (8.7 percent), Black and Hispanic households (6.2 and 5.4 percent, respectively), and households below the poverty line (12.9 percent). Geographically, hunger was more common in central-city households (4.8 percent) and in those in the South and West (3.6 and 3.7 percent, respectively).

Households showing the lowest rates of hunger among children were married-couple families, single male-headed households, and households with higher incomes (table 3). Children living with a single mother were more affected by resource-constrained hunger, as were Black and Hispanic children.

Table 2—Prevalence of food security, food insecurity, and hunger by selected household characteristics, 2001

Category	Total[1]	Food secure		Food insecure					
				All		Without hunger		With hunger	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
All households	107,824	96,303	89.3	11,521	10.7	8,010	7.4	3,511	3.3
Household composition									
With children < 18	38,330	32,141	83.9	6,189	16.1	4,744	12.4	1,445	3.8
With children < 6	16,850	13,912	82.6	2,938	17.4	2,306	13.7	632	3.8
Married-couple families	26,182	23,389	89.3	2,793	10.7	2,247	8.6	546	2.1
Female head, no spouse	9,080	6,185	68.1	2,895	31.9	2,101	23.1	794	8.7
Male head, no spouse	2,389	2,009	84.1	380	15.9	298	12.5	82	3.4
Other household with child[2]	678	555	81.9	123	18.1	99	14.6	24	3.5
With no children < 18	69,495	64,163	92.3	5,332	7.7	3,266	4.7	2,066	3.0
More than one adult	40,791	38,328	94.0	2,463	6.0	1,595	3.9	868	2.1
Women living alone	16,513	14,915	90.3	1,598	9.7	952	5.8	646	3.9
Men living alone	12,192	10,922	89.6	1,270	10.4	718	5.9	552	4.5
With elderly	24,836	23,458	94.5	1,378	5.5	1,002	4.0	376	1.5
Elderly living alone	10,390	9,758	93.9	632	6.1	426	4.1	206	2.0
Race/ethnicity of households									
White non-Hispanic	80,337	74,230	92.4	6,107	7.6	4,072	5.1	2,035	2.5
Black non-Hispanic	13,134	10,331	78.7	2,803	21.3	1,986	15.1	817	6.2
Hispanic[3]	9,864	7,717	78.2	2,147	21.8	1,613	16.4	534	5.4
Other non-Hispanic	4,489	4,026	89.7	463	10.3	339	7.6	124	2.8
Household income-to-poverty ratio									
Under 1.00	11,693	7,426	63.5	4,267	36.5	2,763	23.6	1,504	12.9
Under 1.30	16,904	11,450	67.7	5,454	32.3	3,609	21.3	1,845	10.9
Under 1.85	25,395	18,316	72.1	7,079	27.9	4,811	18.9	2,268	8.9
1.85 and over	63,851	60,743	95.1	3,108	4.9	2,284	3.6	824	1.3
Income unknown	18,579	17,245	92.8	1,334	7.2	915	4.9	419	2.3
Area of residence									
Inside metropolitan area	86,945	77,826	89.5	9,119	10.5	6,281	7.2	2,838	3.3
In central city[4]	26,701	22,987	86.1	3,714	13.9	2,442	9.1	1,272	4.8
Not in central city[4]	45,380	41,622	91.7	3,758	8.3	2,633	5.8	1,125	2.5
Outside metropolitan area	20,879	18,476	88.5	2,403	11.5	1,730	8.3	673	3.2
Census geographic region									
Northeast	20,320	18,656	91.8	1,664	8.2	1,176	5.8	488	2.4
Midwest	25,063	22,805	91.0	2,258	9.0	1,502	6.0	756	3.0
South	38,867	34,073	87.7	4,794	12.3	3,395	8.7	1,399	3.6
West	23,575	20,771	88.1	2,804	11.9	1,937	8.2	867	3.7

[1]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 2001, these represented 353,000 households (0.3 percent of all households.)
[2]Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.
[3]Hispanics may be of any race.
[4]Metropolitan area subtotals do not add to metropolitan area totals because central-city residence is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Table 3—Prevalence of food security, food insecurity, and hunger in households with children by selected household characteristics, 2001

Category	Total[1]	Food secure		Food insecure: All		Food insecure: Without hunger among children		Food insecure: With hunger among children	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
All households with children	38,330	32,141	83.9	6,189	16.1	5,978	15.6	211	0.6
Household composition:									
With children < 6	16,850	13,911	82.6	2,939	17.4	2,868	17.0	71	.4
Married-couple families	26,182	23,389	89.3	2,793	10.7	2,727	10.4	66	.3
Female head, no spouse	9,080	6,186	68.1	2,894	31.9	2,768	30.5	126	1.4
Male head, no spouse	2,389	2,009	84.1	380	15.9	365	15.3	15	.6
Other household with child[2]	678	556	82.0	122	18.0	118	17.4	4	.6
Race/ethnicity of households									
White non-Hispanic	25,088	22,261	88.7	2,827	11.3	2,772	11.0	55	.2
Black non-Hispanic	5,733	4,138	72.2	1,595	27.8	1,523	26.6	72	1.3
Hispanic[3]	5,560	4,094	73.6	1,466	26.4	1,397	25.1	69	1.2
Other non-Hispanic	1,949	1,648	84.6	301	15.4	286	14.7	15	.8
Household income-to-poverty ratio									
Under 1.00	5,630	3,127	55.5	2,503	44.5	2,381	42.3	122	2.2
Under 1.30	7,608	4,462	58.6	3,146	41.4	3,012	39.6	134	1.8
Under 1.85	11,719	7,477	63.8	4,242	36.2	4,068	34.7	174	1.5
1.85 and over	21,411	20,066	93.7	1,345	6.3	1,323	6.2	22	.1
Income unknown	5,200	4,598	88.4	602	11.6	587	11.3	15	.3
Area of residence									
Inside metropolitan area	31,238	26,269	84.1	4,969	15.9	4,771	15.3	198	.6
In central city[4]	8,978	6,988	77.8	1,990	22.2	1,871	20.8	119	1.3
Not in central city[4]	16,986	14,894	87.7	2,092	12.3	2,028	11.9	64	.4
Outside metropolitan area	7,091	5,871	82.8	1,220	17.2	1,207	17.0	13	.2
Census geographic region									
Northeast	6,864	6,041	88.0	823	12.0	783	11.4	40	.6
Midwest	8,737	7,586	86.8	1,151	13.2	1,115	12.8	36	.4
South	13,892	11,256	81.0	2,636	19.0	2,560	18.4	76	.5
West	8,836	7,257	82.1	1,579	17.9	1,520	17.2	59	.7
Individuals in households with children									
All individuals in households with children	153,562	128,593	83.7	24,969	16.3	24,073	15.7	896	.6
Adults in households with children	81,241	68,972	84.9	12,269	15.1	11,840	14.6	429	.5
Children	72,321	59,620	82.4	12,701	17.6	12,234	16.9	467	.6

[1]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 2001, these represented 148,000 households with children (0.4 percent.)

[2]Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

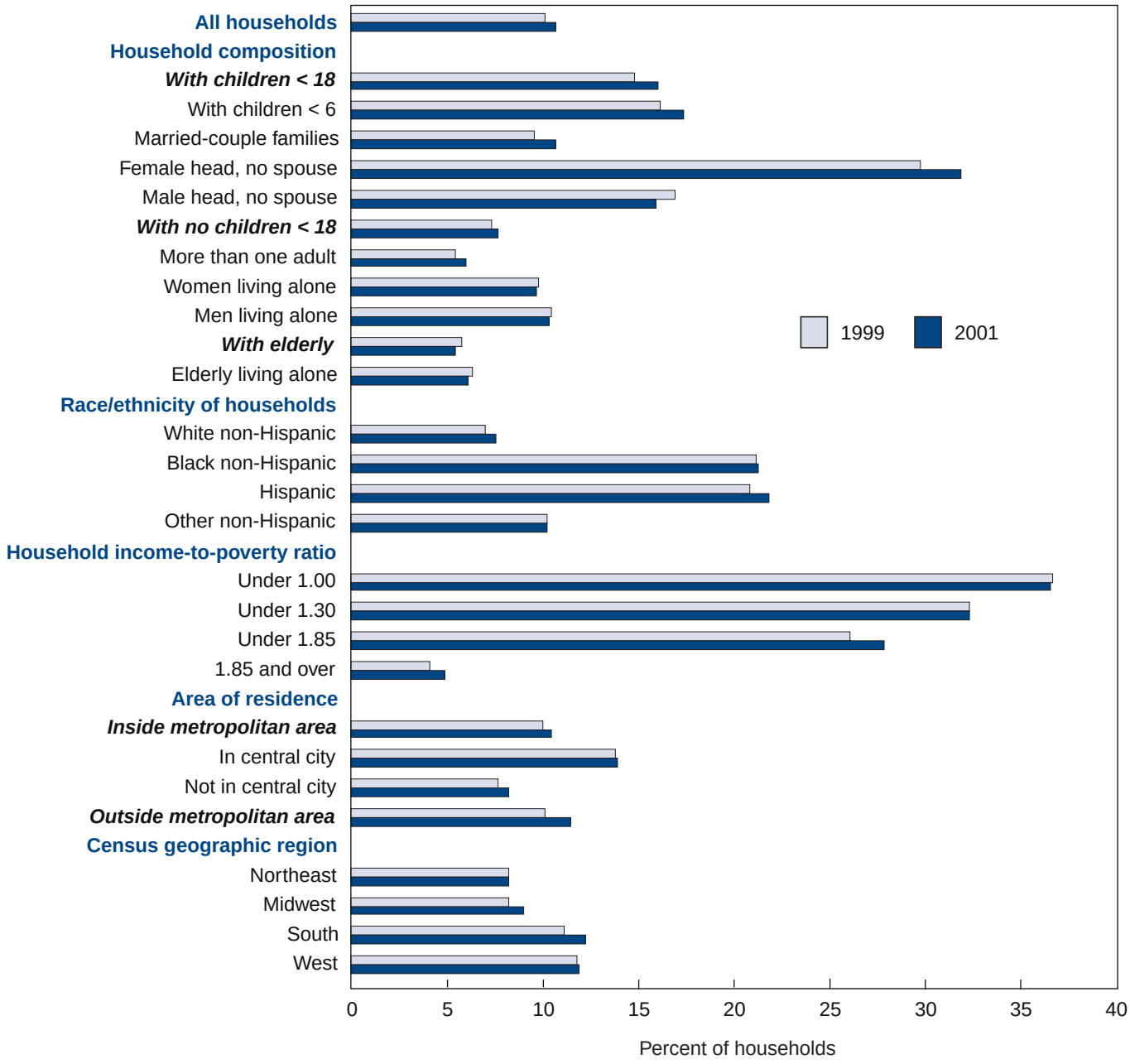
[3]Hispanics may be of any race.

[4]Metropolitan area subtotals do not add to metropolitan area totals because central-city residence is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

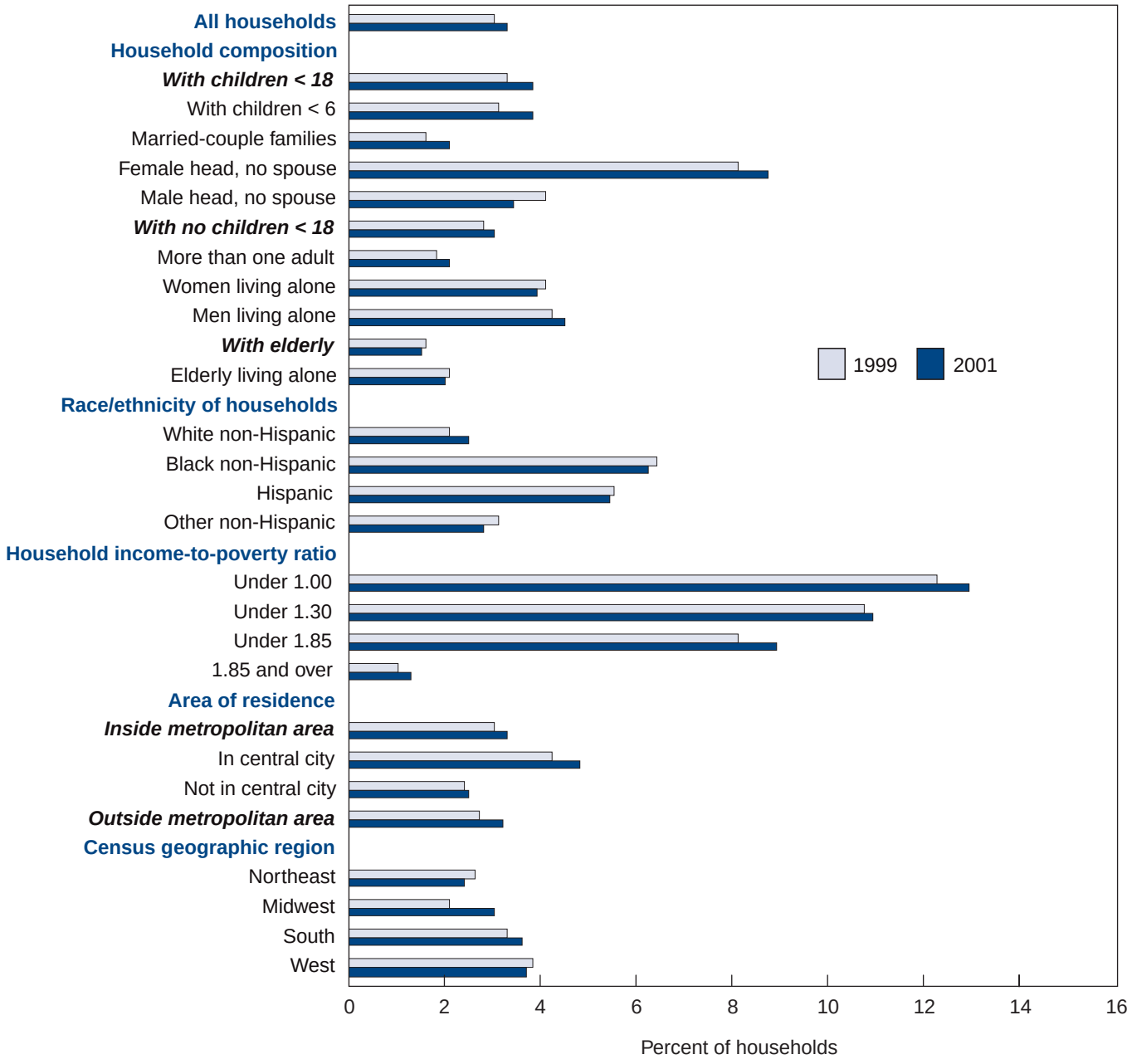
The increases in food insecurity and hunger from 1999 to 2001 appear to have affected most regions and types of households. The prevalence of food insecurity increased for all regions except the Northeast, and for all types of households except single fathers with children, individuals living alone, households with elderly, and households with incomes below 130 percent of the poverty line (fig. 2). Few of the changes were statistically significant, but except as noted, the observed rates of food insecurity increased for all groups analyzed. Changes in the prevalence of food insecurity with hunger were less consistent across household types, with small, statistically insignificant changes for most groups (fig. 3).

Figure 2
Prevalence of food insecurity, 1999 and 2001



Source: Calculated by ERS based on Current Population Survey Food Security Supplement data, April 1999 and December 2001.

Figure 3
Prevalence of hunger, 1999 and 2001



Source: Calculated by ERS based on Current Population Survey Food Security Supplement data, April 1999 and December 2001.

Food Insecurity and Hunger in Low-Income Households

Food insecurity and hunger, as reported here, are by definition conditions that result from insufficient household resources. In 2001, food insecurity was six times as prevalent, and hunger seven times as prevalent, in households with annual income below 185 percent of the poverty line as in households with income 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 hunger, even though their annual income was well above the poverty line (Gundersen and Gruber, 2001). On the other hand, many low-income households (including almost two-thirds of those with income below the official poverty line) were food secure.

Table 4 presents food security and hunger statistics for households with annual incomes below 130 percent of the poverty line.[7] Almost one-third of these low-income households were food insecure, and in 10.9 percent, household members experienced hunger at times during the year. Low-income households with children were more affected by food insecurity than households without children (41.4 percent vs. 24.8 percent), although the prevalence of hunger differed only slightly between the two categories. Low-income single mothers with children were especially vulnerable to both food insecurity and hunger; 45.5 percent of these households were food insecure, including 13.2 percent in which one or more persons, usually the mother, experienced hunger at times during the year because of lack of money or other resources for food.

[7]Households with income below 130 percent of the poverty line are eligible to receive food stamps, 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—Prevalence of food security, food insecurity, and hunger in households with income below 130 percent of the poverty line by selected household characteristics, 2001

Category	Total[1]	Food secure		Food insecure					
				All		Without hunger		With hunger	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
All low-income households	16,904	11,450	67.7	5,454	32.3	3,609	21.3	1,845	10.9
Household composition									
With children < 18	7,608	4,462	58.6	3,146	41.4	2,273	29.9	873	11.5
With children < 6	4,037	2,422	60.0	1,615	40.0	1,235	30.6	380	9.4
Married-couple families	3,080	1,879	61.0	1,201	39.0	901	29.3	300	9.7
Female head, no spouse	3,806	2,075	54.5	1,731	45.5	1,227	32.2	504	13.2
Male head, no spouse	523	367	70.2	156	29.8	109	20.8	47	9.0
Other household with child[2]	199	141	70.9	58	29.1	35	17.6	23	11.6
With no children < 18	9,296	6,988	75.2	2,308	24.8	1,336	14.4	972	10.5
More than one adult	3,888	3,046	78.3	842	21.7	507	13.0	335	8.6
Women living alone	3,475	2,594	74.6	881	25.4	518	14.9	363	10.4
Men living alone	1,933	1,347	69.7	586	30.3	312	16.1	274	14.2
With elderly	4,223	3,454	81.8	769	18.2	557	13.2	212	5.0
Elderly living alone	2,206	1,822	82.6	384	17.4	264	12.0	120	5.4
Race/ethnicity of households									
White non-Hispanic	9,116	6,600	72.4	2,516	27.6	1,581	17.3	935	10.3
Black non-Hispanic	3,750	2,226	59.4	1,524	40.6	1,026	27.4	498	13.3
Hispanic[3]	3,214	2,031	63.2	1,183	36.8	856	26.6	327	10.2
Other non-Hispanic	825	594	72.0	231	28.0	146	17.7	85	10.3
Area of residence									
Inside metropolitan area	12,644	8,519	67.4	4,125	32.6	2,705	21.4	1,420	11.2
In central city[4]	5,413	3,572	66.0	1,841	34.0	1,174	21.7	667	12.3
Not in central city[4]	4,548	3,102	68.2	1,446	31.8	953	21.0	493	10.8
Outside metropolitan area	4,260	2,931	68.8	1,329	31.2	904	21.2	425	10.0
Census geographic region									
Northeast	2,605	1,876	72.0	729	28.0	494	19.0	235	9.0
Midwest	3,519	2,476	70.4	1,043	29.6	658	18.7	385	10.9
South	6,909	4,556	65.9	2,353	34.1	1,580	22.9	773	11.2
West	3,871	2,541	65.6	1,330	34.4	877	22.7	453	11.7
Individuals in low-income households (by food security status of household)									
All individuals in low-income households	45,941	29,405	64.0	16,536	36.0	11,508	25.0	5,028	10.9
Adults in low-income households	29,577	20,042	67.8	9,535	32.2	6,391	21.6	3,144	10.6
Children in low-income households	16,364	9,363	57.2	7,001	42.8	5,117	31.3	1,884	11.5

[1]Totals exclude households whose income was not reported (about 17 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).
[2]Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.
[3]Hispanics may be of any race.
[4]Metropolitan area subtotals do not add to metropolitan area totals because central-city residence is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Number of Persons by Household Food Security Status and Household Type

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 estimates should not be used to characterize the number of individuals affected by food insecurity and hunger; not all persons in food-insecure households are food insecure. Similarly, people who live in households classified as food insecure with hunger, especially young children, are not all subject to reductions in food intake and do not all experience hunger.

In 2001, 33.6 million people lived in food-insecure households, up from 31.0 million in 1999 (table 1). They constituted 12.2 percent of the U.S. population and included 20.9 million adults and 12.7 million children. Of these individuals, 6.1 million adults and 3 million children lived in households where someone experienced hunger during the year. The number of children living in households classified as food insecure with hunger among children was 467,000 (0.6 percent of the children in the Nation; table 1). Tables 5 and 6 present estimates of the total number of *individuals* and the number of *children* in the households in each food security status and household type.

Table 5—Number of individuals by food security status of households and selected household characteristics, 2001

Category	Total[1]	Food secure		Food insecure					
				All		Without hunger		With hunger	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
All individuals in households	276,661	243,019	87.8	33,642	12.2	24,628	8.9	9,014	3.3
Household composition									
With children < 18	153,562	128,592	83.7	24,970	16.3	19,208	12.5	5,762	3.8
With children < 6	71,158	58,137	81.7	13,021	18.3	10,174	14.3	2,847	4.0
Married-couple families	112,206	98,938	88.2	13,268	11.8	10,602	9.4	2,666	2.4
Female head, no spouse	30,659	20,803	67.9	9,856	32.1	7,171	23.4	2,685	8.8
Male head, no spouse	8,004	6,630	82.8	1,374	17.2	1,064	13.3	310	3.9
Other household with child[2]	2,692	2,221	82.5	471	17.5	370	13.7	101	3.8
With no children < 18	123,099	114,427	93.0	8,672	7.0	5,420	4.4	3,252	2.6
More than one adult	94,395	88,591	93.9	5,804	6.1	3,749	4.0	2,055	2.2
Women living alone	16,513	14,915	90.3	1,598	9.7	952	5.8	646	3.9
Men living alone	12,192	10,922	89.6	1,270	10.4	718	5.9	552	4.5
With elderly	47,346	44,310	93.6	3,036	6.4	2,267	4.8	769	1.6
Elderly living alone	10,390	9,758	93.9	632	6.1	426	4.1	206	2.0
Race/ethnicity of households									
White non-Hispanic	195,167	179,329	91.9	15,838	8.1	11,296	5.8	4,542	2.3
Black non-Hispanic	34,532	26,547	76.9	7,985	23.1	5,899	17.1	2,086	6.0
Hispanic[3]	33,920	25,682	75.7	8,238	24.3	6,268	18.5	1,970	5.8
Other non-Hispanic	13,042	11,460	87.9	1,582	12.1	1,165	8.9	417	3.2
Household income-to-poverty ratio									
Under 1.00	32,202	19,320	60.0	12,882	40.0	8,745	27.2	4,137	12.8
Under 1.30	45,941	29,405	64.0	16,536	36.0	11,508	25.0	5,028	10.9
Under 1.85	69,784	48,004	68.8	21,780	31.2	15,566	22.3	6,214	8.9
1.85 and over	162,430	154,424	95.1	8,006	4.9	6,222	3.8	1,784	1.1
Income unknown	44,446	40,590	91.3	3,856	8.7	2,840	6.4	1,016	2.3
Area of residence									
Inside metropolitan area	224,772	197,722	88.0	27,050	12.0	19,606	8.7	7,444	3.3
In central city[4]	66,314	55,104	83.1	11,210	16.9	7,806	11.8	3,404	5.1
Not in central city[4]	120,609	109,403	90.7	11,206	9.3	8,287	6.9	2,919	2.4
Outside metropolitan area	51,888	45,296	87.3	6,592	12.7	5,022	9.7	1,570	3.0
Census geographic region									
Northeast	52,121	47,503	91.1	4,618	8.9	3,505	6.7	1,113	2.1
Midwest	63,498	57,247	90.2	6,251	9.8	4,483	7.1	1,768	2.8
South	97,558	83,958	86.1	13,600	13.9	10,014	10.3	3,586	3.7
West	63,483	54,309	85.5	9,174	14.5	6,627	10.4	2,547	4.0

[1]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 2001, these represented 951,000 individuals (0.3 percent of all individuals.)

[2]Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

[3]Hispanics may be of any race.

[4]Metropolitan area subtotals do not add to metropolitan area totals because central-city residence is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Table 6—Number of children by food security status of households and selected household characteristics, 2001

Category	Total[1]	Food secure		Food insecure: All		Food insecure: Without hunger among children		Food insecure: With hunger among children	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
All children	72,321	59,620	82.4	12,701	17.6	12,234	16.9	467	0.6
Household composition									
With children < 6	35,818	28,857	80.6	6,961	19.4	6,770	18.9	191	.5
Married-couple families	51,347	44,894	87.4	6,453	12.6	6,311	12.3	142	.3
Female head, no spouse	16,170	10,753	66.5	5,417	33.5	5,135	31.8	282	1.7
Male head, no spouse	3,699	3,066	82.9	633	17.1	600	16.2	33	.9
Other household with child[2]	1,105	907	82.1	198	17.9	188	17.0	10	.9
Race/ethnicity of households									
White non-Hispanic	45,852	40,410	88.1	5,442	11.9	5,332	11.6	110	.2
Black non-Hispanic	10,825	7,620	70.4	3,205	29.6	3,049	28.2	156	1.4
Hispanic[3]	11,961	8,544	71.4	3,417	28.6	3,257	27.2	160	1.3
Other non-Hispanic	3,683	3,045	82.7	638	17.3	597	16.2	41	1.1
Household income-to-poverty ratio									
Under 1.00	12,273	6,636	54.1	5,637	45.9	5,322	43.4	315	2.6
Under 1.30	16,364	9,364	57.2	7,000	42.8	6,662	40.7	338	2.1
Under 1.85	24,609	15,483	62.9	9,126	37.1	8,709	35.4	417	1.7
1.85 and over	38,048	35,750	94.0	2,298	6.0	2,267	6.0	31	.1
Income unknown	9,663	8,385	86.8	1,278	13.2	1,258	13.0	20	.2
Area of residence									
Inside metropolitan area	59,136	48,890	82.7	10,246	17.3	9,807	16.6	439	.7
In central city[4]	17,239	12,884	74.7	4,355	25.3	4,085	23.7	270	1.6
Not in central city[4]	32,105	27,988	87.2	4,117	12.8	3,984	12.4	133	.4
Outside metropolitan area	13,185	10,730	81.4	2,455	18.6	2,427	18.4	28	.2
Census geographic region									
Northeast	13,179	11,439	86.8	1,740	13.2	1,636	12.4	104	.8
Midwest	16,901	14,530	86.0	2,371	14.0	2,281	13.5	90	.5
South	24,885	19,924	80.1	4,961	19.9	4,806	19.3	155	.6
West	17,356	13,726	79.1	3,630	20.9	3,511	20.2	119	.7

[1]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 2001, these represented 306,000 children (0.4 percent.)
[2]Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.
[3]Hispanics may be of any race.
[4]Metropolitan area subtotals do not add to metropolitan area totals because central-city residence is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Prevalence of Food Insecurity and Hunger by State, 1999-2001

Prevalence rates of food insecurity and hunger varied considerably from State to State. Data for 3 years, 1999-2001, were combined to provide more reliable statistics at the State level (table 7). Measured prevalence rates of food insecurity during this 3-year period ranged from 6.5 percent in New Hampshire to 14.6 percent in New Mexico; measured prevalence rates of hunger ranged from 1.5 percent in Virginia to 5.8 percent in Oregon.

The margins of error for the State prevalence rates should be taken into consideration when interpreting these statistics and especially when comparing across States. Margins of error reflect sampling variation—the uncertainty associated with estimates that are based on information from only 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 certain to fall. In some States, margins of error were nearly 2 percentage points for estimated prevalence rates of food insecurity and larger than 1 percentage point for estimated prevalence rates of hunger. For example, the prevalence rate of food insecurity in New Mexico was 14.6 percent, plus or minus 1.75 percentage points. Considering the margin of error, it is not clear (statistically significant) that the rate of food insecurity in New Mexico was higher than that of the States with the next 10 highest prevalence rates of food insecurity.

These State-level food security statistics cannot be compared directly with those published previously by ERS in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999) because of changes over the years in screening procedures used to reduce respondent burden in the CPS food security surveys. Appendix D provides prevalence rates for the earlier period that have been adjusted for these screening differences so as to be comparable with those for 1999-2001.

Table 7—Prevalence of household-level food insecurity and hunger by State, average 1999-2001[1]

State	Number of households: Average 1999-2001[2]	Number of households: Interviewed	Food insecure (with or without hunger): Prevalence	Food insecure (with or without hunger): Margin of error[3]	Food insecure with hunger: Prevalence	Food insecure with hunger: Margin of error[3]
	Number		*Percent*	*Percentage points*	*Percent*	*Percentage points*
U.S. total	106,184,000	125,748	10.4	0.28	3.1	0.10
AK	221,000	1,504	11.1	1.48	4.3	1.00
AL	1,718,000	1,859	11.9	1.23	3.9	.8
AR	1,031,000	1,675	12.8	1.69	3.9	1.06
AZ	1,866,000	1,826	11.6	1.47	3.6	.75
CA	12,206,000	9,099	11.8	.76	3.3	.42
CO	1,605,000	2,101	8.6	1.16	2.5	.65
CT	1,316,000	1,664	6.8	1.07	2.6	.66
DC	261,000	1,509	9.8	1.18	2.9	.73
DE	293,000	1,333	7.3	1.47	2.1	.78
FL	6,267,000	5,979	12.2	1.00	4.0	.54
GA	2,966,000	1,808	11.6	.98	3.9	.80
HI	417,000	1,217	10.8	1.83	3.0	.95
IA	1,157,000	1,904	7.6	1.15	2.2	.61
ID	471,000	1,812	13.0	1.87	4.5	.61
IL	4,592,000	4,797	9.2	1.00	2.7	.45
IN	2,413,000	2,031	8.5	1.17	2.5	.54
KS	1,071,000	1,940	11.3	1.56	3.2	.81
KY	1,570,000	1,745	10.1	1.35	3.0	.71
LA	1,685,000	1,529	13.2	1.61	3.0	.56
MA	2,372,000	2,680	6.7	1.34	2.0	.70
MD	2,061,000	1,788	8.8	1.32	3.1	.85
ME	538,000	1,816	9.4	1.07	3.1	.65
MI	3,815,000	3,996	8.1	.89	2.4	.44
MN	1,846,000	2,083	7.1	.85	2.0	.76
MO	2,173,000	1,765	8.6	1.39	2.3	.59
MS	1,076,000	1,487	13.1	1.47	3.7	1.02
MT	360,000	1,736	13.2	1.25	4.0	.79
NC	3,070,000	3,017	11.1	1.14	3.3	.64
ND	264,000	2,021	8.5	1.08	2.2	.55
NE	647,000	1,923	9.9	1.51	2.9	.74
NH	483,000	1,679	6.5	1.04	1.9	.59
NJ	3,065,000	3,333	7.8	.84	2.4	.61
NM	674,000	1,583	14.6	1.75	4.2	.84
NV	691,000	1,944	10.1	.97	3.4	.68
NY	6,978,000	6,914	9.6	.64	3.1	.39
OH	4,574,000	4,658	9.1	.69	2.8	.35
OK	1,355,000	1,875	12.9	1.54	3.8	.62
OR	1,305,000	1,749	13.7	1.19	5.8	.87
PA	4,744,000	5,103	8.4	.61	2.2	.37
RI	397,000	1,683	8.7	1.41	2.5	.58
SC	1,588,000	1,509	11.3	1.36	3.6	1.09
SD	293,000	1,944	7.9	1.12	1.9	.51
TN	2,147,000	1,589	11.8	1.29	3.4	.64
TX	7,456,000	5,609	13.9	1.11	3.6	.53
UT	691,000	1,528	13.8	1.41	4.6	.90
VA	2,722,000	1,977	7.6	1.30	1.5	.57
VT	243,000	1,519	9.1	1.42	1.8	.56
WA	2,329,000	1,959	12.5	1.44	4.6	.97
WI	2,129,000	2,208	8.4	1.10	2.9	.59
WV	776,000	1,916	10.3	1.12	3.3	.62
WY	198,000	1,825	9.9	1.68	3.2	.79

[1]Prevalence rates for 1996-98 reported in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 2000) 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 appendix D.

[2]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.

[3]Margin of error with 90 percent confidence (1.645 times the standard error of the estimated prevalence rate).

Source: Prepared by ERS based on Current Population Survey Food Security Supplement data, April 1999, September 2000, and December 2001.

Section 2. Household Spending on Food

This section provides information on how much households spent on food, as reported in the December 2001 food security survey. Food insecurity is a condition that arises specifically 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 it is meeting its food needs.[8] When households reduce food spending 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.[9] Respondents were first asked about the actual amount of money their households spent on food in the week prior to the interview (including any purchases made with food stamps) at: (1) supermarkets and grocery stores; (2) stores other than supermarkets and grocery stores such as meat markets, produce stands, bakeries, warehouse clubs, and convenience stores; (3) restaurants, fast food places, cafeterias, and vending machines; and (4) any other kind of place.[10] 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. 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 of specific ages and genders 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.[11] Each household's reported usual weekly food spending was divided by the cost of the Thrifty Food Plan for that household, based on the age and gender of each household member and the number of persons in the household (see appendix table C-1).

[8]Food spending is, however, 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 food stamps, 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.

[9]In CPS food security surveys that asked about both actual and usual food spending per week, median actual food spending was higher than median usual food spending. This finding was consistent across the various years in which the survey was conducted and across different household types. The reasons for this difference are under study. Pending outcomes of this research, analysts should be aware of a possible downward bias on food spending statistics based on "usual" food spending data.

[10]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, detergents, or cleaning supplies." These amounts are not included in calculating spending for food.

[11]The Thrifty Food Plan, in addition to its use as a research tool, is used as a basis for setting the maximum benefit amounts of the Food Stamp Program. (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.)

The median of each of the two food spending measures was calculated at the national level and for households in various categories to represent the usual weekly food spending—per person, and relative to the cost of the Thrifty Food Plan—of the typical household in each category. Medians are reported rather than averages 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 Census Bureau so that the interviewed households would represent all households in the United States. About 6 percent of households interviewed in the CPS food security survey did not respond to the food spending questions and were excluded from the analysis. As a result, the total number of households represented in tables 8 and 9 is somewhat smaller than that in tables 1 and 2.

Food Expenditures by Selected Household Characteristics

In 2001, the typical U.S. household spent $37.50 per person each week for food (table 8). Median household food spending relative to the cost of the Thrifty Food Plan was 1.32. That is, the typical household usually spent 32 percent more on food than the cost of the Thrifty Food Plan for its household type.

Households with children under age 18 generally spent less for food, relative to the Thrifty Food Plan, than those without children. The typical household with children spent 17 percent more than the cost of the Thrifty Food Plan, while the typical household with no children spent 44 percent more than the cost of the Thrifty Food Plan. Median food expenditures relative to the Thrifty Food Plan were lower for single females with children (1.06) and for single males with children (1.16) than for married couples with children (1.21). Median food expenditures relative to the Thrifty Food Plan were highest for men living alone (1.68).

Median food expenditures relative to the Thrifty Food Plan were lower for Black households (1.10) and Hispanic households (1.15) than for non-Hispanic White households (1.38). This finding 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.[12] The typical household with income below the poverty line spent about 6 percent less than the cost of the Thrifty Food Plan, while the typical household with income above 185 percent of the poverty line spent 47 percent more than the cost of the Thrifty Food Plan.

Median relative food spending of households outside metropolitan areas was 1.14, compared with 1.37 for households inside metropolitan areas. Median spending on food by households in the Midwest and South (1.25 and 1.28, respectively) was slightly lower than that for households in the Northeast (1.40) and West (1.38).

[12]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 8—Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP), 2001

Category	Number of households[1]	Median weekly food spending	
		Per person	Relative to TFP
	1,000	*Dollars*	*Ratio*
All households	101,720	37.50	1.32
Household composition			
With children < 18	36,856	30.00	1.17
At least one child < 6	16,356	26.67	1.16
Married-couple families	25,245	31.00	1.21
Female head, no spouse	8,710	26.67	1.06
Male head, no spouse	2,262	30.00	1.16
Other household with child[2]	640	28.00	1.10
With no children < 18	64,864	45.00	1.44
More than one adult	38,287	40.00	1.35
Women living alone	15,202	45.00	1.41
Men living alone	11,374	58.00	1.68
With elderly	22,516	37.50	1.25
Elderly living alone	9,280	40.00	1.25
Race/ethnicity of households			
White non-Hispanic	75,915	40.00	1.38
Black non-Hispanic	12,222	30.00	1.10
Hispanic[3]	9,355	30.00	1.15
Other non-Hispanic	4,228	37.50	1.32
Household income-to-poverty ratio			
Under 1.00	11,207	25.00	.94
Under 1.30	16,141	26.67	.95
Under 1.85	24,295	28.00	1.00
1.85 and over	61,661	41.75	1.47
Income unknown	15,764	37.50	1.29
Area of residence			
Inside metropolitan area	81,822	40.00	1.37
In central city[4]	25,051	40.00	1.36
Not in central city[4]	42,623	40.00	1.41
Outside metropolitan area	19,898	33.33	1.14
Census geographic region			
Northeast	18,832	40.00	1.40
Midwest	23,675	36.67	1.25
South	36,835	37.50	1.28
West	22,378	40.00	1.38

[1]Totals exclude households that did not answer the questions about spending on food. These represented 6 percent of all households.
[2]Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.
[3]Hispanics may be of any race.
[4]Metropolitan area subtotals do not add to metropolitan area totals because central-city residence is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

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 1.35 among food-secure households, compared with 1.02 among households classified as food insecure without hunger and 1.01 among those classified as food insecure with hunger (table 9). Thus, the typical food-secure household spent 32 percent more for food than the typical household of the same size and composition that was food insecure with hunger. Just over half of the households that were food insecure with hunger usually spent an amount on food at or above the national average cost of the Thrifty Food Plan.

The relationship between food expenditures and food security was consistent across household structure, race/ethnicity, income, metropolitan residence, and geographic region (table 10). For food-secure households, median food spending for every household type except those with incomes below 130 percent of the poverty line was higher than the cost of the Thrifty Food Plan. Furthermore, for every household type, median food spending relative to the Thrifty Food Plan was higher for food-secure than 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 the typical households in most categories were close to the cost of the Thrifty Food Plan, but there were some notable exceptions. Food-insecure individuals living alone—both women and men—spent substantially more on food than the cost of the Thrifty Food Plan for their age and gender—11 percent more for women living alone and 32 percent more for men living alone. Food-insecure households with incomes above 185 percent of the poverty line also registered median food expenditures much higher than the cost of the Thrifty Food Plan.[13]

[13]Analysis by ERS (Nord et al., 2000) has found that the experiences of food insecurity of higher and middle-income households are, disproportionately, occasional and of short duration. 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 9—Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP) by food security status, 2001

Category	Number of households[1]	Median weekly food spending	
		Per person	Relative to TFP
	1,000	*Dollars*	*Ratio*
All households	101,720	37.50	1.32
Food security status			
Food secure	90,383	40.00	1.35
Food insecure	11,104	28.57	1.02
Without hunger	7,745	28.33	1.02
With hunger	3,358	30.00	1.01

[1]Total for all households excludes households that did not answer the questions about spending on food. These represented 6 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 2001 Current Population Survey Food Security Supplement.

Table 10—Median weekly household food spending relative to the cost of the Thrifty Food Plan (TFP) by food security status and selected household characteristics, 2001

Category	Food secure	Food insecure
	Ratio[1]	
All households	1.35	1.02
Household composition		
With children < 18	1.21	.96
At least one child < 6	1.20	.98
Married couple families	1.24	.94
Female head, no spouse	1.12	1.00
Male head, no spouse	1.20	.97
Other household with child[2]	1.13	NA
With no children < 18	1.47	1.12
More than one adult	1.41	1.02
Women living alone	1.47	1.11
Men living alone	1.68	1.32
With elderly	1.25	.94
Elderly living alone	1.25	.94
Race/ethnicity of households		
White non-Hispanic	1.41	1.05
Black non-Hispanic	1.13	.98
Hispanic[3]	1.21	.98
Other non-Hispanic	1.37	.95
Household income-to-poverty ratio		
Under 1.00	1.00	.92
Under 1.30	.99	.92
Under 1.85	1.02	.94
1.85 and over	1.49	1.23
Income unknown	1.34	1.02
Area of residence		
Inside metropolitan area	1.41	1.04
In central city	1.41	1.06
Not in central city	1.44	1.09
Outside metropolitan area	1.19	.92
Census geographic region		
Northeast	1.43	1.12
Midwest	1.27	1.00
South	1.34	.97
West	1.44	1.04

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

[1]Statistics exclude households that did not answer the questions about spending on food and those that did not provide valid responses to any of the questions on food security. These represented 6.2 percent of all households.

[2]Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

[3]Hispanics may be of any race.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Section 3. Use of Federal and Community Food 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 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 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 the food security status and use of food assistance programs by these households 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 programs and the two most common community food programs. (See box, "Federal and Community Food Assistance Programs.") 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. Participation rates in the Federal food assistance 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.[14]

Methods

The December 2001 CPS food security survey included a number of questions about the use of Federal and community-based food 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. 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 what month did your household last receive food stamp benefits?" If benefits were received in the month of the survey or the previous month, respondents were asked, "On what date did your household last receive your monthly food stamps?" Information from these three questions was combined to identify households that received food stamps in the 30 days prior to the survey.
- "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 age 0-5 or a woman age 15-45 were asked this question.)
- "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 discussion below 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.

[14]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 http://www.fns.usda.gov. Additional research findings on the operation and effectiveness of these programs are available from the ERS web site at http://www.ers.usda.gov/briefing/foodnutritionassistance.

Federal and Community Food Assistance Programs

Federal Food Assistance Programs

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

- The Food Stamp Program (FSP) provides benefits, through electronic benefit transfer (EBT) or paper coupons, to eligible low-income households. Clients qualify for the program based on available household income, assets, and certain basic expenses. Food stamps can be used to purchase food from eligible retailers. In an average month of fiscal year 2001, the FSP provided benefits to 17.3 million people in the United States, totaling over $15 billion for the year. The average benefit was $75 per person per month.
- The National School Lunch Program (NSLP) operates in more than 99,000 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 2001, the program provided lunches to an average of 27 million children each school day. About 57 percent of the lunches served in 2001 were free or reduced-price.
- WIC (The Special Supplemental Nutrition Program for Women, Infants, and Children) 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 under 5 in low-income families 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 2001, WIC served an average 7.3 million participants per month with an average monthly benefit of $34 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 2000, TEFAP supplied 422 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 12 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 off-site use. An estimated 32,737 pantries operated in 2000 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.

Prevalence rates of food security, food insecurity, and hunger, as well as median food expenditures relative to the cost of the Thrifty Food Plan, were calculated for households reporting use of each food assistance program or facility and for comparison groups of nonparticipating households with incomes and household compositions similar to those of program participants. Statistics for participating households excluded households with incomes above the ranges specified for the comparison groups.[15] The proportions of food-insecure households participating in each of the three largest Federal food assistance programs 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 the proportions of households in selected categories that used food pantries were calculated. Households that had incomes above 185 percent of the poverty line and gave no indication of food insecurity on either of two preliminary screener questions were not asked whether they had used food pantries and emergency kitchens; it was assumed that they did not. Analysis (not shown) indicated that this assumption resulted in negligible downward bias to estimated participation rates.

Estimates of emergency kitchen use from 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) may also be missed. 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.[16] Therefore, detailed analyses in this section focus primarily on the use of food pantries.

Finally, proportions were calculated of households participating in the three largest Federal food programs who also obtained food from food pantries and emergency kitchens. 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 Census Bureau, are based on sampling probabilities and enable the interviewed households to statistically represent all civilian households in the United States.

[15]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.

[16]Previous studies of emergency kitchen users and food pantry users confirm these assumptions. A survey of clients of emergency food providers affiliated with America's Second Harvest found that more than one-fourth of emergency kitchen users were homeless, while this was true of less than 5 percent of food pantry users (America's Second Harvest, 1998, p. 118). Analysis of information from a nationally representative survey of people who use food pantries and emergency kitchens, conducted in 2001 under an ERS contract, will provide a more complete and representative picture of this population, including the extent of homelessness among them.

Food Security and Food Spending of Households That Received Food Assistance

The relationship between food assistance program use and food security is complex. There are reasons to expect that households observed to be using food assistance programs in a one-time survey can either be more or less food secure than low-income households not using food assistance. Since these programs provide food and other resources to reduce the risk of hunger, participating households can be expected to be more food secure. On the other hand, it is the more food-insecure households, having greater difficulty meeting their food needs, that seek assistance from the programs.[17] More than half of food stamp households, and nearly half of the households that received free or reduced-cost school lunches or WIC, were food insecure (table 11). The prevalence of hunger among households participating in the Food Stamp Program or receiving free or reduced-cost school lunches was about twice that of nonparticipating households in the same income ranges and with similar household composition. About 70 percent of households that obtained emergency food from community food pantries were food insecure, and almost one-third were food insecure with hunger. For those who ate meals at emergency kitchens, rates of food insecurity and hunger were even higher.

[17]This "self-targeting" 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 especially Gundersen and Oliveira, 2001; Gundersen and Gruber, 2001; Nelson and Lurie, 1998).

Table 11—Prevalence rates of food security, food insecurity, and hunger by participation in selected Federal and community food assistance programs, 2001

Category	Food secure	Food insecure		
		All	Without hunger	With hunger
		Percent		
Income less than 130 percent of poverty line				
Received food stamps previous 30 days	47.5	52.5	33.4	19.1
Did not receive food stamps previous 30 days	72.5	27.5	18.5	9.0
Income less than 185 percent of poverty line; school-age children in household				
Received free or reduced-price school lunch previous 30 days	55.0	45.0	31.9	13.1
Did not receive free or reduced-price school lunch previous 30 days	74.9	25.1	19.4	5.7
Income less than 185 percent of poverty line; children under age 5 in household				
Received WIC previous 30 days	57.4	42.6	33.0	9.6
Did not receive WIC previous 30 days	69.0	31.0	23.8	7.3
Income less than 185 percent of poverty line				
Received emergency food from food pantry previous 12 months	30.3	69.7	38.0	31.7
Did not receive emergency food from food pantry previous 12 months	78.7	21.3	15.3	6.0
Ate meal at emergency kitchen previous 12 months	28.5	71.5	28.8	42.7
Did not eat meal at emergency kitchen previous 12 months	75.2	24.8	17.1	7.7

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Households that received food assistance also spent substantially less for food than nonrecipient households (table 12).[18] Typical (median) food expenditures of households that received food stamps were 92 percent of the cost of the Thrifty Food Plan.[19] The corresponding statistics were 88 percent for households receiving free or reduced-price school lunches, 90 percent for households receiving WIC, and 92 percent for households that received emergency food from food pantries. Typical food expenditures for nonparticipating households in these income ranges were near the cost of the Thrifty Food Plan.

[18]Food purchased with food stamps 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.

[19]The maximum benefit for food stamp households is equal to the cost of the Thrifty Food Plan. About 20 percent of the FSP caseload receives the maximum benefit. Households with countable income receive less.

Table 12—Median weekly household food spending relative to the cost of the Thrifty Food Plan (TFP) by participation in selected Federal and community food assistance programs, 2001

Category	Ratio
Income less than 130 percent of poverty line	
Received food stamps previous 30 days	0.92
Did not receive food stamps previous 30 days	.98
Income less than 185 percent of poverty line; school-age children in household	
Received free or reduced-price school lunch previous 30 days	.88
Did not receive free or reduced-price school lunch previous 30 days	.99
Income less than 185 percent of poverty line; children under age 5 in household	
Received WIC previous 30 days	.90
Did not receive WIC previous 30 days	1.00
Income less than 185 percent of poverty line	
Received emergency food from food pantry previous 12 months	.92
Did not receive emergency food from food pantry previous 12 months	1.04

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Participation in Federal Food Assistance Programs by Food-Insecure Households

About half (51.5 percent) of food-insecure households received assistance from at least one of the three largest Federal food assistance programs during the month prior to the December 2001 food security survey (table 13). The largest share of food-insecure households was reached by the National School Lunch Program (33.4 percent), followed by the Food Stamp Program (25.1 percent) and the WIC program (13.4 percent).[20] The pattern of program participation by households classified as food insecure with hunger was similar to that of all food-insecure households, with 51.1 percent of these more severely food-insecure households participating in one or more of the three largest Federal food assistance programs.

[20]These statistics may be biased downward somewhat. It is known from comparisons of administrative records and household survey data 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 th poverty line. Not all these households were eligible for certain if 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).

Table 13—Participation of food-insecure households in selected Federal food assistance programs, 2001

Program	Share of food-insecure households that participated in the program during the previous 30 days[1]	Share of food-insecure-with-hunger households that participated in the program during the previous 30 days[1]
	Percent	
Food stamps	25.1	28.5
Free or reduced-price school lunch	33.4	30.0
WIC	13.4	10.3
Any of the three programs	51.5	51.1
None of the three programs	48.5	48.9

[1]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.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Use of Food Pantries and Emergency Kitchens

Some 3 million households (2.8 percent of all households) obtained food from food pantries one or more times during the 12-month period ending in December 2001 (table 14). A much smaller number—461,000 households (0.4 percent)—had members who ate one or more meals at an emergency kitchen. Households that obtained food from food pantries included 5.3 million adults and 3.5 million children. Fifty percent of households that reported having obtained food from a food pantry in the last 12 months reported that this had occurred in only 1 or 2 months; 20 percent reported that it had occurred in almost every month; and the remaining 30 percent reported that it had occurred in "some months, but not every month."

Table 14—Use of food pantries and emergency kitchens, 2001

Category	Pantries			Kitchens		
	Total[1]	Users		Total[1]	Users	
	1,000	*1,000*	*Percent*	*1,000*	*1,000*	*Percent*
All households	107,576	3,031	2.8	107,591	461	0.43
All persons in households	275,924	8,782	3.2	276,024	996	.36
Adults in households	203,840	5,310	2.6	203,907	723	.35
Children in households	72,083	3,473	4.8	72,117	273	.38
Food security status						
Food secure	96,099	904	.9	96,090	145	.15
Food insecure	11,394	2,124	18.6	11,411	316	2.77
Without hunger	7,936	1,114	14.0	7,947	132	1.66
With hunger	3,458	1,011	29.2	3,464	183	5.28

[1]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 2001 Current Population Survey Food Security Supplement.

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 21 times more likely than food-secure households to have obtained food from a food pantry, and 18 times more likely than food-secure households to have eaten a meal at an emergency kitchen. Furthermore, among food-insecure households, those registering hunger were more than twice as likely to have used a food pantry and three times as likely to have used an emergency kitchen as those that were food insecure without hunger.

The large majority of food-insecure households, and even of households that were food insecure with hunger, 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, 28 percent reported that there was no such resource in their community, and an additional 19 percent said they did not know if there was. Nevertheless, even among food-insecure households that knew there was a food pantry in their community, only 30 percent availed themselves of it.

About 30 percent of households that used food pantries and emergency kitchens were classified as food secure. Over half (58 percent) of these food-secure households did report some concerns or difficulties in obtaining enough food by responding positively to 1 or 2 of the 18 indicators of food insecurity. (A household must report occurrence of at least three of the indicators to be classified as food insecure; see appendix A.) The proportions using food pantries and emergency kitchens were much higher among households that reported one or two indicators of food insecurity than among households that reported none—15 times as high for food pantry use and 6 times as high for use of emergency kitchens.

Use of Food Pantries by Selected Household Characteristics

The use of food pantries varied considerably by household structure and by race and ethnicity (table 15). Households with children were twice as likely as those without children to use food pantries (4.3 percent compared with 2.0 percent). Food pantry use was especially high among female-headed households with children (9.4 percent), while use by married couples with children (2.5 percent) was lower than the national average. Few households with elderly members used food pantries (1.9 percent). Use of food pantries was higher among Blacks (6.1 percent) and Hispanics (4.5 percent) than among non-Hispanic Whites (2.1 percent), consistent with the higher rates of poverty, food insecurity, and hunger of these minorities. In spite of their lower use rate, non-Hispanic Whites comprised a majority (56 percent) of food-pantry users.

About 14 percent of households with incomes below the poverty line received food from food pantries, compared with 0.6 percent of households with incomes above 185 percent of the poverty line.[21] Among households with incomes above the poverty line but below 185 percent of the poverty line, 706,000 used food pantries in 2001, comprising 23 percent of all households using food pantries and 5.2 percent of households in that income range.

Use of food pantries was higher in central cities (3.5 percent) and in nonmetropolitan areas (3.6 percent) than in metropolitan areas outside of central cities (1.9 percent). There was not a large regional variation in the use of food pantries, although use was somewhat more common in the West, where 3.5 percent of households used the pantries.

[21]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. 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 15—Use of food pantries by selected household characteristics, 2001

Category	Total[1]	Pantry users	
	1,000	*1,000*	*Percent*
All households	107,576	3,031	2.8
Household composition			
With children < 18	38,200	1,636	4.3
At least one child < 6	16,800	761	4.5
Married-couple families	26,113	647	2.5
Female head, no spouse	9,036	851	9.4
Male head, no spouse	2,370	104	4.4
Other household with child[2]	681	35	5.1
With no children < 18	69,376	1,395	2.0
More than one adult	40,740	578	1.4
Women living alone	16,483	492	3.0
Men living alone	12,153	325	2.7
With elderly	24,775	483	1.9
Elderly living alone	10,365	251	2.4
Race/ethnicity of households			
White non-Hispanic	80,238	1,683	2.1
Black non-Hispanic	13,060	792	6.1
Hispanic[3]	9,796	444	4.5
Other non-Hispanic	4,482	113	2.5
Household income-to-poverty ratio			
Under 1.00	11,629	1,658	14.3
Under 1.30	16,816	1,983	11.8
Under 1.85	25,273	2,364	9.4
1.85 and over	63,774	411	.6
Income unknown	18,529	255	1.4
Area of residence			
Inside metropolitan area	86,708	2,278	2.6
In central city[4]	26,632	928	3.5
Not in central city[4]	45,243	869	1.9
Outside metropolitan area	20,868	753	3.6
Census geographic region			
Northeast	20,257	473	2.3
Midwest	25,040	707	2.8
South	38,763	1,030	2.7
West	23,515	820	3.5

[1]Totals exclude households that did not answer the question about getting food from a food pantry. They represented 0.6 percent of all households.
[2]Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.
[3]Hispanics may be of any race.
[4]Metropolitan area subtotals do not add to metropolitan area totals because central-city residence is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Combined Use of Federal and Community Food Assistance

Both Federal and community food 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 assistance programs also receive assistance from community food assistance programs provides information about these relationships.

Just over one-fourth (26.3 percent) of the households that received food stamps in the month prior to the survey also obtained food from a food pantry at some time during the year (table 16). These households comprised 38.8 percent of all households that reported using a food pantry. Food pantry use was somewhat less common among households that participated in the National School Lunch Program (17.0 percent) and the WIC Program (17.1 percent), reflecting the higher income-eligibility criteria of these programs. A sizeable majority of food pantry users (63.0 percent) received food from at least one of the three largest Federal food programs. The remainder of food pantry users (37.0 percent) did not participate in any of these Federal programs.

Only small proportions (from 1.0 to 2.8 percent) of households that participated in the three largest Federal food assistance programs reported eating at an emergency kitchen during the 12 months prior to the survey. Nevertheless, these households comprised a sizeable share of emergency kitchen users. Among households with incomes less than 185 percent of the poverty line who reported eating one or more meals at an emergency kitchen, 27.5 percent received food stamps, 15.6 percent received free or reduced-cost school lunches, 6.6 percent received WIC benefits, and 39.5 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 programs, however. The households most likely to be underrepresented in the food security survey—those homeless or tenuously housed—are also less likely to participate in the Federal food programs.

Table 16—Combined use of Federal and community food assistance programs by low-income households,[1] 2001

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
	Percent			
Received food stamps previous 30 days	26.3	38.8	2.8	27.5
Received free or reduced-price school lunch previous 30 days	17.0	38.9	1.0	15.6
Received WIC previous 30 days	17.1	16.2	1.0	6.6
Participated in one or more of the three Federal programs	17.9	63.0	1.7	39.5
Did not participate in any of the three Federal programs	4.3	37.0	1.0	60.5

[1]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.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

References

America's Second Harvest. 1998. *Hunger 1997: The Faces and Facts*. Chicago, IL.

Anderson, S.A. (ed.). 1990. "Core Indicators of Nutritional State for Difficult-To-Sample Populations," *Journal of Nutrition* 120(11S):1557-1600. A report prepared by the Life Sciences Research Office, Federation of American Societies for Experimental Biology, for the American Institute of Nutrition.

Andrews, Margaret, Mark Nord, Gary Bickel, and Steven Carlson. 2000. *Household Food Security in the United States,1999.* Food Assistance and Nutrition Research Report No. 8, USDA, Economic Research Service.

Andrews, M., G. Bickel, and S. 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.

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, Alexandria, VA. (Available: http://www.fns.usda.gov/oane/MENU/Published /FSP/FSP.htm)

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, Alexandria, VA.

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," *Journal of Nutrition* 129:510S-516S.

Center for Nutrition Policy and Promotion. 1999. *The Thrifty Food Plan, 1999.* USDA, Washington, DC.

Citro, Constance F., and Robert T. Michael (eds.). 1995. *Measuring Poverty: A New Approach*. Washington, DC: National Academy Press.

Cohen, Barbara, James Parry, and Kenneth Yang. 2002a. *Household Food Security in the United States: Detailed Statistical Report.* E-FAN-02-011, prepared for USDA, Economic Research Service, Washington, DC. (Available: http://www.ers.usda.gov/publications/efan02011/)

Cohen, Barbara, Mark Nord, Robert Lerner, James Parry, and Kenneth Yang. 2002b. *Household Food Security in the United States: Technical Report.* E-FAN-02-010, prepared for USDA, Economic Research Service, Washington, DC. (Available: http://www.ers.usda.gov/publications/efan02010/)

Gundersen, Craig, and Joseph Gruber. 2001. "The Dynamic Determinants of Food Insecurity," in *Second Food Security Measurement and Research Conference, Volume II: Papers.* Food Assistance and Nutrition Research Report 11-2, pp. 92-110. Margaret Andrews and Mark Prell (eds.), USDA, Economic Research Service.

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.* Report prepared for USDA, Food and Consumer Service, Alexandria, VA. (Summary available: http://www.fns.usda.gov/oane/MENU/ Published/FSP/FSP.htm)

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, Alexandria, VA. (Available: http://www.fns.usda.gov/oane/MENU/ Published/FSP/FSP.htm)

Kerr, Richard L., Betty B. Peterkin, Andrea J. Blum, and Linda E. Cleveland. 1984. "USDA 1983 Thrifty Food Plan," *Family Economics Review* No.1.

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: http://www/ers.usda.gov/publications/efan02015/)

Nord, Mark, Nader Kabbani, Laura Tiehen, Margaret Andrews, Gary Bickel, and Steven Carlson. 2002. *Household Food Security in the United States,2000.* Food Assistance and Nutrition Research Report No. 21, USDA, Economic Research Service. (Available: http://www.ers.usda.gov/briefing/foodsecurity)

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.* Food Assistance and Nutrition Research Report No. 25, USDA, Economic Research Service. (Available: http://www.ers.usda.gov/briefing/foodsecurity)

Nord, M., K. Jemison, and G.W. Bickel. 1999. *Prevalence of Food Insecurity and Hunger by State, 1996-1998.* Food and Nutrition Research Report No.2, USDA, Economic Research Service (Sept. 1999). (Available: http://www.ers.usda.gov/briefing/foodsecurity)

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, Alexandria, VA.

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*. Food Assistance and Nutrition Report No. 16-2, USDA, Economic Research Service. (Available: http://www.ers.usda.gov/publications/fanrr16/)

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 Paper No. 9617 (Sept.), 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: 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, Alexandria, VA.

USDA, Food and Consumer Service, Office of Analysis and Evaluation. 1995. *Food Security Measurement and Research Conference: Papers and Proceedings.* Alexandria, VA.

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

Appendix A. Household Responses to Questions in the Food Security Scale

The 18 questions from which the food security scale is calculated ask about conditions, experiences, and behaviors that characterize a wide range of severity of food insecurity and hunger. One way the range of severity represented by the questions is observed is in the percentages of households that respond affirmatively to the various question. For example, the least severe item, *We worried that our food would run out before we got money to buy more*, was reported by 15.3 percent of households in 2001 (table A-1). *Adults cutting the size of meals or skipping meals because there wasn't enough money for food was* reported by 5.7 percent of households. The most severe item, *children not eating for a whole day because there wasn't enough money for food*, was reported by 0.1 percent of households with children. (See box on page 2 for the complete wording of these questions.)

The two least severe questions indicate uncertainty about having enough food and the experience of running out of food. The remaining 16 items indicate 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 as food insecure, so all households with that classification affirmed at least one item indicating disruption of normal eating patterns or reduction in food intake. Most food-insecure households reported multiple indicators of these conditions (table A-2).

Most food-secure households (73.3 percent of all households with children and 85.6 percent of those without children) reported no problems or concerns in meeting their food needs. However, households that reported only one or two indications of food insecurity

Table A-1—Responses to items in the food security scale, 1998-2001[1]

Scale item[2]	Households affirming item[3]			
	1998	1999	2000	2001
	Percent			
Household items				
Worried food would run out before (I/we) got money to buy more	16.6	14.7	15.1	15.3
Food bought didn't last and (I/we) didn't have money to get more	13.3	12.2	12.2	12.3
Couldn't afford to eat balanced meals	10.9	9.5	9.9	10.0
Adult items				
Adult(s) cut size of meals or skipped meals	6.6	5.2	5.4	5.7
Respondent ate less than felt he/she should	6.2	4.8	5.2	5.7
Adult(s) cut size or skipped meals in 3 or more months	4.5	3.6	3.8	4.0
Respondent hungry but didn't eat because couldn't afford	2.8	2.2	2.4	2.4
Respondent lost weight	1.7	1.2	1.5	1.5
Adult(s) did not eat for whole day	1.3	1.0	1.0	1.1
Adult(s) did not eat for whole day in 3 or more months	.9	.7	.7	.8
Child items				
Relied on few kinds of low-cost food to feed child(ren)	16.5	14.4	16.3	15.7
Couldn't feed child(ren) balanced meals	9.6	8.2	8.9	8.6
Child(ren) were not eating enough	5.0	4.7	4.7	4.1
Cut size of child(ren)'s meals	1.6	1.0	1.2	1.0
Child(ren) were hungry	1.2	.8	.8	.7
Child(ren) skipped meals	.8	.5	.6	.4
Child(ren) skipped meals in 3 or more months	.5	.4	.4	.3
Child(ren) did not eat for whole day	.2	.1	.2	.1

[1]Survey responses weighted to population totals.
[2]The actual wording of each item 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."
[3]Households not responding to item are excluded from the denominator. Households without children are excluded from the denominator of child-referenced items.

Source: Calculated by ERS using data from the August 1998, April 1999, September 2000, and December 2001 Current Population Survey Food Security Supplements.

Table A-2—Percentage of households by food security raw score, 2001

Panel A: Households with children

Raw score (number of food security questions affirmed)	Percent of households[1]	Cumulative percent of households[1]	Food security status
0	73.26	73.26	
1	6.00	79.26	Food secure
2	4.59	83.85	
3	3.59	87.44	
4	2.85	90.29	
5	2.55	92.84	Food insecure without hunger
6	2.15	94.99	
7	1.24	96.23	
8	1.15	97.38	
9	.86	98.24	
10	.58	98.82	
11	.36	99.18	
12	.35	99.53	
13	.20	99.73	Food insecure with hunger
14	.11	99.84	
15	.06	99.90	
16	.05	99.95	
17	.03	99.98	
18	.02	100.00	

Panel B: Households with no children

Raw score (number of food security questions affirmed)	Percent of households[1]	Cumulative percent of households[1]	Food security status
0	85.60	85.60	Food secure
1	3.93	89.53	
2	2.80	92.33	
3	2.76	95.08	
4	1.01	96.09	Food insecure without hunger
5	.93	97.03	
6	1.11	98.14	
7	.81	98.95	
8	.47	99.42	Food insecure with hunger
9	.24	99.66	
10	.34	100.00	

[1]Survey responses weighted to population totals.
Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

(11 percent of households with children and 6.7 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 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. 1598). Further research is under way on the characteristics and conditions of this least severe range measured by the food security scale, evidenced by households affirming just one or two food insecurity indicators.

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

Most of the questions in the food security scale include information about how often the behavior, experience, or condition occurred. The food security scale is constructed to register food insecurity or hunger if these conditions occurred at any time during the year, but the frequency-of-occurrence information provided by the individual questions in the scale provides additional insight into the frequency and duration of food insecurity and hunger. Frequency-of-occurrence information is collected in the CPS Food Security Supplements using two different methods:

- **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 (see sample questions on page 2).
- **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 2001 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 15 to 22 percent (depending on the specific question), reported that it occurred "often." For example, 2.2 percent of households reported that they often could not afford to eat balanced meals in the past 12 months, and 7.8 percent reported that this had occurred sometimes (but not often). Thus, a total of 10 percent of households reported that this occurred at some time during the past 12 months, and, of those, 22 percent reported that it occurred often.

In response to method 2 questions, 25 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 50 percent reported that it occurred in "some months, but not every month;" and 20 to 30 percent reported that it occurred "in only 1 or 2 months." For example, 5.7 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 follow-up question asking how often this happened, 1.7 percent said that it happened in almost every month (i.e., 30 percent of those who responded "yes" to the base question), 2.3 percent said it happened in some months but not every month (40 percent of those who responded "yes" to the base question), and 1.7 percent said it happened in only 1 or 2 months (30 percent of those who responded "yes" to the base question).

Table A-3—Frequency of occurrence of behaviors, experiences, and conditions indicating food insecurity and hunger, 2001[1]

Condition[2]	Frequency of occurrence		
	Often	Sometimes	Total (ever during the year)
	Percent[3]		
Worried food would run out before (I/we) got money to buy more	3.2	12.2	15.3
Food bought didn't last and (I/we) didn't have money to get more	2.2	10.2	12.3
Couldn't afford to eat balanced meals	2.2	7.8	10.0
Relied on few kinds of low-cost food to feed child(ren)	3.2	12.5	15.7
Couldn't feed child(ren) balanced meals	1.3	7.3	8.6
Child(ren) were not eating enough	.7	3.4	4.1

	Frequency of occurrence			
	Almost every month	Some months but not every month	In only 1 or 2 months	Total (ever during the year)
	Percent[3]			
Adult(s) cut size of meals or skipped meals	1.7	2.3	1.7	5.7
Respondent ate less than felt he/she should	1.5	2.5	1.7	5.6
Respondent hungry but didn't eat because couldn't afford	.8	1.0	.7	2.4
Respondent lost weight	NA	NA	NA	1.5
Adult(s) did not eat for whole day	.4	.4	.3	1.1
Cut size of child(ren)'s meals	.3	.5	.2	1.0
Child(ren) were hungry	NA	NA	NA	.7
Child(ren) skipped meals	.1	.2	.1	.4
Child(ren) did not eat for whole day	NA	NA	NA	.1

[1]Survey responses weighted to population totals.
[2]The actual wording of each item 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."
[3]Households not responding to item are excluded from the denominator. Households without children are excluded from the denominator of child-referenced items.
NA: Frequency of occurrence information was not collected for these conditions.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

Table A-4 presents the same frequency-of-occurrence response statistics for households classified as food insecure with hunger. Almost all of these households responded affirmatively to the first four questions—questions that are sensitive to less severe aspects of food insecurity—and more than one in three reported that these conditions occurred often during the past year. In response to method 2 questions, 30 to 40 percent of households that affirmed each base question reported that the condition occurred in "almost every month."

Table A-4—Frequency of occurrence of behaviors, experiences and conditions indicating food insecurity and hunger in households classified as food insecure with hunger, 2001[1]

Condition[2]	Frequency of occurrence		
	Often	Sometimes	Total (ever during the year)
	Percent[3]		
Worried food would run out before (I/we) got money to buy more	46.2	51.5	97.7
Food bought didn't last and (I/we) didn't have money to get more	37.9	59.4	97.3
Couldn't afford to eat balanced meals	35.5	58.2	93.7
Relied on few kinds of low-cost food to feed child(ren)	37.9	56.6	94.5
Couldn't feed child(ren) balanced meals	22.6	64.0	86.5
Child(ren) were not eating enough	14.2	44.8	58.9

	Frequency of occurrence			
	Almost every month	Some months but not every month	In only 1 or 2 months	Total (ever during the year)
	Percent[3]			
Adult(s) cut size of meals or skipped meals	40.7	44.8	10.5	95.9
Respondent ate less than felt he/she should	37.4	42.8	12.1	92.3
Respondent hungry but didn't eat because couldn't afford	22.0	25.9	11.7	59.6
Respondent lost weight	NA	NA	NA	40.1
Adult(s) did not eat for whole day	11.2	12.4	6.9	30.4
Cut size of child(ren)'s meals	6.7	11.0	3.8	21.5
Child(ren) were hungry	NA	NA	NA	19.0
Child(ren) skipped meals	3.5	4.6	2.5	10.5
Child(ren) did not eat for whole day	NA	NA	NA	3.3

[1]Survey responses weighted to population totals for households classified as food-insecure with hunger.
[2]The actual wording of each item 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."
[3]Households not responding to item are excluded from the denominator. Households without children are excluded from the denominator of child-referenced items.
NA: Frequency of occurrence information was not collected for these conditions.

Source: Calculated by ERS using data from the December 2001 Current Population Survey Food Security Supplement.

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

This report of household food security in 2001 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, 2000* (Nord et al., 2002)
- *Measuring Children's Food Security in U.S. Households, 1995-99* (Nord and Bickel, 2002)

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 hunger and food insecurity prevalence 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) and 2000 (Nord et al., 2002) 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., 2002a) provided additional prevalence statistics along with standard errors for prevalence estimates.

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.[22]

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.[23] The CPS food security survey was

[22]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.

[23]The Current Population Survey (CPS) is a representative national sample of approximately 50,000 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. Beginning in 2001, ongoing collection is planned for early December of each year.

repeated in September 1996, April 1997, August 1998, April 1999, September 2000, April 2001, and December 2001. 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.

Initial analysis of the 1995 data was undertaken by Abt Associates, Inc., through a cooperative venture with FNS, the interagency working group, 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).[24]

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 food insecurity and hunger prevalences 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 severity 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. 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., 2002b).

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. A summary list of many of these studies is available from the Brandeis University Center on Hunger and Poverty at http://www.centeronhunger.org.

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 more severely food- insecure persons.
- 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 children's hunger 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 hunger. 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. The same is true at the hunger threshold (Hamilton et al., 1997a, p. 65; Hamilton et al., 1997b, p. 89).

[24]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 severity of food insecurity recently experienced by household members is analogous to the level of test difficulty that an individual has mastered.

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. 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 section 2 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 household food needs 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 the Thrifty Food Plan that replaced it at the same designated cost level in 1975, 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 (National Research Council, 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 food stamp allotments.[25]

The Thrifty Food Plan was most recently revised by USDA's Center for Nutrition Policy and Promotion (CNPP) in 1999. 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 (Center for Nutrition Policy and Promotion, 1999). 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 2001—the month the 2001 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 in section 2. 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 ($29.80) and wife ($27.10) and adjusting the total upward by 10 percent. The adjusted total ($62.59) represents the cost of the Thrifty Food Plan for this type of household.

[25]The Thrifty Food Plan was revised several times over the years (with major changes in 1983 and 1999) 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). In these revisions, USDA gave attention both to cost containment—keeping the cost of the Thrifty Food Plan near the food stamp benefit level—and to the buying patterns of households (Citro and Michael, 1995, p. 111).

Table C-1—Weekly cost of USDA food plans: cost of food at home at four levels, December 2001

Age-gender group[1]	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan
		Dollars		
Child				
1 year[2]	16.40	20.20	23.80	28.90
2 years	16.40	20.20	23.80	28.90
3-5 years	17.80	22.20	27.50	32.90
6-8 years	22.10	29.60	36.80	42.80
9-11 years	26.10	33.50	42.90	49.70
Male				
12-14 years	27.10	37.90	47.00	55.30
15-19 years	27.90	39.10	48.70	56.20
20-50 years	29.80	38.90	48.40	58.60
51 years and over	27.10	37.00	45.50	54.60
Female				
12-19 years	27.10	32.70	39.60	47.90
20-50 years	27.10	34.00	41.30	53.00
51 years and over	26.60	33.10	41.00	49.00
Examples of Families				
1. Couple: 20-50 years	62.60	80.20	98.70	122.80
2. Couple: 20-50 years, with 2 children, ages 2 and 3-5 years	91.10	115.30	141.00	173.40

[1]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).

[2]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 old 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/using3.htm.

Appendix D. Changes in Prevalence of Food Insecurity and Hunger by State, 1996-98 (average) to 1999-2001 (average)

To assess changes in prevalence rates of food insecurity and hunger over time, adjustments must be made for year-to-year differences in screening procedures used to reduce respondent burden in the CPS food security surveys.[26] The State-level prevalence rates of food insecurity and hunger reported in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999) were based on data that had been edited to be comparable across all years.[27] Those rates cannot be compared directly with the prevalence rates for 1999-01 presented in section 1, which are based on data collected under screening procedures initiated in 1998. 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 the households screened out were actually food insecure. The effect of the screening differences at the national level can be seen in figure 1, which presents prevalence rates from 1998 to 2001 based both on the unedited data for each year and on data edited to be comparable across all years.

To provide an appropriate baseline for assessing changes in State prevalence rates of food insecurity and hunger, statistics from the 1996-98 report for each State are adjusted upward to offset the estimated effects of the earlier screening procedures on that State's prevalence rates. The adjustments were calculated as follows:

- For the period 1999-2001, prevalence rates of food insecurity and hunger were calculated for each State under two editing protocols: (a) based on the current screening procedures, as presented in table 7, and (b) based on data edited to be comparable across all years.
- The ratio of the two prevalence rates [(b)/(a)] was calculated as a measure of the effect—during the 1999-2001 period—of editing the data to be comparable across all years. This "screening effect" was calculated separately for each State's prevalence rate of food insecurity, and for each State's prevalence rate of hunger.
- Each prevalence rate for 1996-98 was multiplied by the inverse of the "screening effect" for the corresponding prevalence rate in 1999-2001. This adjusted each 1996-98 prevalence rate to the level it would have been if current screening procedures had been in use, assuming that the screening effect was the same in both time periods.

Table D-1 compares State-level prevalence rates for 1999-2001 (repeated from table 7) with the adjusted 1996-98 rates. The estimated prevalence rates of food insecurity and hunger declined in most States from 1996-98 to 1999-2001. Declines in prevalences of food insecurity were statistically significant in eight States and the District of Columbia. Declines in prevalence rates of food insecurity with hunger were statistically significant in eight States and the District of Columbia. On the other hand, four States registered increases in food insecurity prevalence rates large enough to be statistically significant, and two States registered statistically significant increases in prevalence rates of food insecurity with hunger.[28]

[26]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.

[27]To make prevalence rates comparable across all years, data for each year were edited so that households were classified as food secure if they would have been screened out of the food security module under procedures used in any year's survey.

[28]Seasonal effects on food security measurement (discussed in section 1) probably bias prevalence rates for 1999-2001 downward somewhat compared with 1996-98. Use of 3-year averages reduces the size of this bias substantially (to one-third the size of the effect on comparisons between two single-year statistics). At the national level, this effect would depress the prevalence rate of food insecurity by about 0.4 percentage points and the prevalence rate of food insecurity with hunger by about 0.2 percentage points. However, seasonal effects may vary from State to State.

Table D-1—Changes in prevalence of food insecurity and hunger by State, 1996-98 (average) to 1999-2001 (average)[1]

State	Food insecure (with or without hunger)			Food insecure with hunger		
	Average 1996-98	Average 1999-2001	Change*	Average 1996-98	Average 1999-2001	Change*
	Percent	*Percent*	*Percentage points*	*Percent*	*Percent*	*Percentage points*
U.S. total	11.3	10.4	-0.9*	3.7	3.1	-0.6*
AK	8.7	11.1	2.4*	3.6	4.3	0.7
AL	12.5	11.9	-0.6	3.3	3.9	0.6
AR	13.7	12.8	-0.9	4.8	3.9	-0.9
AZ	14.6	11.6	-3.0*	4.3	3.6	-0.7
CA	13.3	11.8	-1.5*	4.3	3.3	-1.0*
CO	10.8	8.6	-2.2*	3.8	2.5	-1.3*
CT	11.0	6.8	-4.2*	4.1	2.6	-1.5*
DC	13.7	9.8	-3.9*	4.7	2.9	-1.8*
DE	8.1	7.3	-0.8	2.9	2.1	-0.8
FL	13.2	12.2	-1.0	4.5	4.0	-0.5
GA	10.9	11.6	0.7	3.4	3.9	0.5
HI	12.9	10.8	-2.1	3.1	3.0	-0.1
IA	8.0	7.6	-0.4	2.6	2.2	-0.4
ID	11.3	13.0	1.7	3.3	4.5	1.2*
IL	9.6	9.2	-0.4	3.2	2.7	-0.5
IN	9.0	8.5	-0.5	2.9	2.5	-0.4
KS	11.5	11.3	-0.2	4.2	3.2	-1.0
KY	9.7	10.1	0.4	3.4	3.0	-0.4
LA	14.4	13.2	-1.2	4.4	3.0	-1.4*
MA	7.5	6.7	-0.8	2.1	2.0	-0.1
MD	8.7	8.8	0.1	3.3	3.1	-0.2
ME	9.8	9.4	-0.4	4.0	3.1	-0.9
MI	9.6	8.1	-1.5*	3.1	2.4	-0.7
MN	8.6	7.1	-1.5	3.1	2.0	-1.1
MO	10.1	8.6	-1.5	3.0	2.3	-0.7
MS	14.6	13.1	-1.5	4.2	3.7	-0.5
MT	11.2	13.2	2.0*	3.0	4.0	1.0
NC	9.8	11.1	1.3	2.7	3.3	0.6
ND	5.5	8.5	3.0*	1.6	2.2	0.6
NE	8.7	9.9	1.2	2.5	2.9	0.4
NH	8.6	6.5	-2.1*	3.1	1.9	-1.2*
NJ	8.9	7.8	-1.1	3.1	2.4	-0.7
NM	16.5	14.6	-1.9	4.8	4.2	-0.6
NV	10.4	10.1	-0.3	4.0	3.4	-0.6
NY	11.9	9.6	-2.3*	4.1	3.1	-1.0*
OH	9.7	9.1	-0.6	3.5	2.8	-0.7
OK	13.1	12.9	-0.2	4.2	3.8	-0.4
OR	14.2	13.7	-0.5	6.0	5.8	-0.2
PA	8.3	8.4	0.1	2.6	2.2	-0.4
RI	10.2	8.7	-1.5	2.7	2.5	-0.2
SC	11.0	11.3	0.3	3.5	3.6	0.1
SD	8.2	7.9	-0.3	2.2	1.9	-0.3
TN	11.8	11.8	0.0	4.4	3.4	-1.0
TX	15.2	13.9	-1.3	5.5	3.6	-1.9*
UT	10.3	13.8	3.5*	3.1	4.6	1.5*
VA	10.2	7.6	-2.6*	3.0	1.5	-1.5*
VT	8.8	9.1	0.3	2.7	1.8	-0.9
WA	13.2	12.5	-0.7	4.7	4.6	-0.1
WI	8.5	8.4	-0.1	2.6	2.9	0.3
WV	9.5	10.3	0.8	3.1	3.3	0.2
WY	9.9	9.9	0.0	3.5	3.2	-0.3

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

[1]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.