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Number 125

September 2011

Household Food Security in the United States in 2010

Alisha Coleman-Jensen
Mark Nord
Margaret Andrews
Steven Carlson

Food Assistance & Nutrition Research Program

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United States Department of Agriculture

Economic Research Report Number 125

September 2011

A Report from the Economic Research Service

www.ers.usda.gov

Household Food Security in the United States in 2010

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Abstract

An estimated 85.5 percent of American households were food secure throughout the entire year in 2010, meaning that they had access at all times to enough food for an active, healthy life for all household members. The remaining households (14.5 percent) were food insecure at least some time during the year, including 5.4 percent with very low food security—meaning that the food intake of one or more household members was reduced and their eating patterns were disrupted at times during the year because the household lacked money and other resources for food. The prevalence rate of very low food security declined from 5.7 percent in 2009, while the change in food insecurity overall (from 14.7 percent in 2009) was not statistically significant. The typical food-secure household spent 27 percent more on food than the typical food-insecure household of the same size and household composition. Fifty-nine percent of all food-insecure households participated in one or more of the three largest Federal food and nutrition assistance programs during the month prior to the 2010 survey.

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

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Summary

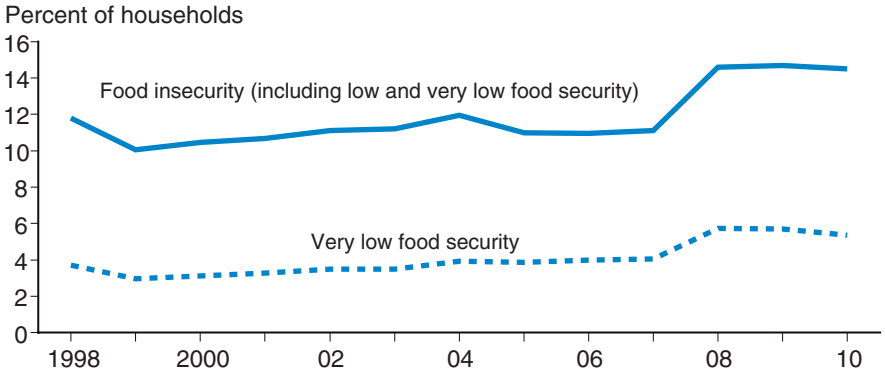
Most U.S. households have consistent, dependable access to enough food for active, healthy living—they are food secure. But a minority of American households experience food insecurity at times during the year, meaning that their access to adequate food is limited by a lack of money and other resources. Food and nutrition assistance programs of the U.S. Department of Agriculture (USDA) increase food security by providing low-income households access to food, a healthful diet, and nutrition education. USDA monitors the extent and severity of food insecurity in U.S. households through an annual, nationally representative survey. Reliable monitoring of food security contributes to the effective operation of these programs as well as private food assistance programs and other government initiatives aimed at reducing food insecurity. This report presents statistics on households' food security, food expenditures, and use of food and nutrition assistance programs in 2010.

What Were the Study Findings?

The percentage of U.S. households that were food insecure remained essentially unchanged from 2009 to 2010, while the percentage with food insecurity in the severe range described as very low food security declined.

- In 2010, 85.5 percent of U.S. households were food secure throughout the year. The remaining 14.5 percent (17.2 million households) were food insecure. Food-insecure households (those with low and very low food security) had difficulty at some time during the year providing enough food for all their members due to a lack of resources. The change from the 2009 estimate (14.7 percent) was not statistically significant.
- In 2010, 5.4 percent of U.S. households (6.4 million households) had *very low food security*, a statistically significant decline from 5.7 percent in 2009. In these households, the food intake of some household members was reduced and normal eating patterns were disrupted due to limited resources. They comprised about one-third of all food-insecure households. Declines in the prevalence of very low food security were greatest for households with children, women living alone, and households with annual incomes below 185 percent of the poverty line.

The prevalence of very low food security declined from 2009 to 2010, while the prevalence of food insecurity remained essentially unchanged



Source: Calculated by USDA, Economic Research Service based on Current Population Survey Food Security Supplement data.

- Children were food insecure at times during the year in 9.8 percent of households with children (3.9 million households), down from 10.6 percent in 2009. These households were unable at times during the year to provide adequate, nutritious meals for their children.
- While children are usually shielded from the disrupted eating patterns and reduced food intake that characterize very low food security, both children and adults experienced instances of very low food security in 1.0 percent of households with children (386,000 households) in 2010, essentially unchanged from 1.2 percent in 2009. However, among households with children in which incomes were below 185 percent of the poverty line, the percentage with very low food security among children declined from 2.9 percent in 2009 to 2.1 percent in 2010.
- Rates of food insecurity were substantially higher than the national average for households with incomes near or below the Federal poverty line, households with children headed by single women or single men, and Black and Hispanic households. Food insecurity was more common in large cities and rural areas than in suburban areas and other outlying areas around large cities.
- On a typical day, the number of households with very low food security was a small fraction of the number that experienced this condition "at some time during the year." Typically, households classified as having very low food security experienced the condition in 7 months of the year, for a few days in each of those months.
- The typical food-secure household spent 27 percent more for food than the typical food-insecure household of the same size and composition, including food purchased with Supplemental Nutrition Assistance Program (SNAP) benefits (formerly called food stamps).
- Fifty-nine percent of food-insecure households in the survey reported that in the previous month they had participated in one or more of the three largest Federal food and nutrition assistance programs.

How Was the Study Conducted?

Data for the ERS food security reports come from an annual survey conducted by the U.S. Census Bureau as a supplement to the monthly Current Population Survey. USDA sponsors the annual survey, and USDA's Economic Research Service compiles and analyzes the responses. The 2010 food security survey covered 44,757 households comprising a representative sample of the U.S. civilian population of 119 million households. The food security survey asked one adult respondent in each household a series of questions about experiences and behaviors that indicate food insecurity, such as being unable to afford balanced meals, cutting the size of meals because of too little money for food, or being hungry because of too little money for food. The food security status of the household was assigned based on the number of food-insecure conditions reported.

Introduction

Since 1995, the U.S. Department of Agriculture has collected information annually on food access and adequacy, food spending, and sources of food assistance for the U.S. population. The information is collected in an annual food security survey, conducted by the U.S. Census Bureau as a supplement to the nationally representative Current Population Survey.[1] A major impetus for this data collection is to provide information about the prevalence and severity of food insecurity in U.S. households. Previous USDA reports in the series are at http://www.ers.usda.gov/briefing/foodsecurity/readings.htm/.

This report updates the national statistics on food security, household food spending, and the use of Federal food and nutrition assistance by food-insecure households, using data collected in the December 2010 food security survey—the 16th annual survey in the Nation's food security monitoring system.

Beginning with this year's report, USDA has shortened the time between data collection and publication to provide more timely information on the food security of the Nation's households. Advances in information technology make it practical to publish the report online rather than in print, and to shorten the report length by moving some of the less frequently used tables to an online statistical supplement (http://www.ers.usda.gov/publications/ap/ap057), thus facilitating earlier publication while providing the same content as in previous years.

[1]See http://www.ers.usda.gov/briefing/foodsecurity/history.htm/ for the history of the food security measurement project and the development of the food security measures.

Household Food Security

Food security—access by all people at all times to enough food for an active, healthy life—is one of several conditions necessary for a population to be healthy and well nourished. This section provides information on food security and food insecurity in U.S. households over the course of the year ending in December 2010.

Methods

The statistics presented in this report are based on data collected in a supplement to the Current Population Survey (CPS) conducted in December 2010. The CPS currently includes about 54,000 households and is representative, at State and national levels, of the civilian, noninstitutionalized population of the United States. In December 2010, 44,757 households completed the food security supplement; the remainder were unable or unwilling to do so. Survey sample weights were calculated by the U.S. Census Bureau to indicate how many households were represented by each household that responded to the survey.[2] All statistics in this report were calculated by applying the food security supplement weights to responses by the surveyed households, so the statistics are nationally representative.

Unless otherwise noted, statistical differences described in the text are significant at the 90-percent confidence level.[3]

The household food security statistics presented in this report are based on a measure of food security calculated from responses to a series of questions about conditions and behaviors that characterize households when they are having difficulty meeting basic food needs.[4] Each question asks whether the condition or behavior occurred at any time during the previous 12 months and specifies a lack of money and other resources to obtain food as the reason. Voluntary fasting or dieting to lose weight are thereby excluded from the measure. The series includes 10 questions about food conditions of the household as a whole and of adults in the household and, if there are children present in the household, an additional 8 questions about their food conditions (see box, "Questions Used to Assess the Food Security of Households in the CPS Food Security Survey," page 3). Responses to the 18 food security questions are reported in tables S-6 to S-8 of the statistical supplement, http://www.ers.usda.gov/publications/ap/ap057). The food security status of each interviewed household is determined by the number of food-insecure conditions and behaviors the household reports. Households are classified as food secure if they report no food-insecure conditions or if they report only one or two food-insecure conditions. (Food-insecure conditions are indicated by responses of "often" or "sometimes" to questions 1-3 and 11-13, "almost every month" or "some months but not every month" to questions 5, 10, and 17,

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

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

[4]The methods used to measure the extent and severity of food insecurity have been described in several places (Hamilton et al., 1997a, 1997b; Andrews et al., 1998; Bickel et al., 1998; Carlson et al., 1999; Bickel et al., 2000; Nord and Bickel, 2002). See also the recent assessment of the measurement methods by a panel of the Committee on National Statistics (National Research Council, 2006). Further details on the development of the measure are provided in the ERS Food Security in the United States briefing room, http://www.ers.usda.gov/briefing/foodsecurity/history.htm/.

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

1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?

2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?

3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months?

4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? (Yes/No)

5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)

7. In the last 12 months, were you ever hungry, but didn't eat, because there wasn't enough money for food? (Yes/No)

8. In the last 12 months, did you lose weight because there wasn't enough money for food? (Yes/No)

9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (Yes/No)

10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

(Questions 11-18 were asked only if the household included children age 0-17)

11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that often, sometimes, or never true for you in the last 12 months?

12. "We couldn't feed our children a balanced meal, because we couldn't afford that." Was that often, sometimes, or never true for you in the last 12 months?

13. "The children were not eating enough because we just couldn't afford enough food." Was that often, sometimes, or never true for you in the last 12 months?

14. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food? (Yes/No)

15. In the last 12 months, were the children ever hungry but you just couldn't afford more food? (Yes/No)

16. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food? (Yes/No)

17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

18. In the last 12 months did any of the children ever not eat for a whole day because there wasn't enough money for food? (Yes/No)

and "yes" to the other questions.) They are classified as food insecure if they report three or more food-insecure conditions.[5]

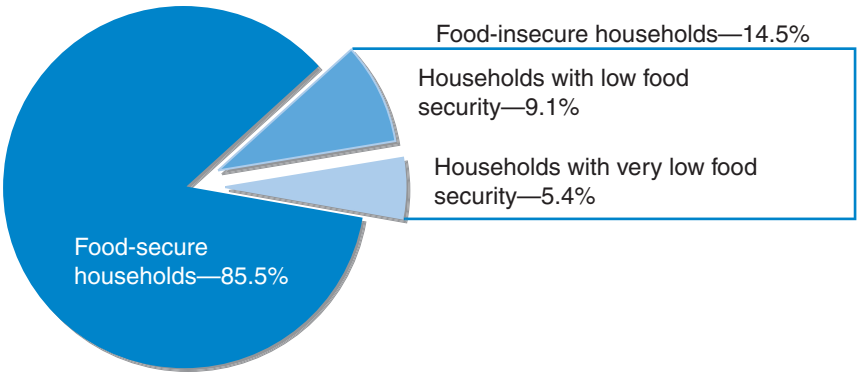
Food-insecure households are further classified as having either low food security or very low food security.[6] The very low food security category identifies households in which food intake of one or more members was reduced and eating patterns disrupted because of insufficient money and other resources for food (see box, "What Is Very Low Food Security?," page 5). Households without children are classified as having very low food security if they report six or more food-insecure conditions. Households with children are classified as having very low food security if they report eight or more food-insecure conditions, including conditions among both adults and children. They are further classified as having very low food security among children if they report 5 or more food-insecure conditions among the children (that is, if they respond affirmatively to 5 or more of questions 11-18).

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

Prevalence of Food Insecurity—National Conditions and Trends

An estimated 85.5 percent of U.S. households were food secure throughout the entire year in 2010 (fig. 1, table 1A). In concept, "food secure" means that all household members had access at all times to enough food for an active, healthy life (Anderson, 1990).[7] The remaining 14.5 percent (17.2 million households) were food insecure at some time during the year. That is, they

Figure 1
U.S. households by food security status, 2010



Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

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

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

[6]Prior to 2006, households with low food security were described as "food insecure without hunger" and households with very low food security were described as "food insecure with hunger." Changes in these descriptions were made in 2006 at the recommendation of the Committee on National Statistics (National Research Council, 2006), in order to distinguish the physiological state of hunger from indicators of food availability. The criteria by which households were classified remained unchanged.

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

What Is "Very Low Food Security"?

The defining characteristic of "very low food security" is that, at times during the year, the food intake of household members was reduced and their normal eating patterns were disrupted because the household lacked money and other resources for food. Very low food security can be characterized in terms of the conditions that households in this category reported in the food security survey. In the 2010 survey, households classified as having very low food security (representing an estimated 6.4 million households nationwide) reported the following specific conditions:

- 99 percent reported having worried that their food would run out before they got money to buy more.
- 96 percent reported that the food they bought just did not last and they did not have money to get more.
- 94 percent reported that they could not afford to eat balanced meals.
- 96 percent reported that an adult had cut the size of meals or skipped meals because there was not enough money for food.
- 88 percent reported that this had occurred in 3 or more months.
- In 95 percent, respondents reported that they had eaten less than they felt they should because there was not enough money for food.
- In 66 percent, respondents reported that they had been hungry but did not eat because they could not afford enough food.
- In 45 percent, respondents reported having lost weight because they did not have enough money for food.
- 29 percent reported that an adult did not eat for a whole day because there was not enough money for food.
- 22 percent reported that this had occurred in 3 or more months.
- All of those without children reported at least six of these conditions, and 65 percent reported seven or more. (Conditions in households with children were similar, but the reported food-insecure conditions of both adults and children were taken into account.)

Percentage of households reporting each indicator of food insecurity, by food security status, 2010

Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

were, at times, uncertain of having, or unable to acquire, enough food for all household members because they had insufficient money and other resources for food. About two-thirds of food-insecure households avoided substantial reductions or disruptions in food intake, in many cases by relying on a few basic foods and reducing variety in their diets. But 5.4 percent (6.4 million households) had very low food security—that is, they were food insecure to the extent that eating patterns of one or more household members were disrupted and their food intake reduced, at least some time during the year, because they couldn't afford enough food.

Among U.S. households with children under age 18, 79.8 percent were food secure in 2010, and in 10.4 percent, only adults were food-insecure (fig. 2).

Table 1A

Households and individuals by food security status of household, 1998-2010

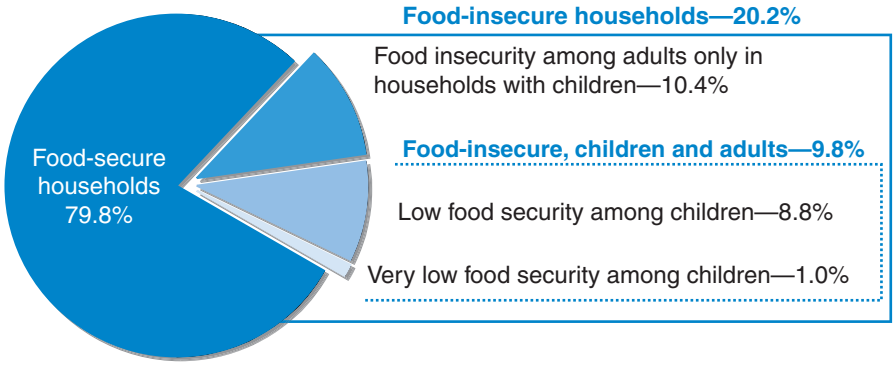
Category and year	Total[1]	Food secure		Food insecure: All		Food insecure: With low food security		Food insecure: With very low food security	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
Households:									
2010	118,756	101,527	85.5	17,229	14.5	10,872	9.1	6,357	5.4
2009	118,174	100,820	85.3	17,354	14.7	10,601	9.0	6,753	5.7
2008	117,565	100,416	85.4	17,149	14.6	10,426	8.9	6,723	5.7
2007	117,100	104,089	88.9	13,011	11.1	8,262	7.0	4,749	4.1
2006	115,609	102,961	89.1	12,648	10.9	8,031	6.9	4,617	4.0
2005	114,437	101,851	89.0	12,586	11.0	8,158	7.1	4,428	3.9
2004	112,967	99,473	88.1	13,494	11.9	9,045	8.0	4,449	3.9
2003	112,214	99,631	88.8	12,583	11.2	8,663	7.7	3,920	3.5
2002	108,601	96,543	88.9	12,058	11.1	8,259	7.6	3,799	3.5
2001	107,824	96,303	89.3	11,521	10.7	8,010	7.4	3,511	3.3
2000	106,043	94,942	89.5	11,101	10.5	7,786	7.3	3,315	3.1
1999	104,684	94,154	89.9	10,529	10.1	7,420	7.1	3,109	3.0
1998	103,309	91,121	88.2	12,188	11.8	8,353	8.1	3,835	3.7
All individuals (by food security status of household):[2]									
2010	304,034	255,202	83.9	48,832	16.1	32,777	10.8	16,055	5.3
2009	301,750	251,588	83.4	50,162	16.6	32,499	10.8	17,663	5.9
2008	299,567	250,459	83.6	49,108	16.4	31,824	10.6	17,284	5.8
2007	297,042	260,813	87.8	36,229	12.2	24,287	8.2	11,942	4.0
2006	294,010	258,495	87.9	35,515	12.1	24,395	8.3	11,120	3.8
2005	291,501	256,373	87.9	35,128	12.1	24,349	8.4	10,779	3.7
2004	288,603	250,407	86.8	38,196	13.2	27,535	9.5	10,661	3.7
2003	286,410	250,155	87.3	36,255	12.7	26,622	9.3	9,633	3.4
2002	279,035	244,133	87.5	34,902	12.5	25,517	9.1	9,385	3.4
2001	276,661	243,019	87.8	33,642	12.2	24,628	8.9	9,014	3.3
2000	273,685	240,454	87.9	33,231	12.1	24,708	9.0	8,523	3.1
1999	270,318	239,304	88.5	31,015	11.5	23,237	8.6	7,779	2.9
1998	268,366	232,219	86.5	36,147	13.5	26,290	9.8	9,857	3.7
Adults (by food security status of household):[2]									
2010	229,129	196,505	85.8	32,624	14.2	21,357	9.3	11,267	4.9
2009	227,543	194,579	85.5	32,964	14.5	20,741	9.1	12,223	5.4
2008	225,461	193,026	85.6	32,435	14.4	20,320	9.0	12,115	5.4
2007	223,467	199,672	89.4	23,795	10.6	15,602	7.0	8,193	3.7
2006	220,423	197,536	89.6	22,887	10.4	15,193	6.9	7,694	3.5
2005	217,897	195,172	89.6	22,725	10.4	15,146	7.0	7,579	3.5
2004	215,564	191,236	88.7	24,328	11.3	16,946	7.9	7,382	3.4
2003	213,441	190,451	89.2	22,990	10.8	16,358	7.7	6,632	3.1
2002	206,493	184,718	89.5	21,775	10.5	15,486	7.5	6,289	3.0
2001	204,340	183,398	89.8	20,942	10.2	14,879	7.3	6,063	3.0
2000	201,922	181,586	89.9	20,336	10.1	14,763	7.3	5,573	2.8
1999	198,900	179,960	90.5	18,941	9.5	13,869	7.0	5,072	2.5
1998	197,084	174,964	88.8	22,120	11.2	15,632	7.9	6,488	3.3

[1]Totals exclude households for which food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2010, these exclusions represented 459,000 households (0.4 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 were directly affected by the households' food insecurity. Similarly, not all individuals in households classified as having very low food security were subject to the reductions in food intake and disruptions in eating patterns that characterize this condition. Young children, in particular, are often protected from effects of the households' food insecurity.

Sources: Calculated by ERS using data from the August 1998, April 1999, September 2000, December 2001, December 2002, December 2003, December 2004, December 2005, December 2006, December 2007, December 2008, December 2009, and December 2010 Current Population Survey Food Security Supplements.

Figure 2
U.S. households with children by food security status of adults and children, 2010



Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

Both children and adults were food insecure in 9.8 percent of households with children (3.9 million households), and in about 1.0 percent (386,000 households), one or more child was also subject to reduced food intake and disrupted eating patterns at some time during the year (table 1B). In some households with very low food security among children, only older children may have been subjected to the more severe effects of food insecurity while younger children were protected from those effects (Nord, 2009a).

When interpreting food security statistics in this report, it is important to keep in mind that households were classified as having low or very low food security if they experienced the condition at any time during the previous 12 months. The prevalence of these conditions on any given day is far below the corresponding annual prevalence. For example, the prevalence of very low food security on an average day during the 30-day period prior to the December 2010 survey is estimated to have been between 0.7 and 1.0 percent of households (0.8 to 1.2 million households; see box, "When Food Insecurity Occurs in U.S. Households, It Is Usually Recurrent But Not Chronic," on page 9). Children, along with adults, experienced very low food security in an estimated 46,000 to 56,000 households (0.12 to 0.14 percent of all U.S. households with children) on an average day during the same period.

The prevalence of food insecurity was essentially unchanged from 2009 to 2010. That is, the change from 2009 was within the range that could have resulted from sampling variation. Over the previous decade, food insecurity had increased from about 10 percent in 1999 to nearly 12 percent in 2004, declined to 11 percent in 2005-07, then increased to its current level in 2008 (14.6 percent) and 2009 (14.7 percent, fig. 3).[8]

The prevalence of very low food security declined from 5.7 percent in 2009 to 5.4 percent in 2010; the decline was statistically significant. The prevalence of very low food security had increased from around 3 percent in 1999 to 4 percent in 2004, remained essentially unchanged through 2007, then increased to 5.7 percent in 2008.

[8]Because of changes from year to year in screening procedures used to reduce respondent burden in the food security survey interviews, prevalence statistics calculated from the 1996 and 1997 data are not directly comparable with those for other years. The values presented in figure 3 for 1996 and 1997 are adjusted for the estimated effects of the differences in screening so as to be comparable with the statistics for other years; the 1996 and 1997 rates "adjusted for comparability in all years" as reported in *Household Food Security in the United States, 2009* (Nord et al., 2010, figure 3) were adjusted upward by the average difference between the adjusted and unadjusted rates for 1998, 1999, and 2000. Screening procedures have remained essentially unchanged since 1998, and the procedures used in 1995 differed negligibly from those in 1998 and later years. See Andrews et al. (2000) and Ohls et al. (2001) for detailed information about questionnaire screening and adjustments for comparability. From 1995-2000, the prevalence rates reflected an overall decline in food insecurity but also a 2-year cyclical component that was associated with data collection schedules (Cohen et al., 2002a). The CPS food security surveys over that period alternated between April in odd-numbered years and August or September in even-numbered years. The measured prevalence of food insecurity was higher in the August/September collections, suggesting a seasonal response effect. Since 2001, the survey has been conducted in early December, which avoids further problems of seasonality effects in interpreting annual changes. A smaller food security survey was also conducted in April 2001 to provide a baseline for assessing seasonal effects of data collection in December. Comparison of food security statistics from the April 2001 survey with those from April 1999 and December 2001 suggest that seasonal effects in early December were similar to those in April (Nord et al., 2002a).

Table 1B

Households with children by food security status, and children by food security status of household, 1998-2010

Category and year	Total[1]	Food-secure households		Food-insecure households[2]		Households with food-insecure children[3]		Households with very low food security among children	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
Households with children:									
2010	39,419	31,447	79.8	7,972	20.2	3,861	9.8	386	1.0
2009	39,525	31,114	78.7	8,411	21.3	4,208	10.6	469	1.2
2008	39,699	31,364	79.0	8,335	21.0	4,361	11.0	506	1.3
2007	39,390	33,160	84.2	6,230	15.8	3,273	8.3	323	.8
2006	39,436	33,279	84.4	6,157	15.6	3,312	8.4	221	.6
2005	39,601	33,404	84.4	6,197	15.6	3,244	8.2	270	.7
2004	39,990	32,967	82.4	7,023	17.6	3,808	9.5	274	.7
2003	40,286	33,575	83.3	6,711	16.7	3,606	9.0	207	.5
2002	38,647	32,267	83.5	6,380	16.5	3,456	8.9	265	.7
2001	38,330	32,141	83.9	6,189	16.1	3,225	8.4	211	.6
2000	38,113	31,942	83.8	6,171	16.2	3,282	8.6	255	.7
1999	37,884	32,290	85.2	5,594	14.8	3,089	8.2	219	.6
1998	38,036	31,335	82.4	6,701	17.6	3,627	9.5	331	.9
Children (by food security status of household):[4]									
2010	74,905	58,697	78.4	16,208	21.6	8,458	11.3	976	1.3
2009	74,207	57,010	76.8	17,197	23.2	8,957	12.1	988	1.3
2008	74,106	57,433	77.5	16,673	22.5	9,098	12.3	1,077	1.5
2007	73,575	61,140	83.1	12,435	16.9	6,766	9.2	691	.9
2006	73,587	60,959	82.8	12,628	17.2	7,065	9.6	430	.6
2005	73,604	61,201	83.1	12,403	16.9	6,718	9.1	606	.8
2004	73,039	59,171	81.0	13,868	19.0	7,823	10.7	545	.7
2003	72,969	59,704	81.8	13,265	18.2	7,388	10.1	420	.6
2002	72,542	59,415	81.9	13,127	18.1	7,397	10.2	567	.8
2001	72,321	59,620	82.4	12,701	17.6	6,866	9.5	467	.6
2000	71,763	58,867	82.0	12,896	18.0	7,018	9.8	562	.8
1999	71,418	59,344	83.1	12,074	16.9	6,996	9.8	511	.7
1998	71,282	57,255	80.3	14,027	19.7	7,840	11.0	716	1.0

[1]Totals exclude households for which food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2010, these exclusions represented 165,000 households (0.4 percent of all households with children).

[2]Food-insecure households are those with low or very low food security among adults or children or both.

[3]Households with food-insecure children are those with low or very low food security among children.

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

Sources: Calculated by ERS using data from the August 1998, April 1999, September 2000, December 2001, December 2002, December 2003, December 2004, December 2005, December 2006, December 2007, December 2008, December 2009, and December 2010 Current Population Survey Food Security Supplements.

Prevalence of Food Insecurity by Selected Household Characteristics

The prevalence of food insecurity varied considerably among households with different demographic and economic characteristics (table 2). Food insecurity was strongly associated with income. For example, 40.2 percent of households with incomes below the official poverty line were food insecure, compared with 7.4 percent of those with incomes above 185 percent of the poverty line.[9] Differences in food security across demographic and

[9]The Federal poverty line was $22,113 for a family of four in 2010.

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

When households experience very low food security in the United States, the resulting instances of reduced food intake and disrupted eating patterns are usually occasional or episodic but are not usually chronic. The food security measurement methods used in this report are designed to register these occasional or episodic occurrences. The questions used to assess households' food security status ask whether a condition, experience, or behavior occurred at any time in the past 12 months, and households can be classified as having very low food security based on a single, severe episode during the year. It is important to keep this aspect of the scale in mind when interpreting food insecurity statistics. Analysis of additional information collected in the food security survey on how frequently various food-insecure conditions occurred during the year, whether they occurred during the 30 days prior to the survey, and, if so, in how many days, provide insight into the frequency and duration of food insecurity in U.S. households. These analyses reveal that in 2010:

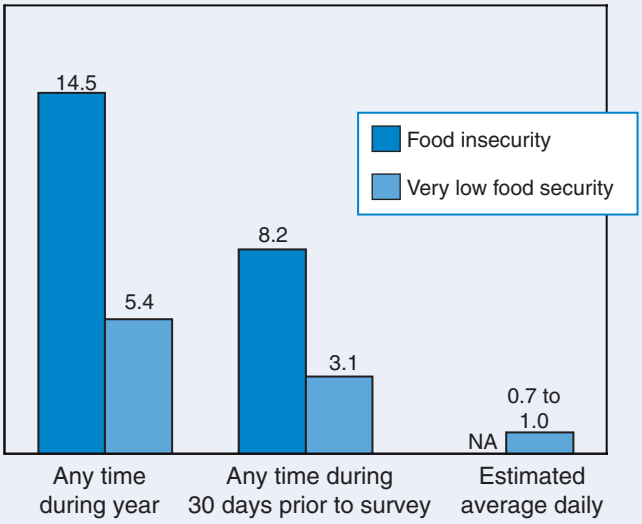
- About one-fourth of the households with very low food security at any time during the year experienced the associated conditions rarely or occasionally—in only 1 or 2 months of the year. For three-fourths of households, the conditions were recurring, experienced in 3 or more months of the year.
- For about one-fourth of food-insecure households and one-third of those with very low food security, occurrence of the associated conditions was frequent or chronic. That is, the conditions occurred often, or in almost every month.
- On average, households that were food insecure at some time during the year were food insecure in 7 months during the year (see Statistical Supplement, table S-5, http://www.ers.usda.gov/publications/ap/ap057). During the 30-day period ending in mid-December 2010, 9.7 million households (8.2 percent of all households) were food insecure—about 56 percent of the number that were food insecure at any time during the year.
- Similarly, households with very low food security at some time during the year experienced the associated conditions, on average, in 7 months during the year (see Statistical Supplement, table S-5, http://www.ers.usda.gov/publications/ap/ap057). During the 30-day period ending in mid-December 2010, 3.7 million households (3.1 percent of all households) had very low food security—about 58 percent of the number with very low food security at some time during the year.
- Most households that had very low food security at some time during a month experienced the associated conditions in 1 to 7 days of the month. The average daily prevalence of very low food security during the 30-day period ending in mid-December 2010 was probably between 0.8 and 1.2 million households (0.7 to 1.0 percent of all households)—about 12 to 19 percent of the annual prevalence.
- The daily prevalence of very low food security among children during the 30-day period ending in early December 2010 was probably between 46,000 and 56,000 households (0.12 to 0.14 percent of households with children)—about 12 to 14 percent of the annual prevalence.

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

Statistical Supplement tables S-8 to S-10 (http://www.ers.usda.gov/publications/ap/ap057) provide information on how often conditions indicating food insecurity occurred, as reported by respondents to the December 2010 food security survey. See Nord et al., 2000, for more information about the frequency of food insecurity.

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

Percent of households

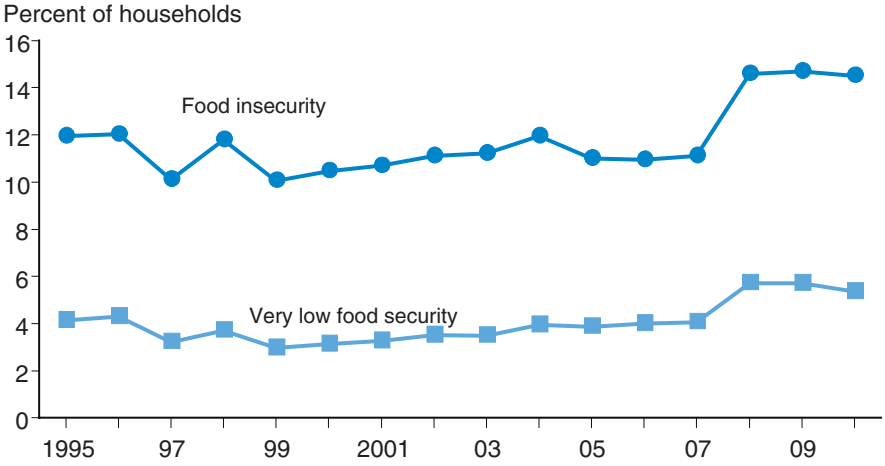


NA = Estimate of average daily occurrence of food insecurity not available.

Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

Figure 3

Trends in the prevalence of food insecurity and very low food security in U.S. households, 1995-2010[1]



[1]Prevalence rates for 1996 and 1997 were adjusted for the estimated effects of differences in data collection screening protocols used in those years.

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

geographic groups reflect, in part, differences in income across those groups, as no adjustment is made for income in the statistics presented in this report.

Rates of food insecurity were below the national average of 14.5 percent for households with more than one adult and no children (9.9 percent), for households with elderly persons (7.9 percent), and for households with incomes above 185 percent of the poverty line (7.4 percent).[10] The prevalence of food insecurity was also below the national average for White, non-Hispanic households (10.8 percent) and for households headed by non-Hispanics of other, or multiple, races (12.7 percent).

Rates of food insecurity were higher than the national average for the following groups.

- Households with children, headed by single women (35.1 percent) or single men (25.4 percent), and other households with children in complex living arrangements (20.8 percent)[11]
- Black households (25.1 percent)
- Hispanic households (26.2 percent)
- Low-income households with incomes below 185 percent of the poverty threshold (33.8 percent)

Food insecurity was more prevalent among households with children (20.2 percent) than among those with no children (11.7 percent).[12] Among households with children, those headed by a married couple showed the lowest rate of food insecurity (13.8 percent).

Across the metropolitan area classifications, the prevalence of food insecurity was highest for households located in principal cities of metropolitan areas (17.0 percent), moderate for those in nonmetropolitan areas (14.7 percent), and lowest in suburbs and other metropolitan areas outside principal cities

[10]"Elderly" in this report refers to persons ages 65 and older.

[11]Some households with children headed by single women or single men as classified for these analyses included other adults, who may have been parents, siblings, cohabiting partners, children, or other relatives of the reference person or unrelated roomers or boarders.

[12]About one-third of the difference in food insecurity between households with and without children results from a difference in the measures applied to the two types of households. Responses to questions about children as well as adults are considered in assessing the food security status of households with children, but for both types of households, a total of three indications of food insecurity is required for classification as food insecure. Even with the child-referenced questions omitted from the scale, however, 17.2 percent of households with children would be classified as food insecure (that is, as having food insecurity among adults), compared with 11.7 percent for households without children. Comparisons of very low food security are not biased substantially by this measurement issue because a higher threshold is applied to households with children consistent with the larger number of questions taken into consideration.

Table 2

Households by food security status and selected household characteristics, 2010

Category	Total[1]	Food secure		Food insecure					
				All		With low food security		With very low food security	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
All households	118,756	101,527	85.5	17,229	14.5	10,872	9.1	6,357	5.4
Household composition:									
With children < 18 yrs	39,419	31,447	79.8	7,972	20.2	5,724	14.5	2,248	5.7
With children < 6 yrs	17,780	13,899	78.2	3,881	21.8	2,850	16.0	1,031	5.8
Married-couple families	25,729	22,179	86.2	3,550	13.8	2,636	10.2	914	3.6
Female head, no spouse	10,081	6,547	64.9	3,534	35.1	2,450	24.3	1,084	10.8
Male head, no spouse	2,980	2,223	74.6	757	25.4	558	18.7	199	6.7
Other household with child[2]	629	498	79.2	131	20.8	81	12.9	50	7.9
With no children < 18 yrs	79,337	70,080	88.3	9,257	11.7	5,148	6.5	4,109	5.2
More than one adult	47,112	42,468	90.1	4,644	9.9	2,781	5.9	1,863	4.0
Women living alone	17,644	15,218	86.3	2,426	13.7	1,329	7.5	1,097	6.2
Men living alone	14,582	12,394	85.0	2,188	15.0	1,038	7.1	1,150	7.9
With elderly	29,438	27,102	92.1	2,336	7.9	1,563	5.3	773	2.6
Elderly living alone	11,565	10,640	92.0	925	8.0	551	4.8	374	3.2
Race/ethnicity of households:									
White, non-Hispanic	83,113	74,117	89.2	8,996	10.8	5,512	6.6	3,484	4.2
Black, non-Hispanic	14,600	10,941	74.9	3,659	25.1	2,332	16.0	1,327	9.1
Hispanic[3]	14,109	10,416	73.8	3,693	26.2	2,507	17.8	1,186	8.4
Other	6,933	6,052	87.3	881	12.7	521	7.5	360	5.2
Household income-to-poverty ratio:									
Under 1.00	15,133	9,056	59.8	6,077	40.2	3,584	23.7	2,493	16.5
Under 1.30	20,907	13,039	62.4	7,868	37.6	4,757	22.8	3,111	14.9
Under 1.85	30,101	19,940	66.2	10,161	33.8	6,232	20.7	3,929	13.1
1.85 and over	62,335	57,710	92.6	4,625	7.4	3,092	5.0	1,533	2.5
Income unknown	26,319	23,876	90.7	2,443	9.3	1,548	5.9	895	3.4
Area of residence:[4]									
Inside metropolitan area	98,657	84,379	85.5	14,278	14.5	9,015	9.1	5,263	5.3
In principal cities[5]	32,732	27,171	83.0	5,561	17.0	3,491	10.7	2,070	6.3
Not in principal cities	49,000	42,831	87.4	6,169	12.6	3,902	8.0	2,267	4.6
Outside metropolitan area	20,099	17,147	85.3	2,952	14.7	1,858	9.2	1,094	5.4
Census geographic region:									
Northeast	21,731	19,036	87.6	2,695	12.4	1,665	7.7	1,030	4.7
Midwest	26,589	23,062	86.7	3,527	13.3	2,153	8.1	1,374	5.2
South	44,270	37,203	84.0	7,067	16.0	4,591	10.4	2,476	5.6
West	26,166	22,226	84.9	3,940	15.1	2,463	9.4	1,477	5.6

[1]Totals exclude households for which food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2010, these exclusions represented 459,000 households (0.4 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 residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2004 and later years but are not precisely comparable with those of earlier years.

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

Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

(12.6 percent).[13] Regionally, the prevalence of food insecurity was higher in the South (16.0 percent) and West (15.1 percent) than in the Midwest (13.3 percent) and Northeast (12.4 percent).

The prevalence of very low food security in various types of households followed a pattern similar to that observed for food insecurity. Percentages were lowest for married couples with children (3.6 percent), multiple-adult households with no children (4.0 percent), households with elderly persons (2.6 percent), White, non-Hispanic households (4.2 percent), households with incomes above 185 percent of the poverty line (2.5 percent), households residing outside principal cities within metropolitan areas (4.6 percent), and households in the Northeast (4.7 percent). Very low food security was more prevalent than the national average (5.4 percent) for households with children headed by single women (10.8 percent), women living alone (6.2 percent), men living alone (7.9 percent), Black, non-Hispanic households (9.1 percent), Hispanic households (8.4 percent), households with incomes below 185 percent of the poverty line (13.1 percent), and households located in principal cities of metropolitan areas (6.3 percent).

In 9.8 percent of households with children, one or more child was food insecure (table 3).[14] The prevalence of food insecurity among children was lowest in married-couple households (6.4 percent), White, non-Hispanic households (6.1 percent), households with incomes above 185 percent of the poverty line (3.7 percent), households located outside of principal cities in metropolitan areas (7.8 percent), and households in the Northeast (8.6 percent) and Midwest (8.2 percent). The percentage of households with food-insecure children was highest for female-headed households (17.7 percent), Black, non-Hispanic households (16.3 percent), Hispanic households (17.0 percent), households with incomes below 185 percent of the poverty line (20.0 percent), and households within principal cities of metropolitan areas (12.5 percent).

Very low food security among children was least prevalent in married-couple households, White, non-Hispanic households, and households with incomes above 185 percent of the poverty line. Very low food security among children was most prevalent in households headed by single women (1.8 percent), households headed by a Black (2.0 percent) or Hispanic person (1.8 percent), and households with incomes below 185 percent of the poverty line (2.1 percent).

Prevalence rates of food insecurity remained essentially unchanged from 2009 to 2010 in most categories analyzed (fig. 4). That is, the differences in the estimates could have resulted from sampling variation. However, the prevalence of food insecurity declined among households with children and among households with incomes below 130 percent of the poverty line and increased among households with more than one adult and no children.

The prevalence of very low food insecurity declined in several household categories from 2009 to 2010 and remained essentially unchanged in the rest (fig. 5). Declines were substantial for households with children, particularly for single-mother households, for women living alone, White, non-Hispanic households, households with incomes below 185 percent of the poverty line, households in metropolitan areas outside principal cities, and households in the South.

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

[14]Households are classified as having food insecurity among children if they report two or more food-insecure conditions among children in response to questions 11-18 in box on page 5 (Nord, 2009a).

Table 3

Prevalence of food security and food insecurity in households with children by selected household characteristics, 2010

Category	Total[1]	Food-secure households		Food-insecure households[2]		Households with food-insecure children[3]		Households with very low food security among children	
	1,000	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*	*1,000*	*Percent*
All households with children	39,419	31,447	79.8	7,972	20.2	3,861	9.8	386	1.0
Household composition:									
With children < 6 yrs	17,780	13,899	78.2	3,881	21.8	1,774	10.0	175	1.0
Married-couple families	25,729	22,179	86.2	3,550	13.8	1,646	6.4	170	.7
Female head, no spouse	10,081	6,547	64.9	3,534	35.1	1,780	17.7	179	1.8
Male head, no spouse	2,980	2,223	74.6	757	25.4	351	11.8	NA	NA
Other household with child[4]	629	498	79.2	131	20.8	85	13.5	NA	NA
Race/ethnicity of households:									
White, non-Hispanic	23,632	20,233	85.6	3,399	14.4	1,444	6.1	102	.4
Black, non-Hispanic	5,549	3,722	67.1	1,827	32.9	907	16.3	110	2.0
Hispanic[5]	7,463	5,178	69.4	2,285	30.6	1,267	17.0	133	1.8
Other	2,775	2,315	83.4	460	16.6	243	8.8	41	1.5
Household income-to-poverty ratio:									
Under 1.00	7,043	3,920	55.7	3,123	44.3	1,690	24.0	194	2.8
Under 1.30	9,791	5,686	58.1	4,105	41.9	2,123	21.7	225	2.3
Under 1.85	13,214	8,062	61.0	5,152	39.0	2,637	20.0	275	2.1
1.85 and over	19,056	17,310	90.8	1,746	9.2	706	3.7	66	.3
Income unknown	7,149	6,075	85.0	1,074	15.0	518	7.2	44	.6
Area of residence:[6]									
Inside metropolitan area	33,293	26,601	79.9	6,692	20.1	3,264	9.8	332	1.0
In principal cities[7]	10,418	7,839	75.2	2,579	24.8	1,300	12.5	134	1.3
Not in principal cities	17,332	14,376	82.9	2,956	17.1	1,357	7.8	139	.8
Outside metropolitan area	6,126	4,847	79.1	1,279	20.9	597	9.7	54	.9
Census geographic region:									
Northeast	6,726	5,525	82.1	1,201	17.9	576	8.6	46	.7
Midwest	8,359	6,849	81.9	1,510	18.1	682	8.2	60	.7
South	14,938	11,718	78.4	3,220	21.6	1,586	10.6	173	1.2
West	9,396	7,356	78.3	2,040	21.7	1,017	10.8	107	1.1

NA=Not reported; fewer than 10 households in the survey with this characteristic had very low food security among children.

[1]Totals exclude households for which food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2010, these exclusions represented 165,000 households with children (0.4 percent of all households with children).

[2]Food-insecure households are those with low or very low food security among adults or children or both.

[3]Households with food-insecure children are those with low or very low food security among children.

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

[5]Hispanics may be of any race.

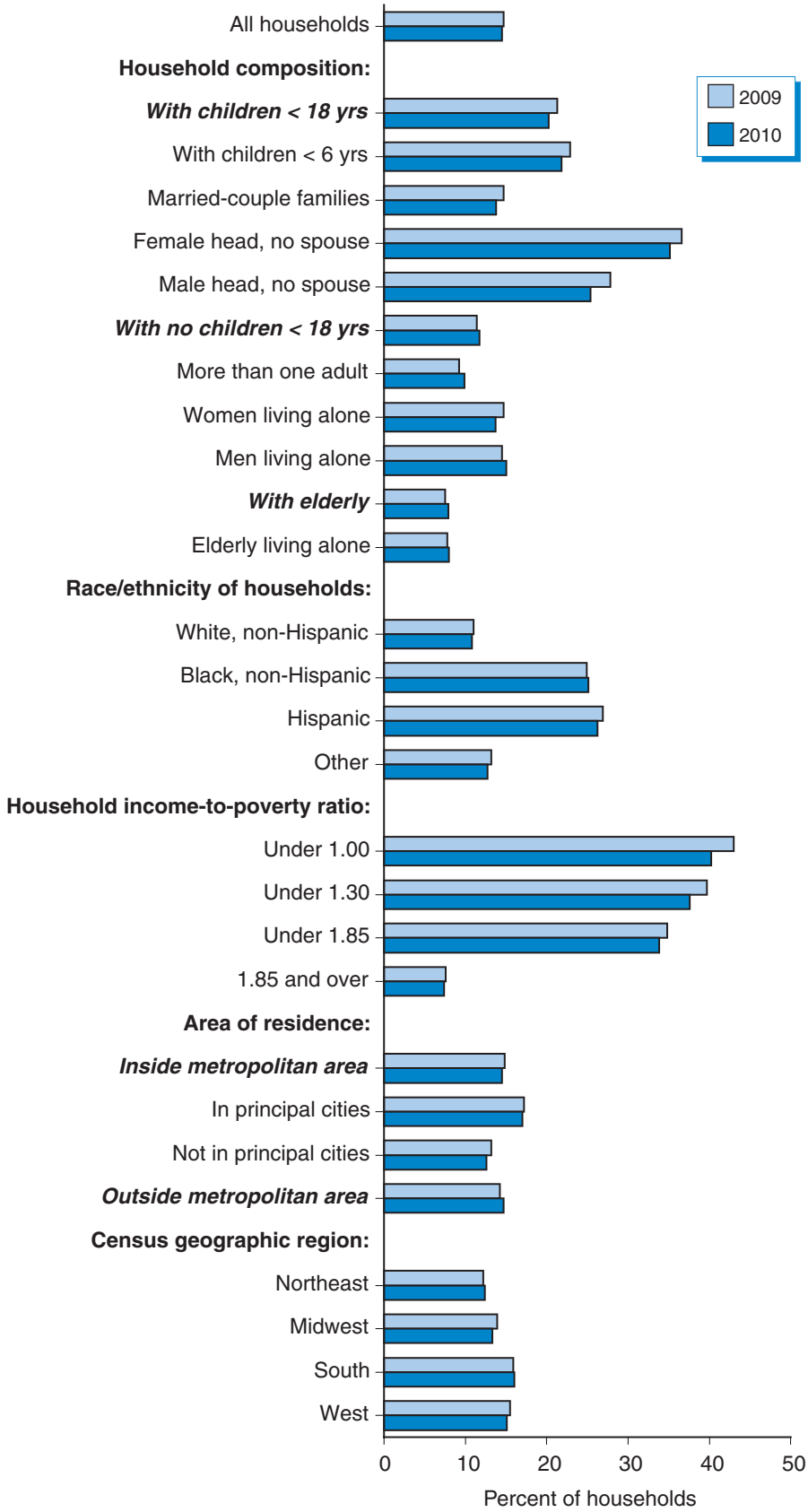
[6]Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2004 and later years but are not precisely comparable with those of earlier years.

[7]Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

Figure 4

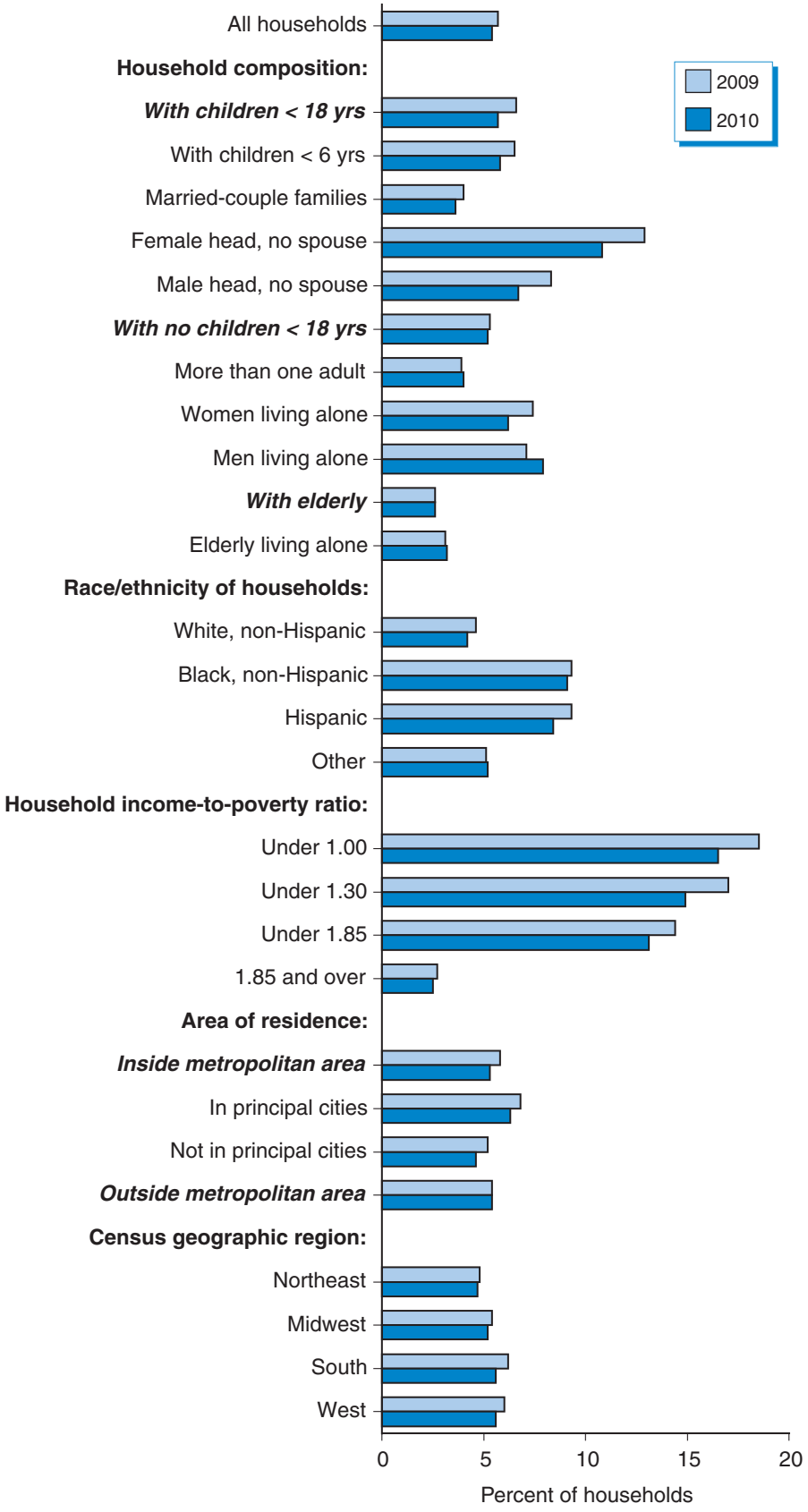
Prevalence of food insecurity, 2009 and 2010



Source: Calculated by ERS based on Current Population Survey Food Security Supplement data, December 2009 and December 2010.

Figure 5

Prevalence of very low food security, 2009 and 2010



Source: Calculated by ERS based on Current Population Survey Food Security Supplement data, December 2009 and December 2010.

Number of Persons by Household Food Security Status

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

In 2010, 48.8 million people lived in food-insecure households (see table 1A). They constituted 16.1 percent of the U.S. civilian noninstitutionalized population and included 32.6 million adults and 16.2 million children (see table 1B). About 8.5 million children (11.3 percent) lived in households in which one or more child was food insecure, 11.3 million adults (4.9 percent) lived in households with very low food security (see table 1A), and 976,000 children (1.3 percent) lived in households with very low food security among children (see table 1B).

Statistical supplement tables S-2 and S-3 present estimates of the number of people and the number of children in households in each food security status and household type (http://www.ers.usda.gov/publications/ap/ap057).

Prevalence of Food Insecurity by State

The prevalence of food insecurity varied considerably from State to State. Data from 3 years, 2008-10, were combined to provide more reliable statistics at the State level (table 4). Estimated prevalence rates of food insecurity during this 3-year period ranged from 7.1 percent in North Dakota to 19.4 percent in Mississippi; estimated prevalence rates of very low food security ranged from 2.7 percent in North Dakota to 7.5 percent in Arkansas and Oklahoma.

The margins of error for the State prevalence rates should be taken into consideration when interpreting these statistics and especially when comparing prevalence rates across States. The margin of error reflects sampling variation—the uncertainty associated with estimates that are based on information from a limited number of households in each State. The margins of error presented in table 4 indicate the range (above or below the estimated prevalence rate) within which the true prevalence rate is 90 percent likely to fall. For example, considering the margins of error, it is not certain that the prevalence of very low food security was higher in Oklahoma and Arkansas than in the States with the next 11 highest prevalence rates.

Taking into account margins of error of the State and U.S. estimates, the prevalence of food insecurity was higher (i.e., statistically significantly higher) than the national average in 9 States and lower than the national average in 20 States and the District of Columbia. In the remaining 21 States, differences from the national average were not statistically significant. The prevalence of very low

Table 4

Prevalence of household-level food insecurity and very low food security by State, average 2008-10[1]

States	Number of households		Food insecurity (low or very low food security)		Very low food security	
	Average 2008-10[2]	Interviewed	Prevalence	Margin of error[3]	Prevalence	Margin of error[3]
	Number	*Number*	*Percent*	*Percentage points*	*Percent*	*Percentage points*
U.S.	118,165,000	133,845	14.6	0.23	5.6	0.10
AK	251,000	1,735	13.6	1.79	4.9	1.30
AL	1,833,000	1,527	17.3*	2.26	7.0*	1.25
AR	1,166,000	1,585	18.6*	3.06	7.5*	1.44
AZ	2,553,000	1,619	15.3	1.61	5.9	1.00
CA	12,941,000	9,910	15.9*	.71	5.8	.40
CO	2,028,000	2,892	13.4	1.68	5.4	.81
CT	1,359,000	2,940	12.7*	1.12	4.8*	.72
DC	295,000	2,123	13.0*	1.54	4.5*	.79
DE	344,000	2,030	9.7*	1.09	4.0*	.84
FL	7,520,000	5,247	16.1*	.59	6.6*	.57
GA	3,746,000	2,840	16.9*	1.52	6.4	.88
HI	444,000	1,813	13.1*	1.27	5.0	.77
IA	1,243,000	2,599	12.1*	1.04	4.9	.99
ID	569,000	1,508	12.4*	1.52	4.6	.96
IL	4,946,000	4,044	12.9*	1.25	4.5*	.73
IN	2,460,000	2,118	13.0*	1.50	5.4	.67
KS	1,155,000	2,121	14.5	1.59	5.0	1.31
KY	1,751,000	2,093	15.6	1.67	5.7	.95
LA	1,777,000	1,377	12.6*	1.16	4.0*	.79
MA	2,576,000	2,037	10.8*	1.50	4.5*	1.04
MD	2,210,000	3,008	12.5*	1.30	5.1	.94
ME	542,000	2,764	15.4	1.27	6.8*	.88
MI	3,884,000	3,239	14.7	1.10	5.7	.91
MN	2,134,000	3,387	10.3*	.89	4.4*	.63
MO	2,438,000	2,295	15.8	1.41	6.6*	.89
MS	1,117,000	1,305	19.4*	2.22	6.9*	1.15
MT	419,000	1,444	14.1	1.47	5.6	1.11
NC	3,683,000	2,922	15.7*	1.09	5.2	.83
ND	272,000	1,927	7.1*	1.12	2.7*	.72
NE	711,000	2,092	12.7	2.04	5.2	.98
NH	526,000	2,917	9.6*	.90	4.1*	.86
NJ	3,138,000	2,549	12.1*	1.19	4.2*	.87
NM	789,000	1,086	15.4	1.82	5.6	1.19
NV	1,010,000	2,019	14.7	2.19	5.4	1.26
NY	7,598,000	5,494	12.9*	.75	5.1	.53
OH	4,612,000	3,829	16.4*	1.43	6.6*	.71
OK	1,474,000	1,697	16.4	1.80	7.5*	1.32
OR	1,513,000	1,977	13.7	1.57	6.1	1.33
PA	5,064,000	4,108	12.5*	1.00	5.0*	.54
RI	426,000	2,372	14.7	1.13	5.9	.76
SC	1,803,000	2,032	14.8	1.66	5.0	.86
SD	332,000	2,195	12.3*	1.52	5.4	.75
TN	2,525,000	1,914	15.0	1.52	6.0	.88
TX	8,951,000	6,339	18.8*	.89	6.9*	.41
UT	922,000	1,356	13.0	2.00	4.8	.82
VA	2,944,000	2,759	9.6*	1.05	3.3*	.77
VT	263,000	2,131	13.8	1.70	6.1	1.35
WA	2,634,000	2,338	14.7	1.55	6.1	1.05
WI	2,305,000	2,756	11.8*	.91	4.3*	.50
WV	745,000	1,584	14.1	2.05	5.3	1.10
WY	225,000	1,852	11.6*	1.98	4.3*	1.01

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

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

[2]Totals exclude households for which food security status is unknown because they did not give a valid response to any of the questions in the food security scale. These exclusions represented about 0.3 percent of all households in 2008 and 2009 and 0.4 percent in 2010.

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

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

food security was higher than the national average in 9 States, lower than the national average in 13 States and the District of Columbia, and not significantly different from the national average in 28 States.

State-level prevalence rates of food insecurity and very low food security for the period 2008-10 are compared with 3-year average rates for 2005-07 and 1996-98 in table S-4 of the statistical supplement (http://www.ers.usda.gov/publications/ap/ap057).

Household Spending on Food

This section provides information on how much households spent on food, as reported in the December 2010 food security survey. Food insecurity is a condition that arises from lack of money and other resources to acquire food. In most households, the majority of food consumed by household members is purchased—either from supermarkets or grocery stores to be eaten at home, or from cafeterias, restaurants, or vending machines to be eaten outside the home. The amount of money that a household spends on food, therefore, provides insight into how adequately the household is meeting its food needs.[15] When a household reduces food spending below some minimum level because of constrained resources, various aspects of food insecurity such as disrupted eating patterns and reduced food intake may result.

Methods

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

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

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. Analyses by ERS researchers have found that usual 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; Nord 2009b).

Food spending was adjusted for household size and composition in two ways. The first adjustment was calculated by dividing each household's usual weekly food spending by the number of persons in the household, yielding the "usual weekly food spending per person" for that household. The second adjustment accounts more precisely for the different food needs of households by comparing each household's usual food spending to the estimated cost of the Thrifty Food Plan for that household in December 2010.[17] The Thrifty Food Plan—developed by USDA—serves as a national standard for a nutritious, low-cost diet. It represents a set of "market baskets" of food that people in specific age and gender categories could consume at home to maintain a healthful diet that meets current dietary standards, taking into account the food consumption patterns of U.S. households (U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, 2007).[18] Each household's reported usual weekly food spending was divided by the household-specific cost of the Thrifty

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

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

[17]The cost of the Thrifty Food Plan is revised each month to account for inflation in food prices.

[18]The Thrifty Food Plan, in addition to its use as a research tool, is used as a basis for setting the maximum SNAP (food stamp) benefit amounts. However, beginning in April 2009, the American Recovery and Reinvestment Act increased SNAP benefits above the Thrifty Food Plan-based levels.

Food Plan based on the age and gender of each household member and the number of persons in the household (U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, 2011).[19]

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

About 8.5 percent of households interviewed in the CPS food security survey did not respond to the food spending questions or reported zero usual food spending and were excluded from the analysis. As a result, the total number of households represented in tables 5 and 6 is somewhat smaller than that in tables 1 and 2, and food spending estimates may not be fully representative of all households in the United States.[20]

Food Expenditures by Selected Household Characteristics

In 2010, the typical U.S. household spent $43.75 per person each week for food (table 5). This measure of food spending, which is not adjusted for food price inflation, was unchanged from 2009. Median household food spending relative to the cost of the Thrifty Food Plan—which adjusts for food price inflation and adjusts more precisely for the food needs of persons in different age-gender categories—was 1.17, down from 1.19 in 2009. That is, in 2010, the typical household spent 17 percent more on food than the cost of the Thrifty Food Plan for that household.

Households with children under age 18 generally spent less for food, relative to the cost of the Thrifty Food Plan, than those without children. The typical household with children spent 3 percent more on food than the cost of the Thrifty Food Plan, while the typical household with no children spent 23 percent more than the cost of the Thrifty Food Plan. Median food expenditures relative to the Thrifty Food Plan were lower for households with children headed by single women (0.96) than for married couples with children (1.06). Median food expenditure relative to the Thrifty Food Plan was highest for men living alone (1.40).

Median food expenditures relative to the cost of the Thrifty Food Plan were lower for Black, non-Hispanic households (1.01) and Hispanic households (0.96) than for White, non-Hispanic households (1.23). This pattern is consistent with the lower average incomes and higher prevalence rates of food insecurity of these racial and ethnic minorities.

As expected, households with higher incomes spent more money on food than lower income households.[21] 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 30 percent more than the cost of the Thrifty Food Plan.

[19]Thrifty Food Plan costs are estimated separately for Alaska and Hawaii, using adjustment factors calculated from USDA's Thrifty Food Plan costs for those States for the second half of 2010.

[20]Households that were unable or unwilling to report food spending were less likely to be food insecure than those that did report food spending (9.3 percent compared with 15.0 percent). Food spending may, therefore, be slightly underestimated from these data.

[21]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 5

Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP), 2010

Category	Number of households[1]	Median weekly food spending	
		Per person	Relative to cost of TFP
	1,000	*Dollars*	*Ratio*
All households	108,865	43.75	1.17
Household composition:			
With children < 18 yrs	37,082	33.33	1.03
At least one child < 6 yrs	16,785	31.25	1.02
Married-couple families	24,326	34.50	1.06
Female head, no spouse	9,454	32.50	.96
Male head, no spouse	2,721	33.33	.99
Other household with child[2]	582	32.00	.90
With no children < 18 yrs	71,783	50.00	1.23
More than one adult	42,895	46.00	1.18
Women living alone	15,652	50.00	1.23
Men living alone	13,236	65.00	1.40
With elderly	25,692	45.00	1.14
Elderly living alone	9,823	50.00	1.23
Race/ethnicity of households:			
White, non-Hispanic	76,388	49.00	1.23
Black, non-Hispanic	12,971	37.50	1.01
Hispanic[3]	13,195	33.33	.96
Other	6,311	40.00	1.09
Household income-to-poverty ratio:			
Under 1.00	14,238	33.33	.94
Under 1.30	19,650	33.33	.94
Under 1.85	28,291	33.33	.95
1.85 and over	59,278	50.00	1.30
Income unknown	21,296	41.50	1.11
Area of residence:[4]			
Inside metropolitan area	90,451	45.00	1.20
In principal cities[5]	29,815	45.00	1.20
Not in principal cities	44,977	45.00	1.21
Outside metropolitan area	18,414	40.00	1.05
Census geographic region:			
Northeast	19,916	45.00	1.21
Midwest	24,489	40.00	1.10
South	40,583	43.75	1.17
West	23,877	45.00	1.20

[1]Totals exclude households that did not answer the questions about spending on food or reported zero usual food spending. These exclusions represented 8.7 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 residence is based on 2003 Office of Management and Budget delineation. Food spending statistics by area of residence are comparable with those for 2004 and later years, but are not precisely comparable with those of earlier years.

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

Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

Median food spending relative to the cost of the Thrifty Food Plan was lower for households outside metropolitan areas (1.05) than for those inside metropolitan statistical areas (1.20). Regionally, median spending on food relative to the cost of the Thrifty Food Plan was lowest in the Midwest (1.10) and highest in the Northeast (1.21) and West (1.20).

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 1.21 among food-secure households, compared with 0.95 among food-insecure households (table 6). Thus, the typical food-secure household spent 27 percent more for food than the typical household of the same size and composition that was food insecure.

Table 6
Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP) by food security status, 2010

Category	Number of households[1]	Median weekly food spending	
		Per person	Relative to cost of TFP
	1,000	*Dollars*	*Ratio*
All households	108,865	43.75	1.17
Food security status:			
Food-secure households	92,334	45.00	1.21
Food-insecure households	16,288	34.00	.95
Households with low food security	10,303	34.00	.97
Households with very low food security	5,985	34.00	.93

[1]Total for all households excludes households that did not answer the questions about spending on food or reported zero usual spending for food. These exclusions represented 8.7 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 2010 Current Population Survey Food Security Supplement.

Federal Food and Nutrition Assistance Programs and Food Security

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

This section presents information about the food security status of households that participated in the three largest Federal food and nutrition assistance programs (see box, "Federal Food and Nutrition Assistance Programs," page 24). It also provides information about the extent to which food-insecure households participated in these programs. Total participation in the Federal food and nutrition assistance programs, participation rates of eligible households in those programs, and characteristics of participants in those programs are not described in this report. Extensive information on those topics is available from USDA's Food and Nutrition Service.[22]

Statistical supplement tables S-12 to S-15 provide information on food spending by participants and low-income nonparticipants in selected Federal and community food and nutrition assistance programs and about the extent to which households obtained assistance from community food pantries and emergency kitchens (http://www.ers.usda.gov/publications/ap/ap057).

Methods

The December 2010 CPS food security survey included questions about the use of Federal food and nutrition assistance programs. All households with incomes below 185 percent of the Federal poverty threshold were asked these questions. In order to minimize the burden on respondents, households with incomes above that range were not asked the questions unless they indicated some level of difficulty in meeting their food needs on preliminary screener questions (listed in footnote 5). The questions analyzed in this section are:

- "During the past 12 months…did anyone in this household get SNAP or food stamp benefits?"[23] Households that responded affirmatively were then asked in which months they received SNAP benefits and on what date they last received them. Information from these 3 questions was combined to identify households that received SNAP benefits 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.)

[22]Information on Federal food and nutrition assistance programs, including participation rates and characteristics of participants, is available from the FNS website at http://www.fns.usda.gov. Additional research findings on the operation and effectiveness of these programs are available from the ERS website at http://www.ers.usda.gov/briefing/foodnutritionassistance/.

[23]SNAP (Supplemental Nutrition Assistance Program) was formerly called the Food Stamp Program. Both names were mentioned in the survey question as well as the State's name for the program in States that used a different name.

- "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.)

Prevalence rates of food security, food insecurity, and very low food security were calculated for households reporting use of each food and nutrition assistance program and for comparison groups of nonparticipating households with incomes and household compositions similar to those of food assistance recipients. Statistics for participating households excluded households with incomes above the ranges specified for the comparison groups.[24] The proportions of food-insecure households participating in each of the three largest Federal food and nutrition assistance programs—the Supplemental Nutrition Assistance Program (SNAP), the National School Lunch Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)—were calculated, as well as the proportion that participated in any of the three programs. These analyses were restricted to households with annual incomes below 185 percent of the poverty line because most households with incomes above this range were not asked whether they participated in these programs.

[24]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.

Federal Food and Nutrition Assistance Programs

USDA's Food and Nutrition Service (FNS) administers 15 domestic food and nutrition assistance programs. The three largest programs are (see Oliveira, 2011, for more information):

- The Supplemental Nutrition Assistance Program (SNAP), formerly called the Food Stamp Program. The program provides monthly benefits for eligible low-income households to purchase approved food items at authorized food stores. Clients qualify for the program based on available household income, assets, and certain basic expenses. In an average month of fiscal year 2010 (October 1, 2009 through September 30, 2010), SNAP provided benefits to 40.3 million people in the United States (13 percent of individuals). The average benefit was about $134 per person per month, and total Federal expenditures for the program were $68.2 billion.
- The National School Lunch Program. The program operates in over 101,000 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 fiscal year 2010, the program provided lunches to an average of 31.6 million children each school day. Fifty-six percent of the lunches served in 2010 were free, and an additional 10 percent were provided at reduced prices.
- The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The program is a federally funded preventive nutrition program that provides grants to States to support distribution of supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and nonbreastfeeding postpartum women, for infants in low-income families, and for children in low-income families who are younger than 5 years old and who are found to be at nutritional risk. Most State WIC programs provide vouchers that participants use to acquire supplemental food packages at authorized food stores. In fiscal year 2010, WIC served an average 9.2 million participants per month at an average monthly cost for food (after rebates to the WIC program from manufacturers) of about $42 per person.

Food Security of Households That Received Food and Nutrition Assistance

The relationship between food security and the use of food and nutrition assistance programs is complex. There are reasons to expect that households that report using food and nutrition assistance programs in a one-time survey can either be more food secure or less food secure than low-income households not using those programs. Since the programs provide food and other resources to reduce the severity of food insecurity, households are expected to be more food secure after receiving program benefits than before doing so. On the other hand, it is the more food-insecure households, those having greater difficulty meeting their food needs, that seek assistance from the programs.[25] Fifty-two percent of households that received SNAP benefits were food insecure, as were 48 percent of households that received free or reduced-cost school lunches, and 46 percent of those that received WIC benefits (table 7). The prevalence of very low food security among households participating in SNAP was 8.8 percentage points higher than that of nonparticipating households in the same low-income range (20.1 percent versus 11.3 percent). For households that received free or reduced-cost school lunches, the prevalence of very low food security was more than twice that of nonparticipating households with school-age children in the same income range (15.6 percent versus 7.5 percent).

A possible complicating factor in interpreting table 7 is that food insecurity was measured over a 12-month period. An episode of food insecurity may have occurred at a different time during the year than the use of a specific food and nutrition assistance program. A similar tabulation using a 30-day measure of food insecurity largely overcomes this potential problem because

[25]This "self-selection" effect is evident in the association between food security and food program participation that is observed in the food security survey. Participating households were less food secure than similar nonparticipating households. More complex analysis using methods to account for this self-targeting is required to assess the extent to which the programs improve food security (see Ratcliffe and McKernan, 2010; Nord and Golla, 2009; Yen et al., 2008; Wilde and Nord, 2005; Gundersen and Oliveira, 2001; Gundersen and Gruber, 2001; Nelson and Lurie, 1998).

Table 7

Percentage of households by food security status and participation in selected Federal food and nutrition assistance programs, 2010

Category	Food secure	Food insecure		
		All	With low food security	With very low food security
	Percent			
Income less than 130 percent of poverty line:				
Received SNAP[1] benefits previous 12 months	48.4	51.6	31.5	20.1
Received SNAP benefits all 12 months	51.7	48.3	29.3	19.0
Received SNAP benefits 1 to 11 months	43.0	57.0	35.2	21.8
Did not receive SNAP benefits previous 12 months	72.3	27.7	16.4	11.3
Income less than 185 percent of poverty line; school-age children in household:				
Received free or reduced-price school lunch previous 30 days	52.2	47.8	32.2	15.6
Did not receive free or reduced-price school lunch previous 30 days	74.6	25.4	17.9	7.5
Income less than 185 percent of poverty line; children under age 5 in household:				
Received WIC[2] previous 30 days	54.4	45.6	33.4	12.3
Did not receive WIC previous 30 days	66.5	33.5	24.0	9.5

[1]SNAP (Supplemental Nutrition Assistance Program) was formerly called the Food Stamp Program.

[2]WIC is the Special Supplemental Nutrition Assistance Program for Women, Infants, and Children.

Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

measured food insecurity and reported use of food and nutrition assistance programs are more likely to refer to contemporaneous conditions when both are referenced to the previous 30 days. That tabulation shows patterns of food insecurity and the use of food and nutrition assistance programs that are similar to those in table 7, although 30-day prevalence rates were somewhat lower than the corresponding 12-month rates (see statistical supplement table S-16, http://www.ers.usda.gov/publications/ap/ap057).

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

Fifty-nine percent of food-insecure households reported receiving assistance from one or more of the three largest Federal food and nutrition assistance programs during the month prior to the December 2010 food security survey (table 8). SNAP provided assistance to 40.9 percent of food-insecure households, children in 32.4 percent received free or reduced-price school lunches, and women or children in 13.6 percent received WIC food vouchers.[26] Fifty-six percent of households classified as having very low food security reported participating in one or more of the three largest Federal food and nutrition assistance programs, and the largest share of these (41.5 percent) participated in SNAP.[27]

Table 8
Participation of food-insecure households in selected Federal food and nutrition assistance programs, 2010

Program	Share of food-insecure households that participated in the program during the previous 30 days[1]	Share of households with very low food security that participated in the program during the previous 30 days[1]
	Percent	
SNAP[2]	40.9	41.5
Free or reduced-price school lunch	32.4	27.2
WIC	13.6	9.8
Any of the three programs	59.2	55.9
None of the three programs	40.8	44.1

[1]SNAP (Supplemental Nutrition Assistance Program) was formerly called the Food Stamp Program.

[2]WIC is the Special Supplemental Nutrition Assistance Program for Women, Infants, and Children.

Source: Calculated by ERS using data from the December 2010 Current Population Survey Food Security Supplement.

[26]These statistics may be biased downward. It is known from comparisons between household survey data and administrative records that food program participation is underreported by household survey respondents, including those in the CPS (Meyer et al., 2009). This is probably true for food-insecure households as well, although the extent of underreporting by these households is not known. Statistics are based on the subsample of households with annual incomes below 185 percent of the poverty line. Not all of these households were eligible for certain programs. (For example, many households without pregnant women or children and with incomes above 130 percent of poverty would not have been eligible for any of the programs.)

[27]The statistics in table 8 were also calculated for households that were food insecure during the 30-day period prior to the survey. In principle, that analysis is preferable because food security status and use of programs are more certainly contemporaneous than when food insecurity is assessed over a 12-month period. However, the results differed only slightly from those in table 8 and are not presented separately.

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