

# September 2000 Food Security Supplement Data File: Technical Documentation

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Revised/Updated: July 17, 2001—release of first draft, August 22, 2001—revised to note logical record length, November 28, 2001—revised to change name to children's food security scale

## Overview

This document provides technical information on the Current Population Survey Food Security Supplement (CPS-FSS) conducted by the U.S. Census Bureau for the U.S. Department of Agriculture in September 2000.

The CPS-FSS is available from the U.S. Census Bureau in three formats: ASCII format on CD-ROM, ASCII format via the DataFerrett system, and SAS transport format via the DataFerrett system. The Food Security in the United States briefing room provides additional documentation, a facsimile of the questionnaire, and information on the concepts and history of the food-security measurement project.

## Technical Description

The CD-ROM data file is in ASCII format and consists of 134,856 logical records. The length of each record is 1,115 characters. Each record represents one person in a surveyed household or one address that was selected for the core labor force survey but that either was vacant, was not a residence, could not be contacted, or refused to participate. Noninterview households (13,198) are included in the CD-ROM file with their noninterview status indicated. Interviewed households (47,878) include 121,658 person records. Households that completed the Food Security Supplement as well as the labor force survey (40,460) include 103,320 person records.

The DataFerrett system files do not include noninterview households (but do include interviewed households with Supplement data missing). Data files downloaded from DataFerrett, therefore, exclude noninterview households and consist of 121,658 records representing 47,878 households.

A subset of variables on each record contains data about the household of which the person is a part. These variables have the same value for all persons in the same interview household.

## Contents of the Data File

The file includes data in three general categories:

(1) Monthly labor force survey data and recodes, collected by the Census Bureau for the Bureau of Labor Statistics. These variables are described briefly in the data dictionary. For concepts and definitions underlying these data, users should refer to the technical documentation for the CPS monthly labor force data available from the Bureau of Labor Statistics. Included are geographic, demographic, income, and employment data that may be of interest to those analyzing the Food Security Supplement data.

(2) Food Security Supplement data, collected by the Census Bureau for the United States Department of Agriculture. These data consist of answers by household respondents to questions about household food expenditures, use of food assistance programs, and experiences and behaviors related to food security, food

insecurity, and hunger. All of the Food Security Supplement data are household-level data except for the Supplement person weight.

(3) Food security and hunger scale and status indicators calculated from the Food Security Supplement data by the Economic Research Service of the United States Department of Agriculture. These indicate the screening status of the household, as well as continuous and categorical measures of food security status. They are all household-level variables.

## **Contents of the Food Security Supplement Questionnaire**

A facsimile of the Food Security Supplement questionnaire is available on the ERS website (address at end of this document) and on the public-use data file CD-ROM available from the Census Bureau. Variable names in the data dictionary generally consist of the prefix HE (household variable, edited) followed by the question number from the questionnaire. The major sections are as follows:

(1) Food Spending (HES1-HES8).

(2) Food Assistance Program Participation (HES9-HESP9).

(3) Food Sufficiency and Food Security (HESS1-HESSH5A). This section includes the 18 food security and hunger questions that are used to calculate the household food security scale.

(4) Ways of Avoiding or Ameliorating Food Deprivation—Coping Strategies (HESC1-HESC4).

(5) Minimum Food Spending Needed (HES10-HES12)

## **Changes from Previous Years' Food Security Supplements**

The following changes were introduced in the 2000 Food Security Supplement:

- The question on reduced-cost meals for the elderly was split into two questions (HESP5, HESP5A) to clearly include both meals delivered to the home as well as meals at a community center or senior center.
- A question was added to ask about free or reduced-cost food received at a day care or Head Start program (HESP7A).
- The split ballot test of the two forms of the USDA/NHANES food sufficiency questions was discontinued. The single-question form (HESS1) was retained.
- A split ballot test of variants of the first three questions in the food security scale (HESS2A, HESS3A, and HESS4A) was initiated for households in rotation 8. The questions were proposed by Health Canada for national surveys in Canada.
- The split ballot test of individually referenced questions conducted in 1998 and 1999 was discontinued.
- A split ballot test of follow-ups to six questions in the hunger and severe hunger series (HESHF2A, HESHF3A, HESHF4A, HESSHF1A, HESSHF2A, HESSHF4A) was initiated for households in rotation 8. The test question asks, "In months when [behavior or experience occurred], how many days did this usually happen?" The 30-day followup question for these households was skipped.
- A revised method was introduced for asking about the minimum amount households need to spend for food in order to meet the needs of the household (HES10, HES11, HES12).
- Three variables based on the children's food security scale are included in the data file (HRFS12M5, HRFS12M6, HRFS12M7) to characterize food stress among children. The scale is calculated from the 8 child-referenced questions in the household food security scale and did not require any changes to the questionnaire.

## Screening of the Food Security Supplement

The Food Security Supplement includes several screens to reduce respondent burden and to avoid embarrassing respondents by asking them questions that are inappropriate given other information they have provided in the survey. The screener variables use information from the monthly labor force core data as well as from the Food Security Supplement. Households with incomes above 185 percent of the poverty threshold (HRPOOR=2, estimated from HUFAMINC and HRNUMHOU) that responded "no" to HES9 were not asked the questions on participation in food assistance programs. Households with income above 185 percent of poverty that registered no indication of food stress on HES9 or HESS1 were not asked the rest of the questions in the "Food Sufficiency and Food Security" section or those in the "Ways of Avoiding or Ameliorating Food Deprivation" section. There are also two "internal" screeners in the main food security section (the questions that are used to calculate the household food security scale). This series of questions is divided into three blocks. After each of the first two blocks, households that registered no indication of food stress in the preceding block are skipped over the rest of the "Food Sufficiency and Food Security" section.

The screening rules that determine whether a household was asked the questions in the food security scale varied somewhat during the first 4 years of fielding the Food Security Supplement. These different screening procedures biased estimated prevalences of food insecurity and hunger differently in each year. Adjustments must be made for these differences to compare prevalences of food security and hunger across years. This topic is discussed further below under the heading "Food Security Scales and Screener Variables."

Screeners also were applied based on whether the household included any children, so that households without children were not asked questions that refer specifically to children. For this purpose, persons 17 or younger are classified as children except those who are household reference persons or spouses of household reference persons (PERRP=1, 2, or 3). In the 2000 Food Security Supplement, unlike in previous years, the exception for minor reference persons and spouses of reference persons was made in the survey instrument and is, therefore, correctly reflected in the responses in the data file.

## Food Security Scales and Screener Variables

The main purpose of the Food Security Supplement is to provide information about food security, food insecurity, and hunger in the Nation's households. Several variables are provided in the data file that identify the food security status of each household during the previous 12 months. All of these variables are based on responses to a set, or subset, of 18 questions in the Supplement that are indicators of food insecurity and hunger. HRFS12M3 is the raw score—a count of the number of questions affirmed by the household respondent. HRFS12M4 is the household food security scale score, a continuous score based on fitting the data to a single-parameter Rasch model using item calibrations calculated from the 1998 data. Computed values range from about 1 to 14. Scale scores for households that affirmed no items cannot be calculated within the Rasch model. These households are food secure, but the degree of their food security is not known and may vary widely from household to household. They are assigned scale scores of -6 to remind users that they require special handling in analyses that assume linearity of the scale scores. HRFS12M1 is a categorical variable based on the scale score that classifies households in three categories: food secure, food insecure without hunger, and food insecure with hunger. HRFS12M2 is the same as HRFS12M1 except that the food-insecure-with-hunger category is subdivided to level 1 and level 2 hunger. The level 2 hunger category corresponds operationally with the "Severe Hunger" category described in Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project and with the "Food Insecure with Hunger (Severe)" category described in Guide to Measuring Household Food Security - 2000, both published by the Food and Nutrition Service.

A second set of food security status variables indicating the level of food stress among children in the

household is calculated from responses to the eight questions in the scale that ask specifically about conditions among the children. The children's food security scale variables are HRFS12M6 (raw score), HRFS12M7 (Rasch-based scale score), and HRFS12M5 (2-category children's hunger status indicator).

The food security variables described above are based on responses to the 18 food security indicator questions as they were administered in the 2000 survey. They are directly comparable to the corresponding variables in the August 1998 and April 1999 surveys. A second set of food security scale and status indicators are provided to facilitate comparisons to years prior to 1998. These "common screen" variables are adjusted for interyear differences in survey screening procedures and are comparable to corresponding variables in all earlier years' CPS-FSS data files. Prevalence estimates based on these common-screen variables are comparable across all survey years. The common-screen-based food security variables are HRFS12C3 (raw score), HRFS12C4 (Rasch-based scale score), HRFS12C1 (three-category food security status indicator), and HRFS12C2 (4-category food security status indicator). The common-screen food security variables are needed because the screening procedures used in administering the Food Security Supplements varied somewhat from year to year. In all years, households that were screened out after a few initial questions are classified as food secure. However, comparisons across years of the item responses of households with identical responses to the preliminary screener variables show that some households that were screened out under more stringent screening rules would have been classified as food insecure (or, in a few cases, even as food insecure with hunger) if they had not been screened out. The screening procedures, therefore, bias prevalence estimates of food security and hunger downward, and the extent of the bias varies across years. To compare prevalence rates to years prior to 1998, it is essential to adjust the data from each year so that it matches, as nearly as possible, a common set of screening procedures. That is, negative responses must be imputed to households that would have been screened out at the initial screener in any year. For surveys prior to 1998, negative responses also must be imputed to "downstream" variables for households that would have been screened out at either of the internal screens that were first implemented in 1998. Adjustment of the children's food security scale variables for screening differences is not necessary. The effects of the different screening procedures on the measured prevalence of hunger among children is negligible.

Two screener status variables are provided. HRFS12MS refers to screening status under the screen that was applied when the survey was administered (the "maximum-sample screen.") The variable indicates whether the household was screened out at the initial screen (before the first of the 18 scale questions), or was screened out after the first or second blocks of questions, or was not screened out and was asked all questions. Households that were screened out at the initial screen without giving a valid response to either screening question, or who were screened out after the first or second block without having given a valid response to any of the questions in the scale are coded as "Missing" (-5) on HRFS12MS. The corresponding food security scale and status variables for these households (HRFS12M1 through HRFS12M7) are coded as "No Response" (-9).

HRFS12CS refers to screening status under the 1995-2000 common screen. Categories are the same as for the maximum-sample screen variable, and households that would have been screened out with no valid responses to any of the indicator questions under the common screen are coded as "Missing" (-5). Common-screen food security scale and status variables (HRFS12C1 through HRFS12C4) for these households are coded as "No Response" (-9).

## **Constructing Household Characteristics from Person Records**

To compute some household characteristics such as household size, presence of children, or presence of elderly members, it is necessary to identify the records of all persons in the same household. Households are uniquely and completely identified by State of residence (GESTCEN), household identifier (HRHHID), and household serial suffix (HSERSUF). Sort records within households by PERRP if the household reference person record must be the first record in the household. To match to other months' CPS files, add the HRMIS

variable to the household identification, adjusting one of the files for the difference in survey month. For matching to the March Annual Demographic Supplement, HRSERSUF may need to be recoded.

## **Weights—Estimating Population Distributions of Person and Household Characteristics**

The CPS is a complex probability sample, and interviewed households as well as persons in those households are assigned weights so that the full interviewed sample represents the total national noninstitutionalized population. Initial weights are assigned based on probability of selection into the sample, and weights are then adjusted iteratively to match population controls for selected demographic characteristics at State and National levels. There are two sets of household and person weights in this data file: (1) labor force survey weights, (2) Food Security Supplement weights.

The labor force survey weights, HWHHWGT for households and PWSSWGT for persons, are positive for persons in all interviewed households. These weights would be appropriate for analyzing whether households or persons who completed the Supplement differed from those who declined to complete the Supplement.

About 12 percent of households completed the core labor force survey but declined to complete the Food Security Supplement. The Supplement weights, HHSUPWGT for households and PWSUPWGT for persons, are adjusted for Supplement nonresponse so that the Supplement respondents represent the national noninstitutionalized population. These weights are appropriate for estimating household distributions of variables in the Food Security Supplement, including food security status.

Household weights are attached to all person records in the household. To estimate household frequency distributions, the sample must be limited to one record for each household. This is usually accomplished by limiting the sample to records of household reference persons (PERRP=1 or 2). Noninterview or nonsupplement households must be excluded from these analyses based on HRINTSTA or HRSUPINT.

All weight variables have four implied decimal places in the CD-ROM (the decimal point is not included). Divide the weight variables by 10,000 for analysis in units or by 10,000,000 for analysis in thousands of persons or thousands of households. The format of weight variables downloaded from Ferrett are somewhat unpredictable. Sometimes they are in units; sometimes they have four implied decimal places. These should be checked prior to use.

## **Further Information**

Information on the Federal Food Security Measurement Project, and on survey and measurement issues, is available from:

United States Department of Agriculture, Economic Research Service  
Contact Mark Nord 202-694-5433; [marknord@ers.usda.gov](mailto:marknord@ers.usda.gov)

United States Department of Agriculture, Food and Nutrition Service  
Contact Gary Bickel 703-305-2125; [gary.bickel@fns.usda.gov](mailto:gary.bickel@fns.usda.gov)