CPS 1999 Children's and 30-Day Food Security Data File: Technical Documentation

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Background

Subsequent to the release of the April 1999 Current Population Survey Food Security Supplement (CPS-FSS) public-use data file, USDA developed two additional food security scales to describe aspects of food security conditions in interviewed households not captured by the 12-month household food security scale.

- The Children's Food Security Scale, described in Measuring Children's Food Security in U.S. Households, 1995-99 (Food Assistance and Nutrition Research Report No. 25, USDA, Economic Research Service, April 2002, by Mark Nord and Gary Bickel).

- The 30-day CPS Food Security Scale, described in A 30-Day Food Security Scale for Current Population Survey Food Security Supplement Data (ERS E-FAN Report No. 02015, USDA, Economic Research Service, August 2002, by Mark Nord).

The CPS 1999 Children's and 30-day Food Security Data File provides three food security variables (categorical, raw score, and scale score) for each of these scales along with household identification variables to allow the user to match this supplementary data file to the CPS-FSS April 1999 data file. This document provides information on how to read the data file as well as an overview on weighting, screening, and interpretation issues relevant to the scales. Users should refer to the reports listed above for more complete information about the scales.

Technical Description

The CPS 1999 Children's and 30-day Food Security microdata file (fs99xtra.dat) is in ASCII format and is also available zipped. The file consists of 41,311 logical records. The length of each record is 35 characters. Each record represents one supplement-interview household (HRSUPINT=1) in the April 1999 CPS. Noninterview and nonsupplement-interview households are excluded. The CPS 1999 Children's and 30-day Food Security Data File is sorted by GESTCEN, HRHHID, and HRSERSUF and matches to the April 1999 CPS Food Security Supplement Data File by these three variables.

A data dictionary and SAS code to read the data file are provided below. Frequency tables for the variables are also provided.

Children's Food Security Scale

The children's food security scale measures the severity of food insecurity among children in surveyed households and identifies households in which children were hungry at times during the 12 months prior to the survey because the household lacked enough money for food. The scale is based on 8 of the 18 questions in the household food security scale that ask specifically about food-related experiences and conditions of children. The data file provides three variables based on the scale that describe the food security status of

children in each household during the 12 months prior to the survey. HRFS12M6 is the children's food security raw score—a count of the number of behaviors and conditions indicating food insecurity among the children that were reported by the household respondent. HRFS12M7—the children's food security scale score—is a graduated, interval-level measure of food insecurity appropriate for use in linear models. It is based on fitting the responses to the child-referenced items a single parameter Rasch model. Scale values range from about 4 to 13. Scale scores for households that affirmed no items cannot be calculated within the Rasch model. These households were less food insecure than those that affirmed one item, but their level of food security or food insecurity is not known and may vary from household to household. These households are assigned a scale score of 6 to remind users that they require special handling in analyses that assume linearity of the scale scores. HRFS12M5 is a categorical variable based on the scale score (or raw score), that classifies households as to whether any child in the household was hungry during the year because the household lacked money and other resources for food.

The categorical variable for children's food security status (HRFS12M5) identifies households vis-à-vis a single threshold—hunger among children. USDA has not specified a less severe threshold, but users who wish to implement a less severe threshold for monitoring or analytic purposes can do so based either on the raw score or scale score. See Measuring Children's Food Security in U.S. Households, 1995-99, page 12, for further information on this topic.

No adjustment has been made for screening differences to make the 1999 children's food security variables comparable to years prior to 1998 (see technical documentation for the April 1999 CPS-FSS for information about screening differences across the years). The effects of year-to-year screening differences on the measured prevalence of hunger among children are negligible, and the effects at the lowest severity level measured by the children's food security scale are small. Users who wish to adjust the measure to maximize comparability with statistics from the 1995-97 data can do so using the variable HRFS12CS in the main April 1999 CPS-FSS data file to identify screening status under the "common screen." For households screened out at the preliminary screener (HRFS12CS=1), the children's food security raw score should be set to 0, scale score to –6, and food security status to 1.

The appropriate sampling weights for use with the children's food security scale are the Household Food Security Status Weight (HHFSWGT) and Person Food Security Status Weight (PWFSWGT). These adjust for the exclusion of households in part of the 8th rotation, which were administered experimental versions of some food security questions in 1999 and do not have valid scores on the standard measures.

30-day CPS Food Security Scale

The 30-day CPS food security scale measures the severity of food insecurity in the household during the 30 days prior to the survey. It is based on follow-up questions to a subset of the questions upon which the standard 12-month scale is based. Households reporting that a behavior or condition occurred during the past 12 months were asked whether it occurred during the past 30 days. The 30-day scale is conceptually and operationally consistent with the 12-month scale. That is to say, equal scores on the two scales represent (probabilistically) the same array of conditions and behaviors, differing only with regard to the time period (30 days versus 12 months) during which those conditions and behaviors may have occurred.

The data file provides three variables based on the scale that describe the food security status of each household during the previous 30 days. HRFS30M2 is the 30-day food security raw score—a count of the number of behaviors and conditions indicating food insecurity that were reported to have occurred during the past 30 days. HRFS30M3—the 30-day food security scale score—is a graduated, interval-level measure of food insecurity appropriate for use in linear models. It is based on fitting the responses to the 30-day-referenced items a single parameter Rasch model. Scale values range from about 3 to 13. Scale scores for households that affirmed no items cannot be calculated within the Rasch model. These households were less

food insecure than those that affirmed one item, but their level of food security or food insecurity is not known and may vary from household to household. These households are assigned a scale score of 6 to remind users that they require special handling in analyses that assume linearity of the scale scores. HRFS30M1 is a categorical variable based on the scale score (or raw score plus presence or absence of children in the household), that classifies households as to food security status during the month prior to the survey

The 30-day scale does not measure the less severe range of food insecurity measured by the 12-month scale because six of the less severe questions in the 12-month scale (3 for households without children) lack 30-day followup questions and therefore have no counterpart in the 30-day scale. As a result, the lowest threshold that can be identified by the 30-day scale is substantially more severe than the food-insecure threshold. It is appropriate to consider households that affirmed one or two items in the 30-day scale to be food insecure without hunger. However, it is not appropriate to describe all households with raw scores of zero as food secure. Some of these households were, in fact, food insecure during the 30-day period, but are not identified as food insecure by this scale. The lower threshold (one or more affirmatives) may be useful for both analytic and monitoring purposes, but appropriate language should be used to describe the ranges of severity below and above that threshold so that the meaning of the threshold is not confused with that of the food-insecure threshold on the 12-month scale.

No adjustment has been made for screening differences to make the 1999 30-day food security variables comparable to years prior to 1998 (see technical documentation for the April 1999 CPS-FSS for information about screening differences across the years). The effects of year-to-year screening differences on the measured prevalence of hunger are negligible, and the effects at the lowest severity level measured by the 30-day food security scale are modest. Users who wish to adjust the measure to maximize comparability with statistics from the 1995-97 data can do so using the variable HRFS12CS in the main April 1999 CPS-FSS data file to identify screening status under the "common screen." For households screened out at the preliminary screener (HRFS12CS=1), the 30-day food security raw score should be set to 0, scale score to –6, and food security status to 1. (Exception: missing values should be retained for all households in rotation 8 regardless of screening status.)

Households in rotation 8 (HRMIS=8) do not have valid values on the 30-day food security variables. These households were administered experimental versions of some of the food security questions, and these did not include 30-day follow-up questions. The appropriate sampling weights for use with the 30-day food security scale are the Household Supplement Weight (HHSUPWGT) and Person Supplement Weight (PWSUPWGT). These weights can be used as is to calculate percentages or to weight regression analyses. To estimate absolute numbers of households in categories specified by 30-day food security variables, the weights must be adjusted to account for the loss of about 1/8 of the sample. The appropriate multipliers are:

- 105,031,600 / 92,116,330 for HHSUPWGT (the weighted number of households in rotations 1-8 divided by the weighted number of households in rotations 1-7)

- 271,219,500 / 237,854,900 for PWSUPWGT (the weighted number of persons in rotations 1-8 divided by the weighted number of persons in rotations 1-7)

Data Dictionary: CPS 1999 Children's and 30-Day Food Security Data File

NAME	SIZE	DESCRIPTION	LOCATION

GESTCEN	2	Census State Code	1-2
HRHHID	15	Household Identifier	3-17
HRSERSUF	2	Serial Suffix	18-19
HRFS12M5	2	Children's Hunger Status, 12-Month Recall (Recode of HRFS12M7) EDITED UNIVERSE: HRSUPINT=1 and one or more persons in household with PERRP>3 and PRTAGE 0-17 and HHFSWGT gt 0 VALID ENTRIES: 1 Hunger unlikely among children 2 Food insecure with hunger among children -9 No response -1 Not in universe	20-21
HRFS12M6	2	Children's Food Security Raw Score, 12-Month Recall EDITED UNIVERSE: HRSUPINT=1 and one or more persons in household with PERRP>3 and PRTAGE 0-17 and HHFSWGT gt 0 VALID ENTRIES: 0 No affirmative responses or did not pass initial screen 1-8 Number of affirmative responses to the 8 food security items in the Children's Food Security Scale -9 No response -1 Not in universe	22-23
HRFS12M7	4	Children's Food Security Rasch Scale Score, 12-Month Recall EDITED UNIVERSE: HRSUPINT=1 and one or more persons in household with PERRP>3 and PRTAGE 0-17 and HHFSWGT gt 0 VALID ENTRIES: 4.11:12.25 Rasch scale score assigned to household (based on raw score, HRFS12M6) -6 Raw score=0; no scale score assigned -9 No Response -1 Not in universe	24-27 (2 implied decimals)
HRFS30M1	2	Summary Food Security Status, 30-Day Recall (Recode of HRFS30M3) EDITED UNIVERSE: HRSUPINT=1 and HRMIS<=7 VALID ENTRIES: 1 Food secure or low-severity level of food insecurity 2 Food insecure without hunger 3 Food insecure with hunger -9 No response	28-29

		-1 Not in universe	
HRFS30M2	2	Food Security Rasch Scale Score, 30-Day Recall EDITED UNIVERSE: HRSUPINT=1 and HRMIS<=7 VALID ENTRIES: 0 No affirmative responses or did not pass initial screen 1-12 Number of affirmative responses to the 12 food security items in the 30-day food security scale -9 No response -1 Not in universe	30-31
HRFS30M3	4	Food Security Rasch Scale Score, 30-Day Recall EDITED UNIVERSE: HRSUPINT=1 and HRMIS<=7 VALID ENTRIES: 4.90:12.49 Rasch scale score assigned to household (based on raw score, HRFS12M2 and presence or absence of children in the household) -6 Raw score=0; no scale score assigned -9 No Response -1 Not in universe -1 Not in universe	32-35 (2 implied decimals)

SAS Code to Read CPS 1999 30-Day Food Security Scale ASCII Data File

```
data temp; *modify data file name to suit your conventions;
infile 'd:\fs99xtra.dat' lrecl=35; *modify to actual path on your computer;

input
@1 gestcen 2.
@3 hrhhid $ 15.
@18 hrsersuf $ 2.
@20 hrfs12m5 2.
@22 hrfs12m6 2.
@24 hrfs12m7 4.
@28 hrfs30m1 2.
@30 hrfs30m2 2.
@32 hrfs30m3 4.;
*restore 2 decimal places to scale variables;
if hrfs12m7 gt 0 then hrfs12m7=hrfs12m7/100;
if hrfs30m3 gt 0 then hrfs30m3=hrfs30m3/100;
run;

*file contains 41,311 records, one for each supplement-interview household in April 1999 CPS Food Security
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Supplement data file;
*file is sorted by gestcen, hrhhid, hrsersuf and matches to the April 1999 CPS Food Security Supplement data file by these variables;

Frequencies of CPS 1999 Children's and 30-Day Food Security Variables

HH in supp (from ascii file with decimals restored), unweighted

hrfs12m5	Frequency	Percent	Cumulative frequency	Cumulative percent
-9	37	0.09	37	0.09
-1	28085	67.98	28122	68.07
1	13112	31.74	41234	99.81
2	77	0.19	41311	100.00

hrfs12m6	Frequency	Percent	Cumulative frequency	Cumulative percent
-9	37	0.09	37	0.09
-1	28085	67.98	28122	68.07
0	11210	27.14	39332	95.21
1	922	2.23	40254	97.44
2	500	1.21	40754	98.65
3	412	1.00	41166	99.65
4	68	0.16	41234	99.81
5	35	0.08	41269	99.90
6	18	0.04	41287	99.94
7	20	0.05	41307	99.99
8	4	0.01	41311	100.00

hrfs12m7	Frequency	Percent	Cumulative frequency	Cumulative percent
-9	37	0.09	37	0.09
-6	11210	27.14	11247	27.23
-1	28085	67.98	39332	95.21
4.11	922	2.23	40254	97.44
5.85	500	1.21	40754	98.65
7.54	412	1.00	41166	99.65
8.79	68	0.16	41234	99.81
9.62	35	0.08	41269	99.90
10.45	18	0.04	41287	99.94
11.5	20	0.05	41307	99.99
12.25	4	0.01	41311	100.00

hrfs30m1	Frequency	Percent	Cumulative frequency	Cumulative percent
-9	101	0.24	101	0.24
-1	5075	12.28	5176	12.53
1	34842	84.34	40018	96.87
2	599	1.45	40617	98.32
3	694	1.68	41311	100.00

hrfs30m2	Frequency	Percent	Cumulative frequency	Cumulative percent
-9	101	0.24	101	0.24
-1	5075	12.28	5176	12.53
0	34842	84.34	40018	96.87
1	318	0.77	40336	97.64
2	281	0.68	40617	98.32
3	281	0.68	40898	99.00
4	190	0.46	41088	99.46
5	85	0.21	41173	99.67
6	50	0.12	41223	99.79
7	60	0.15	41283	99.93
8	14	0.03	41297	99.97
9	6	0.01	41303	99.98
10	4	0.01	41307	99.99
11	3	0.01	41310	100.00
12	1	0.00	41311	100.00

hrfs30m3	Frequency	Percent	Cumulative frequency	Cumulative percent
-9	101	0.24	101	0.24
-6	34842	84.34	34943	84.59
-1	5075	12.28	40018	96.87
4.9	137	0.33	40155	97.20
4.92	181	0.44	40336	97.64
5.96	127	0.31	40463	97.95
6.02	154	0.37	40617	98.32
6.87	115	0.28	40732	98.60
7.04	166	0.40	40898	99.00
7.68	79	0.19	40977	99.19
8.06	111	0.27	41088	99.46
8.33	34	0.08	41122	99.54
8.86	14	0.03	41136	99.58
9.02	51	0.12	41187	99.70
9.35	21	0.05	41208	99.75
9.82	14	0.03	41222	99.78
10.07	36	0.09	41258	99.87
10.33	6	0.01	41264	99.89

10.85	39	0.09	41303	99.98
10.93	4	0.01	41307	99.99
11.77	3	0.01	41310	100.00
12.49	1	0.00	41311	100.00