CPS 2000 30-Day Food Security Data File: Technical Documentation

Prepared by Mark Nord
Economic Research Service, USDA
September 19, 2002

Background

Subsequent to the release of the September 2000 Current Population Survey Food Security Supplement (CPS-FSS) public-use data file, USDA developed a revised 30-day CPS Food Security Scale. The scale is 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 2000 30-day Food Security Data File provides three food security variables (categorical, raw score, and scale score) for the 30-day scale along with household identification variables to allow the user to match this supplementary data file to the CPS-FSS September 2000 data file. This technical documentation provides information on how to read the data file as well as an overview of weighting, screening, and interpretation issues relevant to the scale. Users should refer to the report listed above for more complete information about the scale.

Technical Description

The CPS 2000 30-day Food Security microdata file (fs00xtra.dat) is in ASCII format and is also available zipped. The file consists of 40,460 logical records. The length of each record is 27 characters. Each record represents one supplement-interview household (HRSUPINT=1) in the September 2000 CPS. Noninterview and nonsupplement-interview households are excluded. The CPS 2000 30-day Food Security Data File is sorted by GESTCEN, HRHHID, and HRSERSUF and matches to the September 2000 CPS-FSS 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.

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 2000 30-day food security variables comparable to years prior to 1998 (see technical documentation for the September 2000 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 September 2000 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 follow-up questions rather than the follow-up questions used to calculate the 30-day scale. 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:

- 106,360,800 / 93,006,330 for HHSUPWGT (the weighted number of households in rotations 1-8 divided by the weighted number of households in rotations 1-7)

- 274,538,500 / 240,112,400 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 2000 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
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 -1 Not in universe	20-21
HRFS30M2	2	Food Security Raw 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	22-23
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	24-27 (2 implied decimals)

SAS Code to Read CPS 2000 30-Day Food Security Scale ASCII Data File

```
data temp; *modify data file name to suit your conventions;
infile 'd:\fs00xtra.dat' lrecl=27; *modify to actual path on your computer;

input
```

```
@1 gestcen 2.
@3 hrhhid $ 15.
@18 hrsersuf $ 2.
@20 hrfs30m1 2.
@22 hrfs30m2 2.
@24 hrfs30m3 4.;
*restore 2 decimal places to scale variable;
if hrfs30m3 gt 0 then hrfs30m3=hrfs30m3/100;
run;

*file contains 40,460 records, one for each supplement-interview household in the September 2000 CPS Food Security Supplement data file;
*file is sorted by gestcen, hrhhid, hrsersuf and matches to the September 2000 CPS Food Security Supplement data file by these variables;
```

Frequencies of CPS 2000 30-Day Food Security Variables

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

hrfs30m1	Frequency	Percent	Cumulative frequency	Cumulative percent
-9	117	0.29	117	0.29
-1	5300	13.10	5417	13.39
1	33652	83.17	39069	96.56
2	595	1.47	39664	98.03
3	796	1.97	40460	100.00

hrfs30m2	Frequency	Percent	Cumulative frequency	Cumulative percent
-9	117	0.29	117	0.29
-1	5300	13.10	5417	13.39
0	33652	83.17	39069	96.56
1	278	0.69	39347	97.25
2	317	0.78	39664	98.03
3	289	0.71	39953	98.75
4	207	0.51	40160	99.26
5	126	0.31	40286	99.57
6	74	0.18	40360	99.75
7	64	0.16	40424	99.91
8	15	0.04	40439	99.95
9	11	0.03	40450	99.98
10	2	0.00	40452	99.98
11	4	0.01	40456	99.99
12	4	0.01	40460	100.00

hrfs30m3	Frequency	Percent	Cumulative frequency	Cumulative percent

-9	117	0.29	117	0.29
-6	33652	83.17	33769	83.46
-1	5300	13.10	39069	96.56
4.9	133	0.33	39202	96.89
4.92	145	0.36	39347	97.25
5.96	147	0.36	39494	97.61
6.02	170	0.42	39664	98.03
6.87	126	0.31	39790	98.34
7.04	163	0.40	39953	98.75
7.68	86	0.21	40039	98.96
8.06	121	0.30	40160	99.26
8.33	51	0.13	40211	99.38
8.86	28	0.07	40239	99.45
9.02	75	0.19	40314	99.64
9.35	30	0.07	40344	99.71
9.82	15	0.04	40359	99.75
10.07	46	0.11	40405	99.86
10.33	11	0.03	40416	99.89
10.85	34	0.08	40450	99.98
10.93	2	0.00	40452	99.98
11.77	4	0.01	40456	99.99
12.49	4	0.01	40460	100.00