Child Food Insecurity in the United States: 2005 - 2007

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The United States Department of Agriculture's (USDA) Economic Research Service (ERS) releases a report every year on the state of food insecurity in our nation, or what we consider hunger or at risk of hunger. In spite of the analysis provided, the report does not produce estimates of children in food insecure households by state.

Feeding America, through the generous work of The ConAgra Foods Foundation, sought to fill this void by contracting with an esteemed researcher in the field of child hunger and its impact on children, John Cook[i], PhD, of the Boston Medical Center. The ConAgra Foods Foundation program is the largest corporate initiative dedicated solely to fighting child hunger through Feeding America.

Below is a brief description of the methodology used to develop the estimates.

Methodology

The estimates were derived from the Current Population Survey Food Security Supplement (CPS FSS) microdata for 2005-2007 obtained from the Federal DataWeb, a network of data libraries storing data from fifteen different government sponsored national surveys. Special care was used to replicate as closely as possible the selected sample of children under 18 years of age obtained by the USDA Economic Research Service in producing its national-level child food security estimates. This led to slightly smaller overall numbers of children in the population and in each state than were reported in the previous set of estimates averaged over 2003-2005.

The summary food security status variable was cross-tabulated by state using Bureau of Census geographic codes for states, also available in the CPS dataset. The food security supplement person-level weight was used to obtain population-weighted estimates. The numbers of children in the two food-insecure categories (with and without hunger) were summed to provide estimates of the total number of food-insecure children in each state. The proportion of children in each state food insecure was calculated by dividing the number of food-insecure children in each state by the total number of children in each state. These procedures were repeated using data from the December 2005, 2006 and 2007 implementations of the CPS FSS. The numbers and proportions of children that were food insecure in each state in each of these three years were then averaged to produce the estimates reported. Averaging over three consecutive years of data is conducted in order to remove some of the sampling error inherent in single-year estimates, in accordance with procedures used by the USDA/ERS to produce overall state-level food security estimates from the annual CPS FSS data.[ii]

An additional set of food insecurity estimates was included this year pertaining to children under the age of 5 years. This set of estimates is new. The food insecurity estimates for children under 5 years of age were produced using the same procedures as used for all children, except the age range 0-4 years was used. The standard errors and confidence intervals were also calculated in the same manner. It is noteworthy that since the population of children ages 0-4 years is much smaller than the population of all children, the size of the CPS sample for this age range is commensurately smaller. As a result you will notice that the standard errors and confidence intervals for the estimates of numbers and proportions of children under age 5 years are larger than those for all children. These should obviously be considered when comparing rates or levels for any two or more states since overlapping confidence intervals are likely to indicate lack of statistical significance of differences between the estimates.

[i] John Cook is an Associate Professor of Pediatrics at Boston University School of Medicine, He received an MA Ed. In Educational Psychology from Arizona State University in1976 and a Ph.D. in Planning for Developing Economies from the Department of City and Regional Planning at University of North Carolina-Chapel Hill in 1990. Dr. Cook was on the faculty of Tufts University's School of Nutrition Science and Policy from 1991-1998 where his research focused on the causes and consequences of poverty, food insecurity and hunger. While at Tufts, Dr. Cook was Principal Investigator from 1995-1997 for the US Government's Food Security Measurement Study that developed and validated the measures of food security, food insecurity and hunger currently implemented by the Census Bureau and USDA for the US population.

[ii] The Source and Accuracy Documentation for the Food Security Supplement File can be found on the Census Bureau's Current Population Survey website at http://www.census.gov/apsd/techdoc/cps/cpsdec07.pdf. The Source and Accuracy of the Data for the 2007 Annual Social and Economic Supplement Microdata File can be found at http://www.census.gov/population/www/socdemo/fertility/2000/fertsa00.html. This data was used to calculate standard errors of the estimated numbers and proportions of children food insecure in each state for each year, and for the averages over the three years. The standard errors thus calculated for the 3-year averages were used to produce margins of error comparable to 90% confidence intervals by multiplying the standard errors by 1.645, and adding and subtracting these amounts to and from the 3-year average values for each state.

TABLE 1: STATE-LEVEL CHILD UNDER 18 YEARS OF AGE FOOD INSECURITY RATES AND PREVALENCE ESTIMATES BASED ON CPS MICRODATA AVERAGED OVER THE YEARS 2005-2007

	Average Number of Children Under 18 Years of Age 2005-2007	**Average Number of Food Insecure Children 2005-2007**	Standard Error of Average Number of Food Insecure Children Under 18 Years of Age 2005-2007	**Average Rate of Food Insecure Children Under 18 Years of Age 2005-2007**	Standard Error of Average Rate of Food Insecure Children Under 18 Years Old 2005-2007	**Average Rate of Food Insecure Children Years of Age 2004-2006**
US	73,848,169	**12,535,422**	173,277	**17.0%**	0.2%	**17.45%**
AK	187,226	**29,345**	3,465	**15.7%**	1.7%	**17.23%**
AL	1,087,743	**146,213**	19,694	**13.5%**	1.7%	**14.99%**
AR	672,480	**122,494**	14,248	**18.3%**	2.0%	**15.92%**
AZ	1,664,599	**336,165**	29,994	**20.2%**	1.7%	**21.81%**
CA	9,555,828	**1,601,684**	65,984	**16.8%**	0.6%	**18.20%**
CO	1,181,700	**203,395**	23,548	**17.2%**	1.9%	**17.83%**
CT	815,452	**105,806**	15,345	**13.0%**	1.8%	**11.43%**
DC	111,516	**23,887**	3,192	**21.4%**	2.6%	**20.19%**
DE	205,299	**28,309**	3,974	**13.8%**	1.8%	**13.72%**
FL	4,013,924	**637,779**	41,296	**15.9%**	1.0%	**15.58%**
GA	2,460,003	**469,774**	35,339	**19.1%**	1.3%	**19.04%**
HI	302,010	**37,849**	5,287	**12.6%**	1.7%	**12.16%**
IA	693,717	**123,901**	15,269	**17.9%**	2.0%	**16.32%**
ID	394,425	**65,517**	7,406	**16.6%**	1.8%	**18.99%**
IL	3,249,741	**458,431**	35,444	**14.1%**	1.0%	**15.41%**
IN	1,575,269	**206,891**	23,432	**13.1%**	1.4%	**14.57%**
KS	696,899	**123,679**	14,811	**17.8%**	2.0%	**16.67%**
KY	992,176	**188,490**	22,359	**19.0%**	2.1%	**18.93%**
LA	1,029,166	**205,723**	23,184	**20.0%**	2.1%	**19.02%**
MA	1,440,265	**176,207**	21,663	**12.3%**	1.4%	**10.71%**
MD	1,372,283	**206,853**	24,035	**15.1%**	1.6%	**15.31%**
ME	287,935	**56,297**	7,476	**19.5%**	2.4%	**19.83%**
MI	2,442,644	**395,626**	32,671	**16.2%**	1.2%	**17.53%**
MN	1,228,977	**168,534**	21,406	**13.7%**	1.6%	**12.35%**
MO	1,397,024	**279,697**	27,556	**20.0%**	1.8%	**17.34%**

MS	747,195	**160,374**	16,608	**21.5%**	2.0%	**22.84%**
MT	208,260	**30,733**	4,263	**14.7%**	1.9%	**14.74%**
NC	2,176,068	**422,868**	33,790	**19.4%**	1.4%	**20.09%**
ND	145,558	**15,790**	2,564	**10.9%**	1.7%	**10.38%**
NE	444,620	**63,897**	8,317	**14.3%**	1.8%	**13.84%**
NH	299,316	**35,834**	5,675	**12.0%**	1.8%	**8.87%**
NJ	2,157,108	**286,639**	28,005	**13.3%**	1.2%	**12.12%**
NM	519,144	**98,925**	10,810	**19.2%**	1.9%	**21.79%**
NV	635,689	**117,677**	13,523	**18.5%**	2.0%	**16.07%**
NY	4,501,070	**667,801**	43,224	**14.8%**	0.9%	**15.07%**
OH	2,783,538	**520,385**	37,608	**18.7%**	1.2%	**20.19%**
OK	887,766	**151,569**	18,424	**17.1%**	1.9%	**21.19%**
OR	879,696	**166,465**	19,788	**18.9%**	2.1%	**20.17%**
PA	2,780,420	**439,153**	34,729	**15.8%**	1.2%	**16.99%**
RI	245,424	**33,617**	4,884	**13.7%**	1.9%	**15.63%**
SC	1,061,191	**213,929**	23,660	**20.2%**	2.1%	**20.07%**
SD	189,172	**28,185**	3,494	**14.9%**	1.7%	**14.95%**
TN	1,425,090	**293,038**	27,484	**20.5%**	1.8%	**20.69%**
TX	6,644,060	**1,470,704**	62,766	**22.1%**	0.9%	**23.58%**
UT	783,350	**131,943**	13,042	**16.9%**	1.6%	**19.81%**
VA	1,826,880	**201,236**	23,325	**11.0%**	1.2%	**11.02%**
VT	129,709	**20,423**	3,070	**15.8%**	2.2%	**14.24%**
WA	1,518,805	**291,234**	27,873	**19.2%**	1.7%	**18.08%**
WI	1,287,796	**183,555**	22,401	**14.2%**	1.6%	**15.86%**
WV	392,083	**69,735**	8,289	**17.8%**	2.0%	**15.09%**
WY	120,860	**21,164**	2,749	**17.5%**	2.1%	**17.43%**

TABLE 2: STATE-LEVEL CHILD UNDER 5 YEARS OF AGE FOOD INSECURITY RATES AND PREVALENCE ESTIMATES BASED ON CPS MICRODATA AVERAGED OVER THE YEARS 2005-2007

	Average Number of Children Under 5 Years of Age 2005-2007	**Average Number of Food Insecure Children Under 5 Years of Age 2005-2007**	Standard Error of Average Number of Food Insecure Children Under 5 Years of Age 2005-2007	**Average Rate of Food Insecure Children Under 5 Years of Age 2005-2007**	Standard Error of Average Rate of Food Insecure Children Under 5 Years of Age 2005-2007
US	20,454,359	**3,544,153**	93,632	**17.3%**	0.4%
AK	50,068	**9,027**	13,836	**18.0%**	4.1%
AL	319,296	**49,225**	6,625	**15.6%**	3.8%
AR	178,044	**35,756**	18,304	**20.0%**	2.3%
AZ	397,032	**73,083**	4,453	**19.2%**	3.5%
CA	2,669,262	**472,094**	13,747	**17.7%**	3.1%
CO	338,112	**50,075**	7,333	**14.8%**	3.5%
CT	228,050	**32,143**	10,460	**14.1%**	3.6%
DC	33,953	**4,800**	9,554	**14.2%**	3.6%
DE	56,040	**7,404**	12,830	**13.3%**	4.0%
FL	1,078,058	**177,718**	2,402	**16.4%**	3.8%
GA	721,518	**121,072**	14,865	**16.9%**	3.4%
HI	79,195	**9,022**	11,934	**11.0%**	3.1%
IA	192,716	**36,158**	13,153	**18.8%**	2.7%
ID	113,101	**23,008**	21,998	**20.2%**	1.9%
IL	885,482	**121,637**	2,429	**13.7%**	3.4%
IN	450,171	**66,224**	19,525	**14.5%**	1.6%
KS	184,950	**38,253**	8,577	**20.9%**	3.5%
KY	270,858	**63,087**	14,343	**23.3%**	3.4%
LA	292,137	**71,062**	1,998	**24.2%**	3.6%
MA	379,375	**26,098**	1,498	**6.7%**	3.8%
MD	396,767	**65,089**	2,785	**16.1%**	3.7%
ME	71,738	**13,874**	18,321	**18.8%**	1.9%
MI	626,522	**109,147**	17,526	**17.2%**	2.5%
MN	357,969	**46,737**	1,826	**13.0%**	3.0%
MO	399,027	**79,798**	2,512	**19.8%**	3.0%

MS	192,330	**36,011**	8,333	**18.6%**	4.1%
MT	58,157	**9,318**	20,549	**16.3%**	2.9%
NC	625,994	**151,114**	11,380	**24.1%**	3.3%
ND	40,359	**5,133**	14,328	**12.9%**	3.3%
NE	135,821	**22,973**	8,101	**16.8%**	3.8%
NH	73,474	**8,375**	1,655	**11.7%**	4.3%
NJ	539,418	**57,303**	4,786	**10.7%**	3.8%
NM	152,784	**35,417**	11,928	**23.3%**	3.3%
NV	188,312	**33,786**	8,535	**17.8%**	2.1%
NY	1,171,438	**135,474**	14,271	**11.6%**	3.3%
OH	721,687	**170,640**	7,697	**23.8%**	3.9%
OK	244,066	**39,187**	5,037	**16.1%**	3.4%
OR	262,598	**45,137**	3,662	**17.2%**	4.6%
PA	769,870	**119,976**	12,358	**15.8%**	2.2%
RI	66,527	**8,367**	7,240	**12.5%**	2.4%
SC	287,710	**59,416**	1,464	**20.7%**	4.0%
SD	57,762	**7,335**	35,908	**12.7%**	1.6%
TN	385,135	**77,582**	2,023	**20.4%**	3.4%
TX	1,964,606	**458,876**	36,254	**23.3%**	1.2%
UT	278,252	**39,196**	21,916	**14.2%**	2.7%
VA	529,339	**64,286**	13,406	**12.2%**	2.4%
VT	34,744	**5,700**	1,480	**16.3%**	3.5%
WA	393,220	**73,960**	13,141	**18.3%**	4.3%
WI	366,397	**49,835**	18,462	**13.8%**	2.2%
WV	109,412	**22,188**	8,332	**19.8%**	3.9%
WY	35,508	**5,979**	11,444	**17.0%**	3.0%