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Title:

AJAE Appendix for "Food Stamps and Food Spending: an Engel Function Approach"

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Date:

June 10, 2008

Note: The material contained herein is supplementary to the article named in the title and published in the American Journal of Agricultural Economics (*AJAE*).

The article estimated Engel functions for at-home food spending and away-from-home food spending as a function of real monthly total income per adult male equivalent (AME), where total income includes both cash income and Food Stamp Program (FSP) benefits. This appendix further analyzes the relationship between FSP benefits and cash income in the Current Population Survey (CPS) sample used in the study.

Descriptive statistics for participants and nonparticipants in the three household types are reported in table A1. Because the nonparticipant sample includes households

that were not nearly income-eligible for FSP participation, it is not surprising that the nonparticipant households were much better off in terms of both income and education.

Among participants, household types (a) single adults with children and (b) two adults with children were poorer on average than household type (c) adults without children. The fraction of households with an elderly member was low for household types (a) and (b), but about half of households with type (c).

Food stamps provided 24.1 percent of all income received by households in type (a) and 16.0 percent of all income received by households in type (b), but only 10.4 percent of all income received by households in type (c). The average monthly benefit amount per AME fell from a high of $113.17 in the poorest type (a) to about $80 in household types (b) and (c).

Within household types, mean benefits did not fall sharply as total income rose to the extent that one might expect. In figure A1, the line graphs without diamonds show how the mean benefit amount varied with total income. For comparison, the line graphs with diamonds illustrate the corresponding pattern estimated for 2001 to 2004 from Quality Control (QC) data from the Food and Nutrition Service for the same years. The QC data are a more authoritative source of information about program benefits, but they could not be used for the main analyses in this study, which require survey questions about food spending or food security outcomes that are only available in the CPS. The mean benefit amount in the CPS data did not trend downward as total income increased. By contrast, the comparison mean benefit amount in QC data generally fell as total income rose.

There are several reasons why the relationship between program benefits and total income in the CPS data might not precisely follow what one would expect from reading the official benefit formula or from comparable analyses with QC data. As noted in the methods section, these reasons include time mismatch between the underlying annual cash income data and the monthly food stamp benefit data, the lumpiness introduced by the categories of control card cash income, rounding error in reporting program benefits, and misreporting of either cash income or benefit information. We made several attempts to reconcile the self-reported benefit amounts with the self-reported cash income values, but all of these attempts yielded results that were substantially the same as those reported here, suggesting that the problem cannot be remedied with the current data source.

Matters appeared somewhat better in the CPS data when we investigated the percentage of total income from FSP benefits, as total income rose (figure A2). Food stamp benefits contributed a comparatively large fraction of total income for the poorest participants, and a smaller fraction of total income for near-poor participants who have income approaching the boundary for eligibility. Hence, one still finds that the relative role of the food stamp benefit becomes smaller in household budgets with more total resources.

The discussion section of the article addresses the implications of this relationship between FPS benefits and cash income. It discusses possible remedies in future data collection, which would generate measures of FSP benefits and cash income that can more easily be reconciled with the official FSP benefit formula.

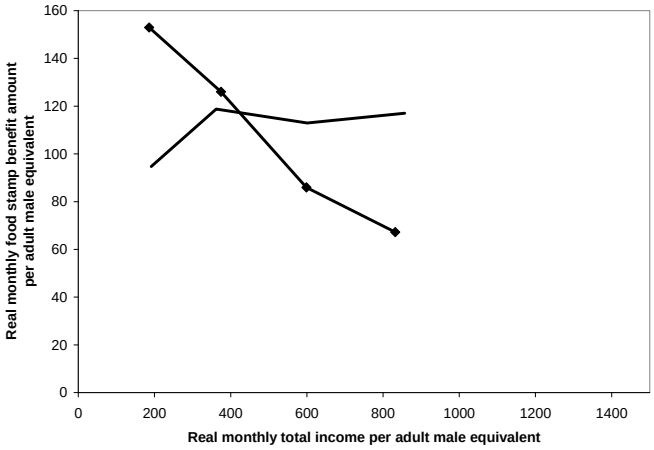
Table A1: Characteristics of Food Stamp Program participants and nonparticipants

	Household type					
	Single adult with children		Two adults with children		Adult(s) no children	
Characteristic	Participants	Non-participants	Participants	Non-participants	Participants	Non-participants
Number of households	2261	7865	1772	27583	3170	91231
Real total monthly income per AME (mean)	469.61	1272.72	487.92	1185.01	760.22	2128.79
Real monthly cash income per AME (mean)	356.82	1272.72	410.24	1185.01	683.55	2128.79

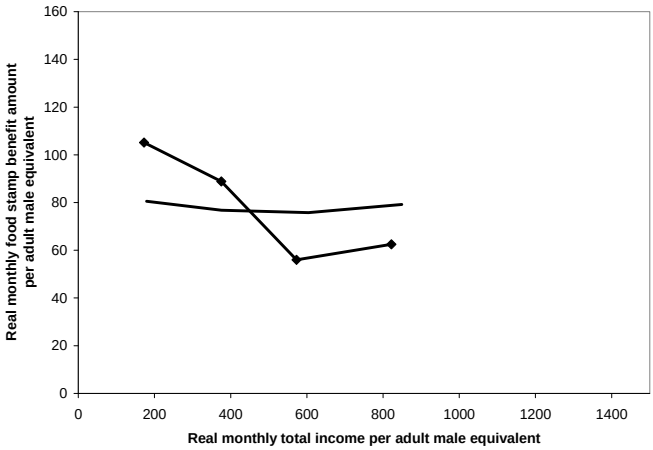
Real monthly food stamp benefit per AME (mean)	112.79	0	77.68	0	76.67	0
Number of household members (mean)	3.1	2.6	4.1	3.8	1.5	1.7
% households with one or more members elderly (age $\geq$ 60 years)	1.6	2.3	6.5	3.4	46.3	43.4
% respondents at least High School graduate or GED	67.9	86.8	59.1	85.6	52.9	83.4

Note: Mean and percent using survey weights. Analysis restricted to subjects where real total income not missing.

(a) One adult with children



(b) Two adults with children



(c) No children

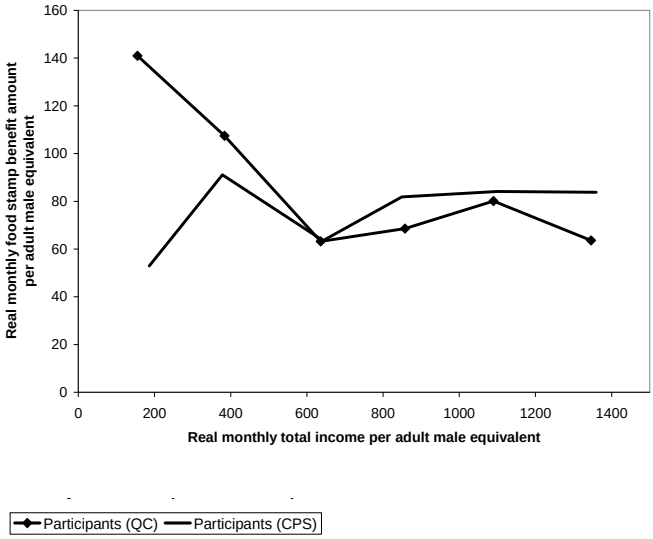
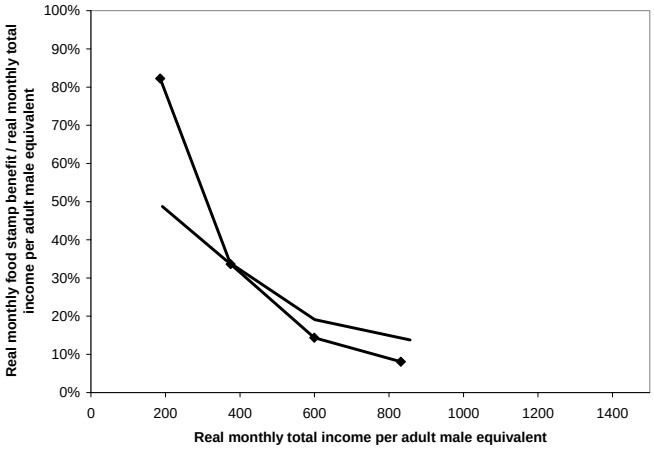
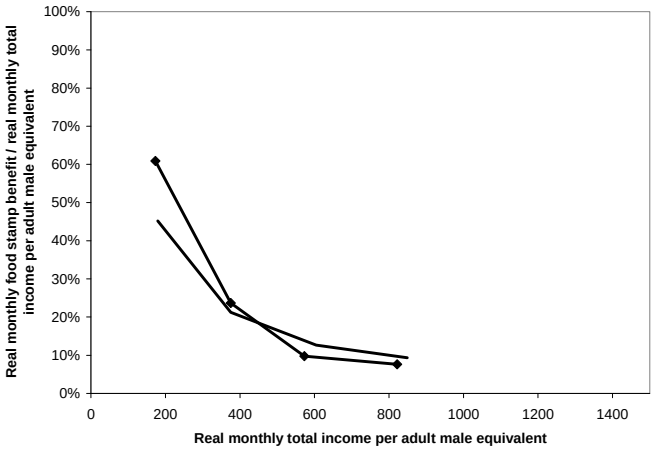


Figure A1. Monthly food stamp benefits as a function of monthly total income (cash plus food stamps), in Quality Control data (QC) and the Current Population Survey (CPS)

(a) One adult with children



(b) Two adults with children



(c) No children

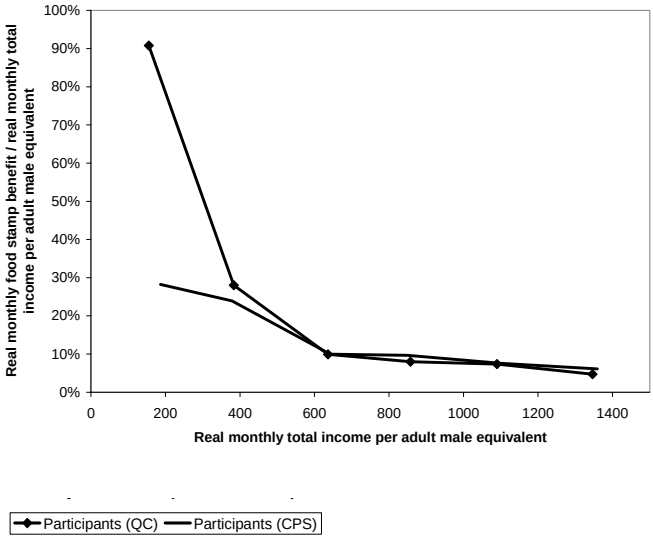


Figure A2. Monthly food stamp benefits as a percentage of monthly total income (cash plus food stamps), in the Current Population Survey (CPS) and Quality Control data (QC)