



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

The Goods-Time Elasticity of Substitution in Home Food Production for Food Stamp/SNAP participants

Jeta Rudi
George C. Davis
Wen You

Department of Agricultural and Applied Economics, Virginia Tech

*Poster prepared for presentation at the Agricultural & Applied Economics Association's 2012
AAEA & NAREEA Joint Annual Meeting, Seattle, Washington, August 12-14, 2012*

*Copyright 2012 by Jeta Rudi, George C. Davis and Wen You. All rights reserved. Readers may make verbatim
copies of this document for non-commercial purposes by any means, provided this copyright notice appears on
all such copies.*

The Goods-Time Elasticity of Substitution in Home Food Production for Food Stamp/SNAP participants



Jeta Rudi, George C. Davis, Wen You
Department of Agricultural and Applied Economics

Background:

- Hamermesh (2008) and Baral, Davis & You (2011) estimated the goods–time elasticity of substitution in home food production.
- They found that the elasticity of substitution is lower when consumption time is included (0.28) compared to when consumption time is not included (0.48) (Baral, Davis & You, 2011).

Supplemental Nutrition Assistance Program (SNAP):

- National Program
- Federal Budget for SNAP in 2011 was \$78 billion
- 45 million people received SNAP benefits in 2011
- Eligibility based on: income, assets & household composition
- Households *CAN* use SNAP benefits to purchase: fruits, vegetables, meats, etc.
- Households *CANNOT* use SNAP benefits to purchase pre–prepared and hot meals.

| | MEAN (SNAP Participants) | MEAN (SNAP Non-Participants) |
|-----------------------------|--------------------------|------------------------------|
| Food Expenditures (weekly) | \$113 | \$113 |
| Food Time w/o Cons. (Daily) | 81 min. | 62 min. |
| Food Time w/ Cons. (Daily) | 131 min. | 123 min. |
| No. of Observations | 226 | 1,646 |

OBJECTIVE:
Estimate the goods-time elasticity of substitution in household food production for SNAP participants vs. non-participants.

Data & Methodology:

- Household data obtained from CPS, matched with FSS, ATUS, and EH Module.
- Sample includes single–headed households, 18–64 years old; Sample size: 1,872 obs.
- Following the theoretical framework as in Baral, Davis & You (2011).
- Empirical Model:
$$\ln\left(\frac{foodexp}{foodtime}\right) = \beta_0 + \beta_1 \ln wage + \beta_2 SNAP + \beta_3 SNAP * \ln wage + \beta_4 Children$$
- Propensity Score Matching method was used to provide unbiased estimation of SNAP participation effect.

Results & Conclusions:

- The goods–time elasticity of substitution in household food production is lower for SNAP participants compared to SNAP non–participants.
- For both groups, the elasticity of substitution is lower when consumption time is included in the analysis compared to when consumption time is excluded, which is consistent with the findings in the literature.

| Reference Week | SNAP Participants | SNAP Non-Participants |
|---|-------------------|-----------------------|
| Elasticity of Substitution (w/ cons. time) | 0.31 | 0.10 |
| Elasticity of Substitution (w/o cons. time) | 0.70 | 0.36 |

- Since time and food expenses are less substitutable for SNAP participants compared to non–participants, increasing the SNAP benefits will not lead to a significant decrease in time spent in household food production. This issue could be addressed by:
 - Allowing SNAP participants to use the SNAP benefits to purchase pre–prepared food items.
 - Improving the technology used in food production to increase efficiency.
 - Accounting for the cost of time (a limited resource) as a factor in food preparation on the Thrifty Food Plan recipes which serves as the basis for the SNAP benefits scheme.

Note: Food time includes: time preparing the meal, time cleaning-up, time grocery shopping and time traveling for grocery shopping. Consumption time includes: time eating and time drinking (when these are the primary activities).