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# Could the Net Health Effect of Food Stamps be Negative?

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## Background:

Current restrictions on the food stamp program include alcohol and cigarettes among other things, and present research on food stamp effects focuses on adding more restrictions to the program like not allowing soda or sugary fruit juice to be purchased with the funds. The goal is to encourage this population to lead a healthier life, or at least limit the prevalence of obesity and resulting obesity-related mortality. However, current restrictions have not eliminated the consumption of the items of interest in this paper, alcohol and tobacco products, which are also leading causes of mortality. Despite efforts to keep participants from consuming certain products and before more restrictions are enforced, understanding consumption of items already restricted like alcohol and tobacco could be beneficial.

This paper will consider if food stamp participation could affect alcohol and tobacco, and determine the consumption level differences as well.



Source: Boseley, S. 2011. UN Summit Targets Obesity, Alcohol and Smoking. The Sydney Morning Herald. www.smh.com.au.

## Previous Research and Hypotheses:

- Alcohol and cigarettes are substitutes and have a habit-persistent effect (Goel and Morey 1995)
- Income elasticities from largest to smallest are wine, spirits, and beer, but all are normal goods (Gallet 2007)
- Therefore, food stamps, or essentially an increase in income, are hypothesized to affect (increase) both alcohol and cigarette consumption

## Data:

- National Health and Nutrition Examination Survey (NHANES) 2007-2008
- 9,762 individuals were sampled using datasets: Demographics, Dietary (Total Nutrient Intakes – Day 1 and Day 2) and Questionnaire (Alcohol Use (ages 20+), Food Security, and Smoking – Cigarette (Centers for Disease Control and Prevention 2010))
- In the dietary portion of the survey, participants report their food consumption over the course of two days, which we used assuming it is the most reliable indicator of alcohol consumption

## Results:

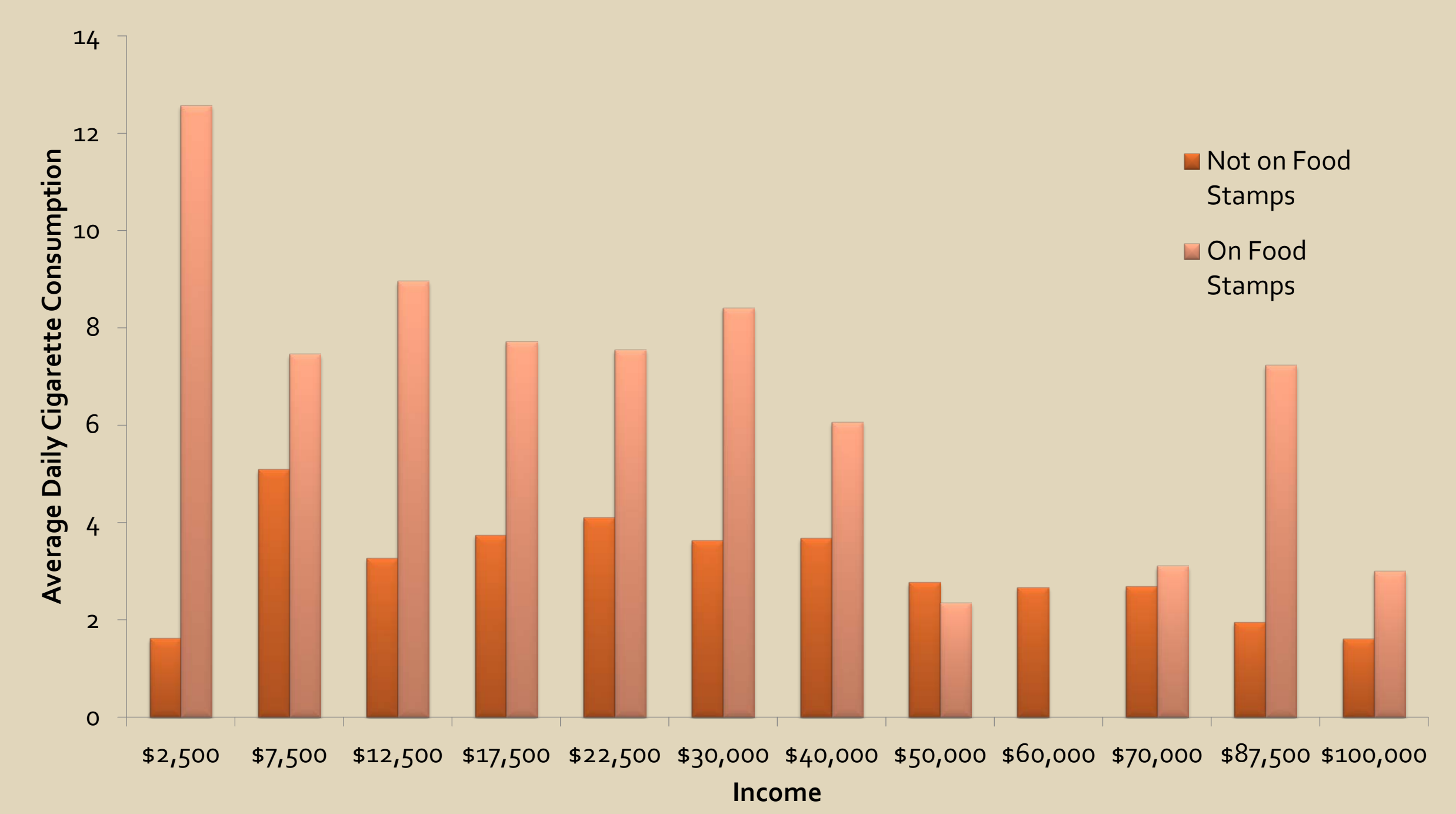


Figure 1. Average Daily Cigarette Consumption by Income Level for Both Food Stamp Participants and Non-Participants

## Tobit, Probit, and Double Hurdle Model Results:

- Outcomes: Alcohol grams consumed days 1 and 2 and average # of cigarettes consumed in the past 30 days
- Variables: Ever been on food stamps, food stamp dollars received last, high school graduate, college graduate, female, married, & income
- Food stamps have no significant effect on the amount of alcohol consumed
- Food stamp participants smoke almost 8 more cigarettes/day (tobit model)
- The larger the family, the fewer adult members who consume alcohol
- Females consume less alcohol and cigarettes
- College graduates have a significantly lower average number of cigarettes daily, by as many as 29 with the truncated model
- The average number of cigarettes smoked per day for all of the sample from the tobit model is about 3.5
- At nearly every income level, those on food stamps smoke more than those who are not (as shown in the figure above)

## Conclusions:

If those on food stamps are still consuming alcohol and smoking even more cigarettes and assuming that restrictions do not change consumption habits, are the efforts to improve health futile among this population? Food stamps still meet the fundamental purpose of the program, but much is still unknown about how bad consumption habits can be transformed. Limiting food stamp dollars from being used to purchase alcohol and cigarettes has been unsuccessful, if not counteractive. Further research would need to examine how food stamp participation results in fewer grams of alcohol consumed. Possible explanations could include anything from the type of alcohol consumed to substitution of alcohol for cigarettes.

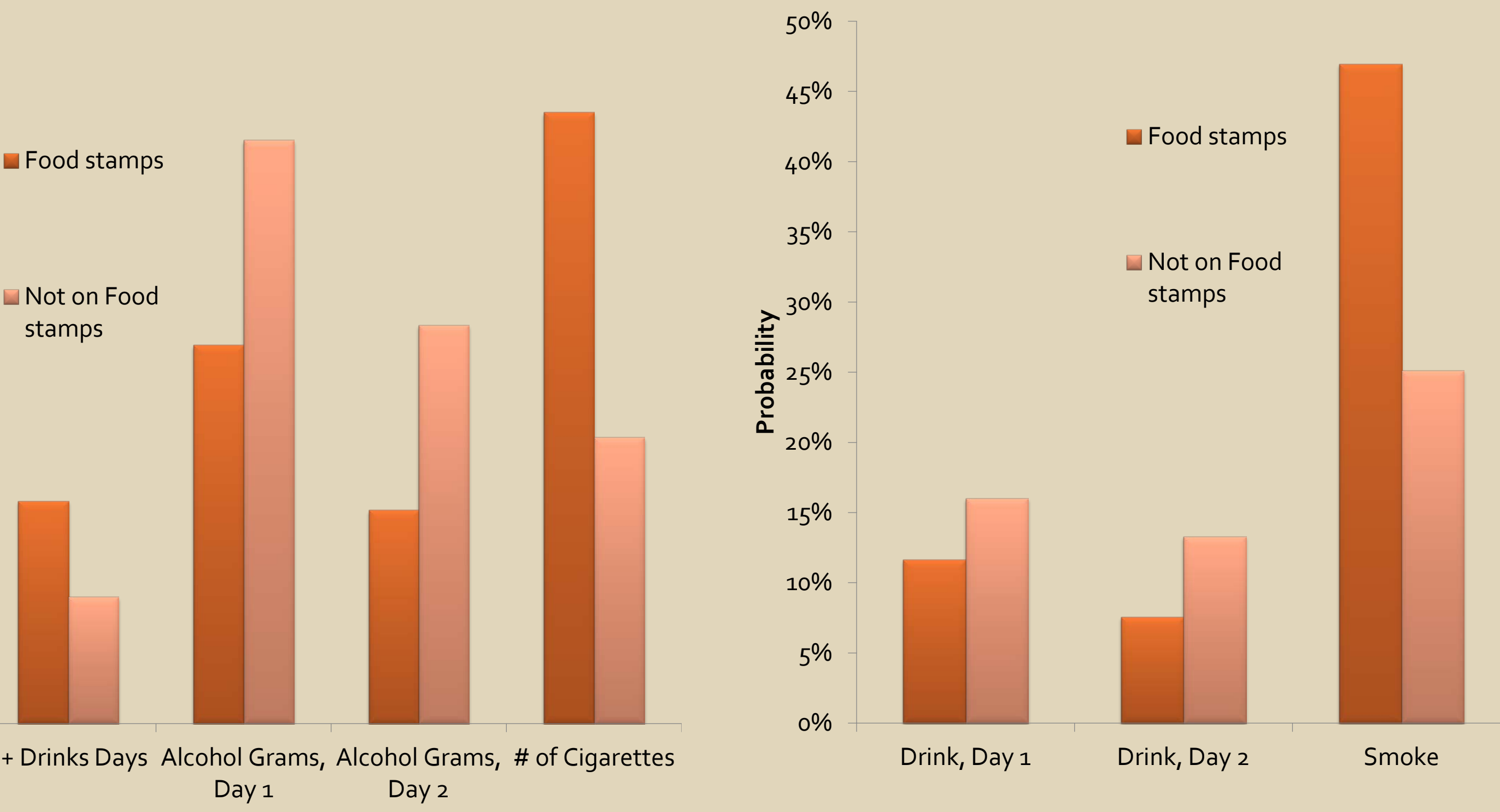
Smoking is a prominent habit among food stamp participants. Obviously, restrictions on cigarette purchases with food stamp benefits have not translated to fewer smokers. Considering that smoking is a leading contributor to the main causes of death in the US, policymakers can see that while food stamps promotes increased food spending, it also provides means to pick up another pack of cigarettes.

## Summary Statistics by Food Stamp Participation (Treatment)

Variable Name	Treatment Group	Control Group
Less than High School Education	21.20%	15.59%
High School Education	12.25%	17.60%
Some College	13.74%	20.85%
College Degree	4.23%	21.34%
<b>Annual Household Income</b>	\$ 30,162.43	\$ 54,964.11
<b>Log of Annual Household Income</b>	\$ 9.98	\$ 10.70
Multi-Racial	4.08%	4.26%
Non-Hispanic Black	31.66%	14.80%
Non-Hispanic White	31.16%	54.93%
Other Hispanic	12.39%	10.46%
Pregnant	0.73%	0.50%
On a Diet	12.35%	16.04%
Food Did Not Last	41.44%	10.69%
Percentage Who Drink, Day 1	11.72%	21.88%
Percentage Who Drink, Day 2	7.57%	16.20%
Average Grams of Alcohol Consumed, Day 1	4.37	7.42
Average Grams of Alcohol Consumed, Day 2	2.40	4.27
Percentage of Those Who Smoke	46.63%	21.05%
<b>Average Number of Cigarettes Per Day</b>	6.93	2.62

Note: Variables in bold were utilized to calculate propensity score

## Propensity Score Matching – Kernel Matching Method



## Key Statistics:

- Approximately 17% received food stamps in the past year
- 25% have had food stamps at some point in their life
- Average monthly payment to participating households was \$307.50
- The average amount of alcohol consumed on day 1 of the examination by those on food stamps is lower than non-participants: 7.23 vs. 3.99 grams
- On day 2, both decreased consumption to 4.12 and 2.38 grams
- Food stamp participants smoke over 2.5 times more cigarettes a day than those not on food stamps, and also had a higher rate of smokers

## Takeaway:

- Food stamp participants...
  - Consume 5+ drinks more days out of the past year
  - Are less likely to drink and drink less overall
  - Are much more likely to smoke and smoke more cigarettes daily
  - Have a higher probability of food not lasting the whole month
  - Are unlikely to have a college degree
- Policies related to restricting the use of food stamps have complicated and unanticipated effects

## References

Alston, J.M., C.C. Mullally, D.A. Sumner, M. Townsend, and S.A. Vosti. 2009. "Likely Effects on Obesity from Proposed Changes to the US Food Stamp Program." *Food Policy* 34 (1): 176-184.

Andreyeva, T., J. Luedicke, K. E. Henderson, and A.S. Tripp. 2012. "Grocery Store Beverage Choices by Participants in Federal Food Assistance and Nutrition Programs." *American Journal of Preventive Medicine* 43 (4): 411-418.

Barfield, J., and R. Dunifon. 2005. *State-Level Predictors of Food Insecurity and Hunger Among Households with Children*. USDA Food Assistance and Nutrition Program, Contractor and Cooperator Report No. 13.

Baum, C.L. 2011. "The Effects of Food Stamps on Obesity." *Southern Economic Journal* 77 (3): 623-651.

Beatty, T.J., B. Blow, T. Crosby, and C. O'Dea. 2011. *Cash by Any Other Name? Evidence on Labeling from the UK Winter Fuel Payment*. In *Institute for Fiscal Studies*. Beatty, T.K.M., and C. Tuttle. 2012. Expenditure Response to Increases in In-Kind Transfers: Evidence from the Supplemental Nutrition Assistance Program. Paper presented at 2012 AAEA/AAE Food Environment Symposium, May 30-31, Boston, MA.

Beckes, G.S., M. Grossman, and K.M. Murphy. 1991. "Rational Addiction and the Effect of Price on Consumption." *The American Economic Review* 81: 237-241.

Binkley, J. 2010. "Low Income and Poor Health Choices: The Example of Smoking." *American Journal of Agricultural Economics* 92 (4): 971-984.

Breslow, R.A., P.M. Guenther, W. Juan, and B. Graubard. 2010. "Alcoholic Beverage Consumption, Nutrient Intakes, and Diet Quality in the US Adult Population, 1999-2006." *Journal of the American Dietetic Association* 110 (12): 551-561.

Breslow, R.A., P.M. Guenther, and B.A. Smothers. 2006. "Alcohol Drinking Patterns and Diet Quality: The 1999-2000 National Health and Nutrition Examination Survey." *American Journal of Epidemiology* 163 (4): 359-366.

Breuing, R., and I. Dasgupta. 2005. "Do Intra-Household Effects Generate the Food Stamp Cash-Out Puzzle?" *American Journal of Agricultural Economics* 87 (3): 551-568.

Breuing, R.V., and I. Dasgupta. 2002. "A Theoretical and Empirical Evaluation of the Functional Forms Used to Estimate the Food Expenditure Equation of Food Stamp Recipients." *American Journal of Agricultural Economics* 84 (4): 1156-1160.

Callison, K., and R. Kaestner. 2013. "Do Higher Tobacco Taxes Reduce Adult Smoking? New Evidence of the Effect of Recent Cigarette Tax Increases on Adult Smoking." *Economic Inquiry*. Centers for Disease Control and Prevention. 2010. "National Health and Nutrition Examination Survey Data: 2007-2008." National Center for Health Statistics. Hyattsville, MD, US. Department of Health and Human Services, CDC. www.cdc.gov/nchs/nhanes.

Cummins, S., and S. Macintyre. 2006. "Food Environments and Obesity—Neighbourhood or Nation?" *International Journal of Epidemiology* 35 (1): 100-104.

Davis, G.C., and A. Carlson. 2012. *How Spurious is the Relationship Between Food Price and Energy Density? A Simple Procedure and Statistical Test*. Paper presented at 2012 Annual Meeting, August 12-14, 2012, Seattle, Washington.

DeBono, N.L., N.A. Ross, and L. Berrang-Ford. 2012. "Does the Food Stamp Program Cause Obesity? A Realist Review and a Call for Place-Based Research." *Health & Place* 18 (4): 747-756.

Drewnowski, A., and S.E. Specter. 2004. "Poverty and Obesity: The Role of Energy Density and Energy Costs." *The American Journal of Clinical Nutrition* 79 (1): 6-16.

Eisenmann, J.C., C. Gunderen, B.J. Lohman, S. Garasky, and S.D. Stewart. 2011. "Food Insecurity Related to Overweight and Obesity in Children and Adolescents? A Summary of Studies, 1995-2009." *Obesity Reviews* 12 (5): 73-83.

Fan, M. 2010. "Do Food Stamps Contribute to Obesity in Low-Income Women? Evidence from the National Longitudinal Survey of Youth 1979." *American Journal of Agricultural Economics* 92 (4): 1157-1180.

Frazao, E., M. Andrews, D. Smallwood, and M. Prell. 2007. *Food Spending Patterns of Low-Income Households*. edited by USDA Economic Research Service.

Gallet, C.A. 2007. "The Demand for Alcohol: A Meta-Analysis of Elasticities." *Australian Journal of Agricultural and Resource Economics* 51 (2): 121-135.

Gallet, C.A., and J.K. Liu. 2009. "Cigarette Demand: A Meta-Analysis of Elasticities." *Health Economics* 23 (1): 82-93.

Goel, R.K., and M.J. Morey. 1995. "The Interdependence of Cigarette and Liquor Demand." *Southern Economic Journal* 61: 451-459.

Grunert, K.G. 2002. "Current Issues in the Understanding of Consumer Food Choice." *Trends in Food Science & Technology* 13 (8): 275-285. doi: http://dx.doi.org/10.1016/S0924-6460(02)00317-1.

Heron, M. 2011. "Deaths: Leading Causes for 2007." *National Vital Statistics Reports: From the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System* 59 (18): 1-24.

Kerr, W., T.K. Greenfield, J. Tague, and S.E. Brown. 2005. "A Drink is a Drink? Variation in the Amount of Alcohol Contained in Beer, Wine and Spirits Drinks in a US Methodological Sample." *Alcoholism: Clinical and Experimental Research* 29 (11): 2015-2021.

Luedicke, J.W. 1999. "A Theoretical and Empirical Evaluation of the Functional Forms Used to Estimate the Food Expenditure Equation of Food Stamp Recipients." *American Journal of Agricultural Economics* 77 (4): 950-968.

Li, F., P. Harmer, B.J. Cardinal, M. Bosworth, and D. Johnson-Shelton. 2009. "Obesity and the Built Environment: Does the Equity of Neighborhood Fast-Food Outlets Matter?" *American Journal of Health Promotion* 23 (2): 202-209.

Moffitt, R. 1989. "Estimating the Value of an In-Kind Transfer: The Case of Food Stamps." *Econometrica: Journal of the Econometric Society* 57: 409-429.

Mokdad, A.H., J.S. Marks, D.F. Stroup, and J.L. Gerberding. 2004. "Actual Causes of Death in the United States, 2000." *JAMA: The Journal of the American Medical Association* 291 (10): 1238-1245.

Mullally, C.C., J.M. Alston, D.A. Sumner, M. Townsend, and S.A. Vosti. 2008. *Proposed Modifications to the Food Stamp Program (FSP): Likely Effects and Their Policy Implications*. Obesity: Causes, Mechanisms, and Prevention ed. Sunderland, MA: Sinauer Associates, Inc.

Senauer, B., and N. Young. 1986. "The Impact of Food Stamps on Food Expenditures: Rejection of the Traditional Model." *American Journal of Agricultural Economics* 68 (1): 37-43.

Southworth, H.M. 1945. "The Economics of Public Measures to Subsidize Food Consumption." *Journal of Farm Economics* 27 (1): 38-66.

Stewart, H., N. Blisard, and D. Jiliff. 2009. "Do Income Constraints Inhibit Spending on Fruits and Vegetables Among Low-Income Households?" *Journal of Agricultural and Resource Economics* 46: 480.

USDA Food and Nutrition Service. 2012. *A Short History of SNAP*, April 26, 2012a [retrieved October 23, 2012]. Available from www.fns.usda.gov.

2012. *Supplemental Nutrition Assistance Program*, February 26, 2012b [retrieved October 20, 2012]. Available from www.fns.usda.gov/naps/nutritioneligible.htm.

Ver Ploeg, M., L. Mancino, B. Lin, and C. Wang. 2007. "The Vanishing Weight Gap: Trends in Obesity Among Adult Food Stamp Participants (US) (1996-2004)." *Economics & Human Biology* 5 (1): 20-36.

Ver Ploeg, M., and K. Rablston. 2008. "Food Stamps and Obesity: What Do We Know?" *Economic Information Bulletin* (34).

Whitmore, D. 2002. *What are Food Stamps Worth?* Industrial Relations Section, Princeton University.

Wilde, P., and C. Ranney. 1996. "The Distinct Impact of Food Stamps on Food Spending." *Journal of Agricultural and Resource Economics* 17: 174-185.

Zagorsky, J.L., and P.K. Smith. 2009. "Does the US Food Stamp Program Contribute to Adult Weight Gain?" *Economics & Human Biology* 7 (2): 246-258.