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**Effect of Trans Fat Labeling Rule:
Evidence from the U.S. Margarine/Spreads Market**

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Effect of Trans Fat Labeling Rule: Evidence from the U.S. Margarine/Spreads Market

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Introduction

- The Nutrition Labeling and Education Act (NLEA) was enacted in November, 1990 and became effective in May, 1994.

- Regulations on three fronts: Mandatory nutrition facts panel, Nutrient content claims and Health claims.

- In January 2006, the trans fat labeling rule was implemented. It requires a mandatory separate labeling row for "trans fat" in the "Nutrition Facts" box. Voluntary Trans Fat Free (TFF) claims may be made for products with less than 0.5 g of trans fat per serving.

Nutrition Facts	
Serving Size 1/2 cup (about 82g) Servings Per Container 8	
Amount Per Serving	
Calories 200	Calories from Fat 130
% Daily Value*	
Total Fat 14g	22%
Saturated Fat 9g	45%
Trans Fat 0g	
Cholesterol 55mg	18%
Sodium 40mg	2%
Total Carbohydrate 17g	6%
Dietary Fiber 1g	4%
Sugars 14g	
Protein 3g	
Vitamin A 10%	Vitamin C 0%
Calcium 10%	Iron 6%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
Calories: 2,000 2,500	
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4
Protein 4	

Objectives

- Test the effectiveness of the nutrition labeling policy on trans fatty acids.
- Distinguish short-run and long-run effects of the policy.
- Investigate demand and supply of the food market with differentiable products: Margarine/Spreads.

Model

To analyze households' purchase decision, we specify a complementary log log model as follows:

$$Un = \alpha + \beta P + \gamma X + \delta Z + \zeta t + \eta ShortNLEA + \theta LongNLEA + \varepsilon n$$

Where P denotes the product price, X includes all consumer demographics, Z denotes all product features, t is the time trend, and εn denotes the i.i.d. error term. $ShortNLEA$ is a dummy with value of 1 in 2006 and 2007 and 0 otherwise, while $LongNLEA$ is a dummy with value of 1 for all years from 2008 to 2011 and 0 otherwise.

Data

Product offerings and sales data are from Information Resources, Inc. (IRI): 1) Weekly household purchases of margarine and spreads from 2001 to 2011. 2) Weekly grocery store sales data from a representative 10% of the U.S. market in the same period. And 3) Data on product features for 2001-2011.

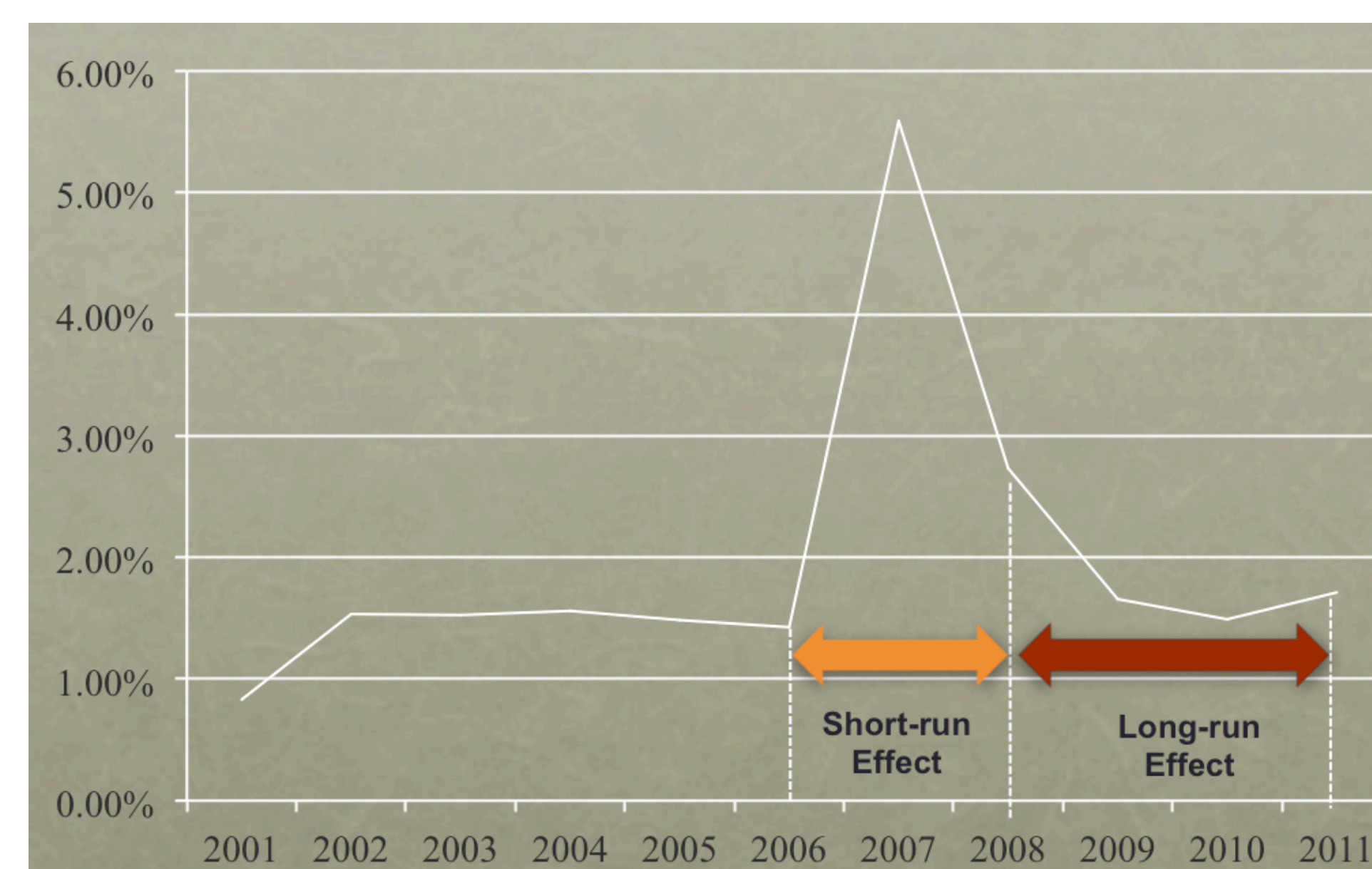
Key Findings

Figure 1. Adjusted Annual Average Price of Margarine/Spreads



- Over this period of time, the average annual price of products with TFF claim was higher than that of products without such claims except in 2006 and 2007.

Figure 2. Annual Average per Household Purchase of Margarine/Spreads with TFF Claim (in %)



- For the average household, the percentage of margarine/spreads purchases carrying a TFF claim was 0.74% in 2001. This percentage increased to 5.8% in 2007, in the period immediately after the labeling policy change and settled down to 3.7% in 2011.

Table 1. Marginal Effect of Complementary Log Log Model Regression Results

Variable	Model 1		Model 2		Model 3	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Price per oz.	0.0017***	0.0001	0.0016***	0.0001	0.0016***	0.0001
Year	0.0027***	0.0002	0.0027***	0.0002	0.0027***	0.0002
ShortNLEA	0.0113***	0.0010	0.0112***	0.0010	0.0150***	0.0035
LongNLEA	0.0024*	0.0013	0.0029**	0.0013	0.0212***	0.0036
0 calorie	-0.0082***	0.0007	-0.0082***	0.0007	-0.0081***	0.0007
Vegetable oil	-0.0021***	0.0005	-0.0021***	0.0005	-0.0021***	0.0005
Low Income			-0.0071***	0.0007	-0.0073***	0.0012
High Income			-0.0016**	0.0007	0.0109***	0.0016
Child			0.0001	0.0006	-0.0032***	0.0008
Family Size			-0.0006***	0.0002	0.0004	0.0003
Education			0.0002	0.0001	0.0009***	0.0002
Low Inc*ShortNLEA					0.0102**	0.0043
High Inc*ShortNLEA					-0.0087***	0.0010
Child*ShortNLEA					0.0052***	0.0018
Fa_Size*ShortNLEA					-0.0002	0.0005
Edu*ShortNLEA					-0.0005	0.0003
Low Inc*LongNLEA					-0.0020	0.0021
High Inc*LongNLEA					-0.0117***	0.0007
Child*LongNLEA					0.0068***	0.0019
Fa_Size*LongNLEA					-0.0024***	0.0005
Edu*LongNLEA					-0.0016***	0.0003

Conclusions

- Demand for Margarine/Spreads with TFF claim increased over time.
- Consumers' purchases positively respond to nutrition labeling policy in the case of trans fatty acids.
- The short term effect on trans fat labeling is significantly larger than the long term effect.
- Families with children are more inclined to buy Margarine/Spreads with TFF claims both in the short and long run.
- Price, income and product features significantly influence the annual purchase probability of product with TFF claim.