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## Commodity Effects of Food Away From Home

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*Selected Poster prepared for presentation at the  
2015 Agricultural & Applied Economics Association and Western Agricultural Economics  
Association Joint Annual Meeting, San Francisco, CA, July 26-28*

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# Commodity Effects of Food Away From Home

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## Objective

To estimate the effect of food away from home (FAFH) on the commodity composition of demand.

## Background

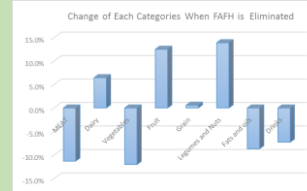
Food away from home, defined as food from full-service and fast food restaurants, cafeterias and bars, accounted for 25.9 percent of total household food spending at 1970. By 2012, the share had risen to 43.1 percent. There is ample evidence that over the period of FAFH growth there have been changes in the consumption of some basic food commodities. For example, between 1970 and 2012, per capita milk consumption fell from 31.1 gallons to 19.6 gallons, while per capita chicken consumption rose from 22.4 pounds to 46.2 pounds. Changes such as these have been attributed to increased nutrition concerns, changing price relations, and generally "structural change." But little if any research has investigated the possibility that the growth of FAFH, certainly a form of structural change, may have been a factor. That is the purpose of this study.

## Data

We employ two data sets. The first is the National Health and Nutrition Examination Survey (NHANES). The second data set is the USDA Food Intakes Converted to Retail Commodities Database (FICRCD). FICRCD was designed specifically to convert intake data from NHANES and similar sources to retail equivalents. We use NHANES 2003-04, 2005-06, and 2007-08, the latest for which there are specific FICRCD data sets. Foods are grouped into 8 categories and 52 specific commodities. In this poster we focus on the 2007-08 survey.

## Methods

Respondents were grouped by those who did not eat FAFH during the two day survey period and who did. To obtain estimates, we make an assumption about how consumers who have FAFH would replace their current FAFH consumption. In this initial analysis, we assume they replace total FAFH grams with an equivalent amount of FAH grams. To allocate this to individual foods, we matched their current FAH patterns. This analysis was conducted separately for children and teens (age < 18), and adults (age > 18), and for liquid and solid foods. Results from these were aggregated to obtain final estimates. We assume any food losses for FAH and FAFH are approximately the same. A more refined analysis may need to account for any differences.



## Results

### Meat

With the replacement of FAFH by FAH, chicken consumption declines by 21.52%, beef consumption decreases by 11.96% and pork consumption increases by 5.91%.

### Dairy

More than 90% of fluid milk and yogurt are consumed at home. Thus eliminating FAFH increase fluid milk consumption by 6% and yogurt consumption by 22%. Cheese is the only dairy commodity to decline, decreasing by 15%.

### Vegetables

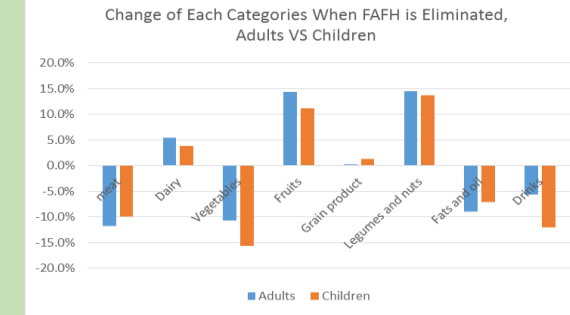
We find that 39.58% of potatoes and 41.73% of lettuce are consumed as FAFH. When FAFH is eliminated, potato consumption decreases by 22.48% while lettuce consumption declines by 24.86%. Because of this, total vegetables consumption declines with the elimination of FAFH. A somewhat surprising result.

### Fruits

Because full-service and fast food restaurants rarely provide fruits on their menus, most fruits are consumed at home. As a result, if FAFH is eliminated, virtually all fruit commodities increase. Apples, bananas and oranges are the top three gainers, each increasing by more than 20%.

### Drinks

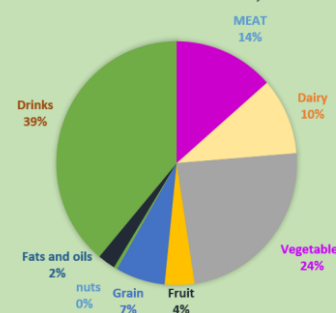
If FAFH is eliminated, the most significant change is 13% decrease in soft drink consumption. Alcoholic drinks decrease by 8.4%.



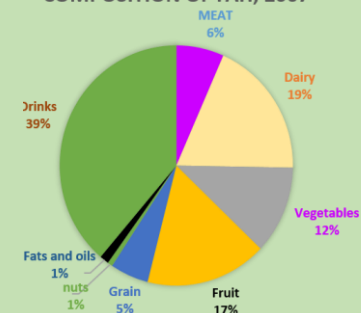
When FAFH is eliminated, changes are similar for adults and children. The one major change is children's soft drink consumption decreases by 19% while Adult's soft drink consumption only decreases by 10%.

Commodities	2003-2004	2005-2006	2007-2008
Beef	-12.10%	-13.22%	-11.96%
Chicken	-22.59%	-24.73%	-21.52%
Pork	4.19%	4.45%	5.91%
Cheese	-17.31%	-14.48%	-15.01%
Fluid Milk 2pct	12.02%	9.05%	10.00%
Yogurt	23.73%	23.72%	21.60%
Lettuce	-22.39%	-25.91%	-24.86%
Potatoes	-23.14%	-24.16%	-22.48%
Tomato	-13.88%	-12.43%	-12.38%
Carrot	13.89%	10.28%	9.17%
Apples	24.37%	25.18%	22.13%
Bananas	27.21%	26.46%	25.52%
Oranges	28.19%	27.57%	24.32%
Soft Drinks	-13.03%	-15.51%	-13.16%

COMPOSITION OF FAFH, 2007



COMPOSITION OF FAH, 2007



These two charts represents the percentage of each category weight in food away from home (FAFH) and food at home (FAH) consumption.

By comparing results from 2003-2004, 2005-2006, and 2007-2008 in table above, we can see a consistent change across years, implying these pattern are fairly robust.

## Conclusion

In this counterfactually analysis, we have shown that the elimination of food away from home would have large effects on the composition of the American diet. This implies that the growth of FAFH has changed the structure of agricultural production and the nature of food demand.