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Food Policy

Check the List of Ingredients

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- In their competition for health-conscious consumers, food manufacturers respond to policies targeted directly at consumers, such as nutrition information and education programs.
- Policy influencing the use of common ingredients in processed foods, such as trans fats, can affect diet quality for many consumers, including those who do not know or care about the healthfulness of processed food ingredients.
- Reformulating products to use healthier ingredients brings about changes in food production that may extend all the way to the farm.

Policies designed to improve the diet quality and health of Americans may sometimes hit their target through an indirect means—those who make the foods that people eat. Food manufacturers may respond to policy by reformulating their products to better appeal to health-conscious consumers. If the change in how products are made is widespread, then improvements in diet quality will extend to many consumers, even those who do not care about eating healthy.

The two forces responsible for this dynamic are consumers' usually weak reaction and manufacturers' sometimes strong reaction to changes in food policy. A closer look at these forces provides insight into how policies stimulate and perpetuate improvements in Americans' diets.

Consumers Are Relatively Unaffected by Price Changes . . .

Policies aimed at getting consumers to choose healthier diets by manipulating retail food prices—such as taxes on unhealthy foods or subsidies on healthy foods—are likely to have only marginal effects



Grocery aisle (Shutterstock); Wheat field (Jupiterimages)

on food choices. Empirical research has found that consumers are not very responsive to small changes in food prices: a 1-percent change in food price usually triggers a less than 1-percent change in quantity purchased. ERS researchers calculated that a 10-percent price discount at the retail level would encourage low-income households to increase their consumption of both fruit and vegetables by 2-5 percent.

Policies affecting commodity prices—such as commodity support programs or tariffs—are even less likely to have a large influence on consumer food choices because they have weak effects on retail prices. For example, the value of corn in an 18-ounce box of corn flakes and a 2-liter bottle of soda is about 4.9 cents and 5.7 cents, respectively (when field corn is priced at \$3.40 per bushel as in 2007). ERS research found that even a 50-percent increase in corn prices would be expected to raise the price of a box of corn flakes by about 1.6 cents, or 0.5 percent, and the price of soda by 1.9 cents per 2-liter bottle, or 1 percent. These are relatively minor changes in the average household's food budget and would likely trigger negligible changes in household consumption.

...While Manufacturers Are Sensitive to Effects on Production Costs

Manufacturers, unlike consumers, may react strongly to commodity price changes. Even small changes in unit input prices could have relatively large effects on aggregate production costs and on a manufacturer's bottom line. As a result, policies affecting commodity prices could result in product reformulation to less expensive inputs.

USDA-funded research at the University of Iowa, for example, suggests that two types of agricultural policies contributed to the shift in relative prices and uses of corn sweeteners and sugar in food manufacturing. According to the study, larger investments in public research for grains than for sugar crops led to yield increases and price decreases for corn that have not been matched in sugar crops. At the same time, sugar production allotments and trade restrictions, combined with subsidies for corn production, further contributed to making corn sweeteners relatively less expensive than sugar.

These policies helped make HFCS-42 (one of the blends of high fructose corn syrup, or HFCS) more than two times less expensive

than sugar by 2005—and drove an increase in the use of HFCS. ERS Food Availability data show that per capita corn sweetener availability in the U.S. grew almost 400 percent between 1970 and 2005, while per capita availability of refined cane and beet sugar declined nearly 40 percent (availability is an estimate of consumption based on the supply of commodities, net of exports and other uses).

Since its introduction in 1967, HFCS rose sharply in availability to a peak of about 64 pounds per person in 1999 and then dropped to 58 pounds per person by 2007. In 2005, the soft drink industry alone used about 6.2 million short tons of HFCS, followed by the processed foods and baking industries at 0.9 and 0.5 million short tons, respectively. Though the shift from sugar to HFCS itself is diet-quality neutral (equal amounts of HFCS and sugar in the diet have the same affect on diet quality), it illustrates the large impact agricultural policies can have on the content of processed foods.

Consumers May Disregard or Not Notice Nutrition Information...

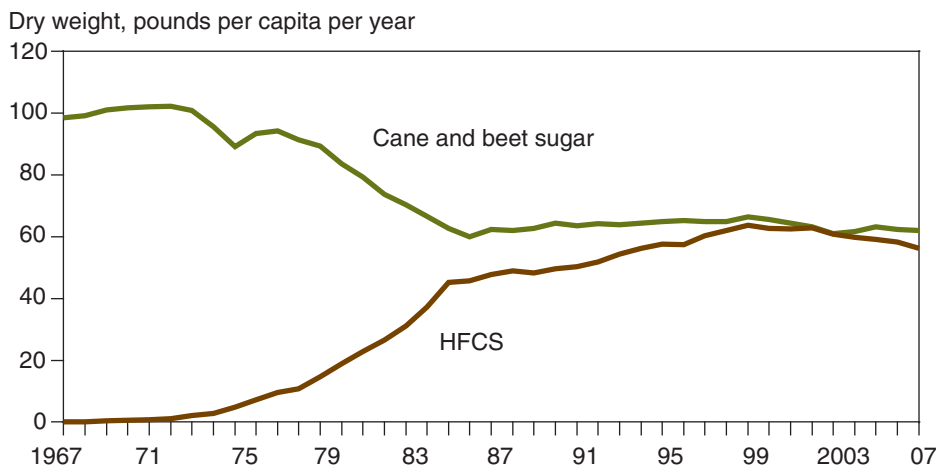
Nutrition information is a key ingredient in good diet choices: it is hard to imagine someone building a healthy diet without some nutrition knowledge. However, the evidence of the efficacy of nutrition information on food choices is mixed.

Findings show that nutrition information, such as that found on the Nutrition Facts panel on packaged food, is useful for helping consumers make healthful food choices. According to USDA's Diet and Health Knowledge Survey, nearly 81 percent of respondents who used labels in 1995-96 reported that they made better food choices as a result. However, consumers often make hasty decisions at the grocery store and do not take the time to read nutrition information before purchasing an item. ERS research examining changes in consumer use

of nutrition labels on food packages between 1995-96 and 2005-06 found that although a majority of consumers reported using nutrition labels when buying food, use declined over the decade for most label components, including the Nutrition Facts panel. Data

from the Diet Behavior and Nutrition module of the 2005-06 National Health and Nutrition Examination Survey reveal that 23 percent of respondents sometimes used the Nutrition Facts panel when buying food, while 39 percent used it always or often.

High fructose corn syrup availability peaked in 1999



Source: USDA, Economic Research Service.



Frank Herholdt/Getty Images

...While Many Manufacturers May Respond Competitively

Though all consumers may not respond to nutrition information, many food manufacturers might. Labeling regulations and nutrition education programs can spur reformulation of processed foods by stimulating competition among manufacturers to offer products that appeal to health-conscious consumers. In a rush to get their "healthier" products on the shelves before the competition, many manufacturers may reformulate before a policy is enacted or before many consumers are aware of the health attribute.

Competition over brand reputation reinforces incentives to reformulate. To build a brand's reputation for wholesomeness, healthfulness, and social responsibility, manufacturers may reformulate products and make well-advertised investments in new healthier ingredients and processes. Reformulating and adopting expensive process changes could have the added benefit of raising industry quality standards and, in effect, creating barriers to marketplace entry if other firms find it difficult to meet rising health and quality expectations.

The proliferation of whole-grain products in recent years provides evidence of the effect of information policy on product composition. Since 1980, the U.S. Department of Health and Human Services and USDA have jointly published the *Dietary Guidelines for Americans*. Though the *Guidelines* have always encouraged consumption of whole grains for a healthy diet, the 2005 version was the first to make specific quantity recommendations. Under the revised *Guidelines*, at least half of a person's daily grain intake should come from whole grains.

Manufacturers were quick to respond to the whole-grain recommendations, capitalizing on the media focus on the new *Guidelines*. Analysis of Datamonitor's Product-Scan Inc. data on packaged food introductions shows a jump in new whole-grain products

coinciding with, or even predating, the release of the *Dietary Guidelines* in 2005. New product introductions of whole-grain cereals, breads, pastas, rice, and flour began increasing in 2003. The trend for processed foods—bread, cereal, and pasta—was more pronounced than that for flour and rice and became evident shortly after the pre-release of the *Dietary Guidelines*, suggesting that competition for market share among processed food manufacturers was the impetus.

The reaction of manufacturers to mandatory trans fat labeling provides another recent example of the effect of nutrition information policy. Perhaps no nutritional issue has garnered more media attention than the very public debate about trans fats, found in partially hydrogenated vegetable oils used for deep frying and in formulations of many processed bakery foods, such as cookies, cakes, and crackers. Trans fats were first identified as a public health problem in the 1990s. Since then, media attention, lawsuits against major food industry firms by public interest groups, and the 2006 New York City ban on trans fats in restaurant foods helped fuel the debate on trans fats. The U.S. Food and Drug Administration issued its proposal

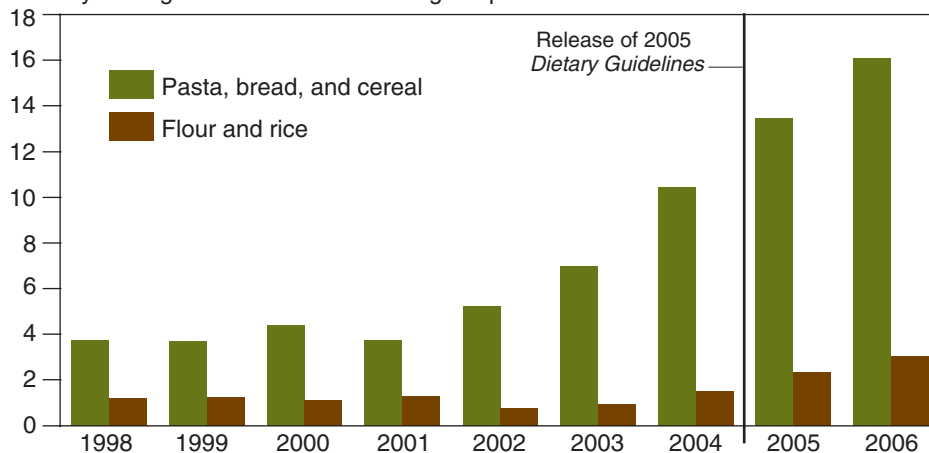
for mandatory disclosure of trans fat content on food labels in 1999 and its final regulation in 2003. The labeling regulations went into effect on January 1, 2006.

To secure or enhance their market position, several major food companies announced efforts to remove trans fats from leading brands over the past decade. Starting with Unilever in the 1990s, manufacturers such as Nestlé, Kraft, Campbell's, Kellogg's, and Frito-Lay have reformulated many of their products. Many companies chose to implement the labeling requirements for trans fats earlier than the January 1, 2006, deadline, particularly when they were able to disclose zero trans fats on products. In 2004, for example, Campbell's introduced Goldfish crackers without trans fats. Kellogg's Keebler brand foods were reformulated in 2005.

Product label information from Datamonitor's Product-Scan Inc. database shows that the number of new food products stating "no trans fat" on the label increased from 64 in 2003 to 733 in 2007, then fell to 642 in 2008. Products claiming "no trans fat" accounted for 13 percent of all new food product introductions in 2007. New foods with "no trans fat" occurred in increasing numbers of prod-

Manufacturers introduced whole-grain products in anticipation of the 2005 *Dietary Guidelines*

Monthly average number of new whole-grain products



Source: USDA, Economic Research Service analysis of Datamonitor's Product-Scan data.

uct categories and a wide variety of products from 2004 to 2007. Cookies, crackers, chips, pastry, and bread accounted for most of the new or reformulated products.

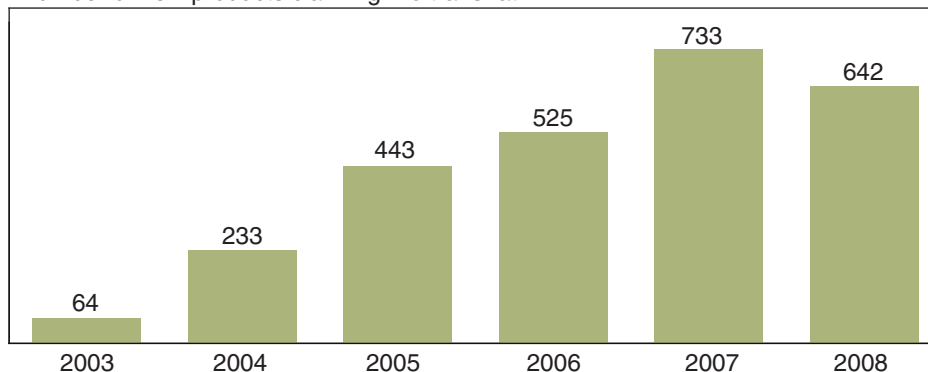
Manufacturers' Responsiveness Depends on Product and Production Adaptability

Manufacturers do not always react to food policy changes. Product quality concerns could slow or halt reformulations. If a product's taste deteriorates with reformulation, a manufacturer risks losing both its core customers and, ultimately, even health-conscious consumers. Many manufacturers argue, for example, that they would lose customers if they reduced the sodium content of their processed foods.

Difficulties in adapting production processes could also dampen reformulations. The increased use of whole grains, for example, reveals both farm- and processing-level constraints to increased production of whole-grain wheat. At the farm level, it may take a season or two to shift from red winter wheat to the more palatable white winter wheat. In some areas of the country, such a shift may not be possible. White winter wheat varieties developed for specialized whole-grain use in processed products require long-term breeding efforts. At the processing level, some machinery cannot handle the corrosive effects of whole grains.

The number of new "no trans fat" products grew by over 1,000 percent between 2003 and 2007

Number of new products claiming "no trans fat"



Source: USDA, Economic Research Service analysis of Datamonitor's Product-Scan data.

Technological constraints also hamper reformulations of products to remove trans fats used to fry foods in restaurants. While mandatory nutrition labeling does not apply to restaurant foods, restaurants, particularly national chains, have responded to the bans in New York City and California, and proposed bans on trans fats in other States. Major foodservice companies, such as McDonald's and Burger King, have announced their intent to use frying oils with no trans fats. Many restaurants, including Kentucky Fried Chicken, began replacing trans fats in 2006, in anticipation of the New York City ban.

A challenge in removing trans fat frying oils is finding a replacement that will enable restaurants to maintain a food product's taste and consistency. Possible alternatives include blends of conventional oils, such as cottonseed or sunflower, which provide greater stability, or soy oil with low-linolenic acid content. Securing reliable supplies of the new oils, whether they are conventional oils in limited supply, such as sunflower, or new varieties of soybeans takes time, accounting for some of the lag in removing trans fats. For example, the development of low-linolenic soybeans began in the 1980s with the discovery of a naturally occurring soybean genetic

variation that produces low-linolenic acids in soy oil.

As interest in alternatives to partially hydrogenated oils started to receive more attention, major seed companies began to develop commercially viable low-linolenic soy seed lines, with the first one introduced in 2005. In 2007, farmers planted 1.5 million acres of low-linolenic soybeans, producing about 1 billion pounds of low-linolenic oil. Industry sources say a 3-year lag is necessary to meet the rapidly expanding demand for this type of oil. Seed must be produced, farmers must be contracted to raise the crop, and the crop must be delivered through dedicated supply channels.

Reformulation Affects All Consumers, Not Just Those Who Are Nutritionally Aware

Though food policies may sometimes have little direct effect on consumer food choices, they may nevertheless influence consumer diet quality through their effect on product reformulation. If reformulation includes healthier inputs, it helps create a healthier food supply for all consumers, including those who are unaware of the reformulations or of the benefits of the healthier ingredients.



The introduction of new whole-grain food products, for example, had an impact on whole-grain consumption beyond what would have been expected due to consumer choice alone. According to the Nielsen Homescan data, purchases of whole-grain processed foods, such as bread and ready-to-eat cereals, rose faster than purchases of ingredients, such as flour and rice, following the release of the *Dietary Guidelines*. The average share of whole-grain bread sales relative to total bread sales increased 220 percent from 1998 to 2006, while whole-wheat flour sales as a share of total flour sales rose by less than 70 percent. This suggests that the success of the *Guidelines* in stimulating whole-grain consumption was not due solely or even primarily to consumers reading and acting upon the new advice. Instead, much of the increase in whole grain consumption likely resulted from product reformulations that increased the supply of whole grains in commonly consumed foods. As a result, even consumers who were unaware that their favorite brand had been reformulated ended up consuming higher quantities of whole grains. Fewer consumers made the conscious decision to purchase whole-grain flour and rice.

Reformulations Do Not Always Result in Healthier Diets

Though manufacturers' responsiveness to food policies provides policymakers with an indirect means to help Americans change the way they eat, reformulations and consumers' reaction to them may not always result in healthier diets. For one thing, diet quality changes due to reformulations are not always unambiguously positive. Many "whole-grain" products, for example, are not 100 percent whole grain and in some cases, sugar, salt, or fat is added to increase the palatability of whole-grain foods. As a result, the overall nutritional profile of the reformulated food may be diminished.

The substitute ingredients used in reformulations also may not lead to healthy food choices. For example, though removing trans fat from processed foods is an unqualified improvement in product healthfulness, the shift away from trans fats has not resulted in the same nutritional improvement across food categories. Product-Scan data indicate that relatively healthful oil substitutes have been used in chips, while less healthful oils dominate in reformulated cookies. Fifty-six percent of chips with the claim "no trans fat" in 2005-06 contained sunflower oil; 42 percent, corn oil; and 23 percent, canola oil.

In contrast, some cookies claiming "no trans fat" in 2005-06 had been reformulated with saturated fats: 28 percent contained palm oil and 17 percent used butter. Saturated fat is not a healthy food choice.

In addition, the overall health effects of reformulation, even healthy reformulations, can be muddled by the "halo" effect, in which consumers eat more of a product than they would otherwise because they think it is "healthy." For example, consumers who were satisfied with two regular cookies may decide to eat five "healthy" no-trans-fat cookies, leading to elevated calorie and saturated fat intake. The result could be a reduction in overall diet quality.

Manufacturers' responsiveness to food policy provides policymakers with a policy lever for affecting diet quality for large numbers of consumers. Effective use of this lever can help stimulate a chain reaction leading to healthy food reformulations and a more nutritious food supply. **W**

This article is drawn from . . .

"Special Section on Food Product Composition, Consumer Health, and Public Policy," by Laurian Unnevehr and Elise Golan (eds.), in *Food Policy*, Vol. 33, Issue 6, December 2008.

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The Decline in Consumer Use of Food Nutrition Labels, 1995-2006, by Jessica E. Todd and Jayachandran N. Variyam, ERR-63, USDA, Economic Research Service, August 2008, available at: www.ers.usda.gov/publications/err63/