Changing Food Demand and Consumer Preferences

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Introduction

In the course of just one generation, food consumption habits and preferences have changed to a great extent. Children raised in the 1970s and 1980s regularly ate foods made from processed mixes, such as Kraft Macaroni and Cheese and Wonder bread. They enjoyed eating at fast food restaurants. In the winter months, their vegetables mostly came from a freezer or can. Children preferred pizza, burgers, and hot dogs. Now parents themselves, these consumers do not want to serve the same highly processed foods to their own children. They serve organic foods if they can afford to do so. They want to offer healthier foods with "clean labels" that have a short list of ingredients and lower sodium. They try to steer clear of processed foods in general. They want greater control and are concerned with what is in their foods, the processes with which the foods are made, and where the ingredients from. They are bored by their parents' bland diets and enjoy exploring foods from different nationalities. There is an increasing desire for variety, taste, and local products. What happened in one generation? Many different factors have influenced this change.

In this article, I discuss some of the changes and trends in consumer preferences for food and some factors that are influencing these changes. I start with a discussion of key demographic changes and the implications for food consumption trends and consumer preferences. This leads into a more general discussion of how that food market is transforming, including a customization of products. I then discuss specific food trends and selected recent literature that has examined the factors that affect consumer preferences for food and food trends, including some of my own studies, and the impact on food markets. I conclude with generalizations that can be drawn and discuss avenues for future research.

Changing Demographics

The U.S. population is changing, and this has impacts on food preferences. I discuss specific demographic changes how they influences food preferences and food demand.

Older

The U.S. population is getting older. The proportion of the population that is 65 years old or greater is thirteen percent and is expected to reach 20% by 2050 (Kotkin. 2010). With a graying population, there are greater concerns about health. Associated with amplified health concerns are increased consumer preferences towards healthier foods. Counteracting health concerns is the fact that the way older people eat meals is changing. Possibly related to higher proportions of single-person households, older consumers prepare formal meals less often. Instead, they choose more one-dish meals like pizza or sandwiches. This then impacts the use of side dishes, of which vegetables are the largest. This shift, combined with the overall long term trend toward simplifying

the dinner meal with fewer sides and desserts, has driven declines in fruit and vegetable consumption for older consumers (PBH, 2015).

Health Concerns

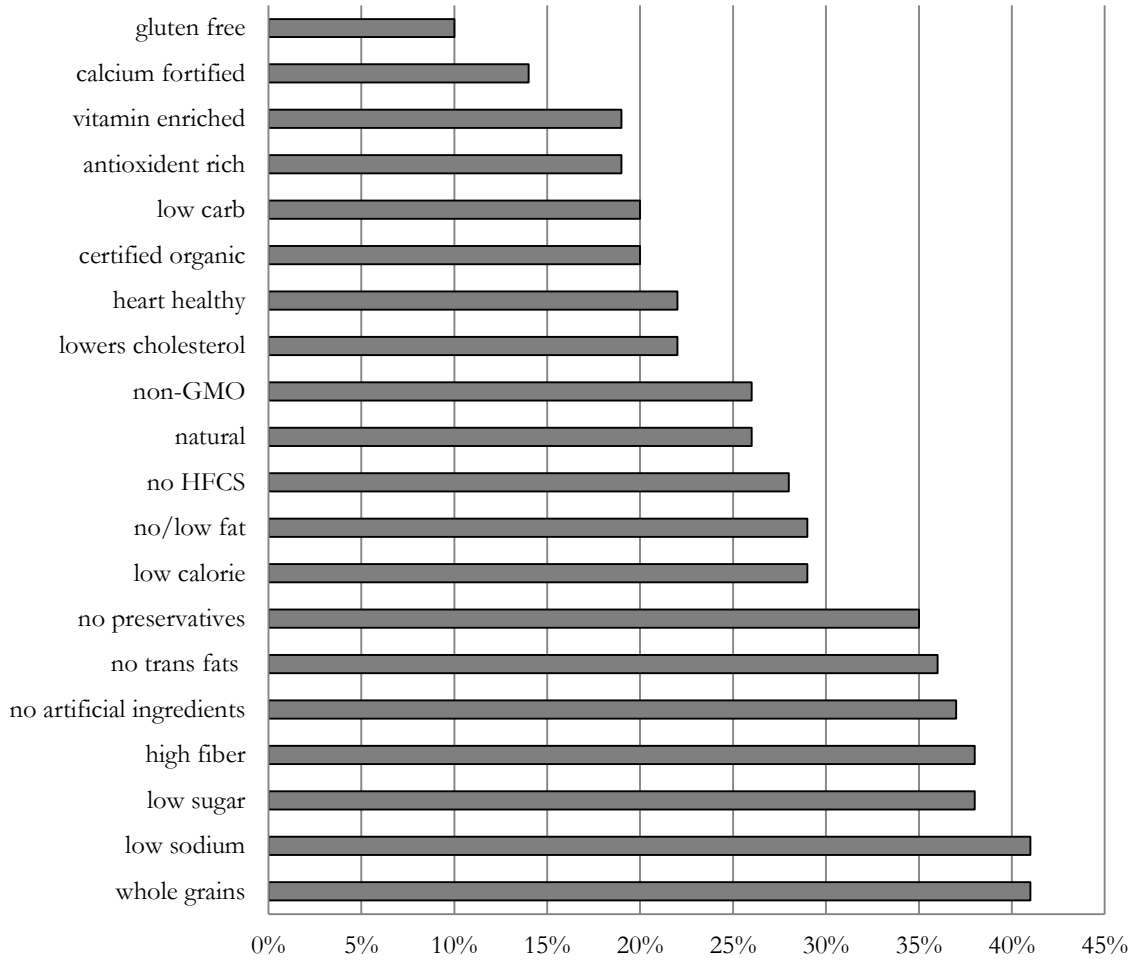
At the same time, more Americans are overweight and obese. According to the Centers for Disease Control and Prevention (CDC), 69% of U.S. adults are overweight or obese (CDC, 2015). Inexpensive highly processed food and fast food, combined with less exercise caught up with our society. In response, healthful eating became a national issue, highly covered by the news media. This reinforces the concerns about health as more consumers want to lose weight. A decades-long trend of increasing caloric consumption has reversed significantly (Ford and Dietz, 2013). The trend of calorie posting in restaurants and increased prominence of nutritional labels may result in increased awareness of calories consumed. However, the empirical evidence on the impact is mixed (Kiesel et al., 2011). Only over the longer term will we understand the impact of the changing social norms on calorie awareness. The real or perceived trade-offs between healthful foods and taste considerations imply that consumers will not necessarily make healthier choices.

As Ellison (2004) documents, there has been a generational shift. The processed food staples that were popular a generation ago are not considered healthy enough for them to feed to their own kids. This is bad news for unhealthy commonly consumed foods, such as highly sweetened breakfast cereals that are marketed to children. In fact, the breakfast cereal category is indicative of many recent changes in consumer preferences. The cereal business has been declining for more than a decade as consumers increasingly prefer lower sugar and higher protein options (Strom, 2014). In contrast to the cereals category, Greek yogurt has hugely expanded as a category which markets its high protein content. A related issue is that many parents are trying to raise super children. Hence they are willing to pay more for specialized sports foods, such as 100% whey protein to put in smoothies.

Certain nutrition fads have gained popularity. These fads are often based on a genuine health concern such as celiac disease, which necessitates a gluten-free diet. However, the prevalence of celiac disease or gluten sensitivity does not account for growth in popularity of gluten free products. These fads make a difference in the market. For example, an exception within the declining breakfast cereal category is the Chex brand that markets gluten-free breakfast cereals (Strom, 2014).

Related to health concerns, consumers are increasingly demanding nutrition and ingredient claims on the products they buy. Figure 1 below shows the percentages of consumers who seek specific claims. The percentage of consumers who try to buy gluten free products is 10%, which is well above the less than 1% of Americans who have Celiac disease (NIH, 2015).

Figure 1
Product Claims Sought by Consumers, 2015



Source: Food Marketing Institute 2015, U.S. Grocery Shopper Trends Report

Multi-ethnic

Another demographic trend is that the United States is more multi-ethnic with increasing immigrants from Asia and Latin America than in the past. The Hispanic population is the fastest-growing U.S. demographic and is projected by the Pew Hispanic Center to increase from 17% of the U.S. population to 26% by 2050 (Gomez, 2014). Although food preferences vary across Hispanic populations, the vast majority of U.S. Hispanics come from Mexico (U.S. Census, 2013). Mexican American food is often spicy with liberal use of chilies. Many Asian cuisines are also spicy. Stevenson and Yeomans (1995) experimentally demonstrated that people's preferences for the taste of chili burn increased after consuming food that produced this sensation, without affecting the preferences of other foods. Their results suggest that foods that are initially slightly disliked may become more satisfying after repeated consumption. This exposure effect helps explain the

migration to spicier U.S. food preferences.

Fewer Traditional Families

There are fewer traditional families and more single-person households, and the age of first marriage is later. In 2012, the proportion of single-person households was 27.4 percent, up from 17 percent in 1970 (Vespa, Lewis, and Kreider, 2013). There are also fewer families with children living in the household, down to 28% (U.S. Census, 2014). This has implications for smaller package sizes and more prepared foods offered in grocery stores. The growth of single-person households is driving a trend of snacking rather than consuming three meals a day (*Progressive Grocer*, 2015). Single-person households can be more flexible as to the timing and contents of their meals. Many of these single households want healthy snack options to be eaten as their meal.

Women in the Workforce

There is greater participation of women in the workforce, and overall, households are working longer hours. This creates demand for convenience. Sales of food consumed away from home have increased over time and are approximately equal to the level of purchases for food consumed at home (USDA, 2013). The increased female labor force participation and increased working hours mean that there is less time to plan and cook. This can result in more spontaneous food shopping and meals. In addition, men do more of the food shopping than in the past. Combined with increased health concerns that make parents want to avoid fast food, grocery stores have responded with increased offerings of ready-to-eat, made-in-store meals, such as hot roasted whole chickens, that can be served for a family meal.

Education and Income

The population is becoming more educated. Thirty-four percent of millennials have a bachelor's degree or higher, but income is flat (Patten and Fry, 2015). Exposure to education may have implications for openness to trying new foods. At the same time, there is greater income inequality (Desilver, 2013). This implies more heterogeneous consumers. This contributes towards a trend of customization.

Transformation of the Market

Consumers' expectations for quality have increased, and social norms for food have changed.

Influence of Food Elite

These changes have simultaneously occurred with an increase in the influence in society of the "food elite." These movers and shakers include celebrity chefs, activists, and authors, such as Alice

Waters, the chef and restaurant owner who is on friendly terms with U.S. First Lady Michelle Obama. Cooking shows on television have gained in popularity with stars such as Chef Gordon Ramsey. In the same way, although at varying levels of sophistication, social media mavens influence what consumers choose to serve and eat. At the high end, super moms post pictures of their masterpiece meals on Pinterest. At the lower end, videos of young men making "monkey bread" are posted on Facebook, implicitly suggesting that anyone could successfully make the same recipe.

In response, there is a new grocery environment. Consumers want delicious food that is healthier and more sophisticated. This trend is epitomized by the emergence of Whole foods, which charges higher prices and cultivates a reputation for quality. Many shoppers stick to the perimeter of the grocery store, avoiding the pre-packaged items in the center. They no longer make a lot of recipes "from scratch," and they buy more fresh fruits, vegetables, meats, and made-in-store meals that do not need additional ingredients. Whole Foods retail chain has mastered this with the equivalent of a restaurant with all of the made-from-scratch items in the store.

Consumers Willing to Spend More

Many consumers are willing to spend more than in the past on specialty or high quality products. They a higher share of food dollars on high-end items, up to 25% of their food budget in 2014, especially high-end chocolate, olive oil and cheese (Watrous, 2014). At the same time, there is a significant budget-conscious consumer segment that searches for value. This budget-conscious segment drives the continuing growth of value-focused stores, such as Walmart, in the grocery segment. Food companies, such as Kraft, are successfully targeting this consumer segment. Lukovitz (2015) writes that these budget-conscious consumers often take pride in being excellent cooks and stretching their limited budgets, without sacrificing taste or nutrition.

Customization

There is a simultaneous trend of customization in food marketing, led by food and drink establishments, such as Starbucks and Subway. To illustrate this point, in the recent past, restaurant customers could generally only order their coffees two ways: "black" or with cream and sugar. Now, Starbucks offers more than 87,000 possible drink combinations, according to their website. From the standard model of horizontal product differentiation, we know consumers are willing to pay more for products are the closest to each consumer's ideal variety. As fixed costs decrease with technology and advances in logistics and supply chain management, it is possible for more varieties to exist in the market. We see this with food products in many different dimensions, including the increasing number of stock keeping units (SKUs) in grocery stores to the explosion of the craft beer category.

The craft beer movement is consistent with a broader trend in food marketing that products are becoming increasingly differentiated and customized. In recent years, the U.S. beer industry has

changed dramatically. Thirty years ago, there were only a handful of specialty craft breweries. In 2014, there were 3418 craft breweries offering a wide variety of differentiated products (Brewers Association, 2015). This growth of the microbrew movement is consistent with a general shift in food preferences. There is an increasing desire for variety, taste, and local products. Although mass produced beers still account for the vast majority of beer sales, sales of craft beers have also grown steadily for many years. According to the Brewer's Association, craft brewers' share of volume was 11% in 2014 with an estimated $19.6 billion in retail sales. This is a growth rate of 17.6% in volume and 22% in sales. Craft beer exports grew by 36% in volume. This growth occurred while overall U.S. beer sales only grew by 0.5% by volume in 2014 (Brewers Association, 2015).

Toro Gonzalez, McCluskey, and Mittelhammer (2014) analyzed the demand for beer as a differentiated product and estimated own-price, cross-price and income elasticities for beer by type: craft beer, mass-produced beer, and imported beer. Within each type, demands for particular types are own-price inelastic, but there are differences between types. Mass-produced beer has the lowest own-price elasticity. A possible explanation for this insensitivity to price is high brand loyalty among consumers to their particular brand of mass-produced beers. Advertising rivalries in the mass-produced segment have traditionally been intense (Nelson, 2003). Both craft and import beers are also substantially own-price inelastic, although demand for these beer types is notably more price responsive than is mass-produced beer. They found that the elasticity of substitution across types of beer is close to zero. Thus, for example, when Budweiser goes on sale, it does not affect the demand for the double IPA category. The results suggest that there are effectively separate markets for beer by type. The craft beer phenomenon is consistent with the idea that consumers are becoming "food explorers," and they are less loyal to specific brands.

Another way to explain the phenomenon of customization is the idea of the "long tail" (Anderson, 2008). Anderson argues that our culture and economy are shifting away from mainstream products and markets and toward a huge number of niches that appeals to fewer consumers who are "in the long tail" of the distribution of consumer preferences. In the past, it was only profitable to sell products that appealed to the masses. However, as production and distribution costs fall, it becomes profitable to sell more customized products. There is less need to squeeze products and consumers into one-size-fits-all categories. The internet and smart phones lower search costs for consumers to find exactly what they are looking for. Advances in logistics and supply chain management have lowered distribution costs. The result is that there are more customized goods that can be just as profitable as mass marketed goods, or even more profitable than mass appeal products.

As part of this customization trend, products are increasingly offered with socially responsible and environmentally friendly claims. These products include organic, eco-labeled, and other quality-differentiated foods, sometimes with labels that explicitly claim that the products were produced with sound environmental, socially responsible, animal welfare, and fair labor practices. Other labels claim that the product has specific production process characteristics, quality characteristics, or comes from a specific geographic area. These claims are often about the production process, and

they fall into the category of "credence good" attributes. Quality in a credence good cannot be directly observed (or it is observed too slowly to matter or it is prohibitively costly to be observed) by consumers even after consumption (Darby and Karni, 1973)[1].

There is a need for information to facilitate communication about product characteristics, quality, traceability, and safety. Product labels are often used to communicate with consumers. Labels allow firms to signal quality and other attributes and, in doing so, it creates the potential for quality premiums. The information allows buyers to select the particular quality characteristics that they prefer and are willing to pay for can increase satisfaction.

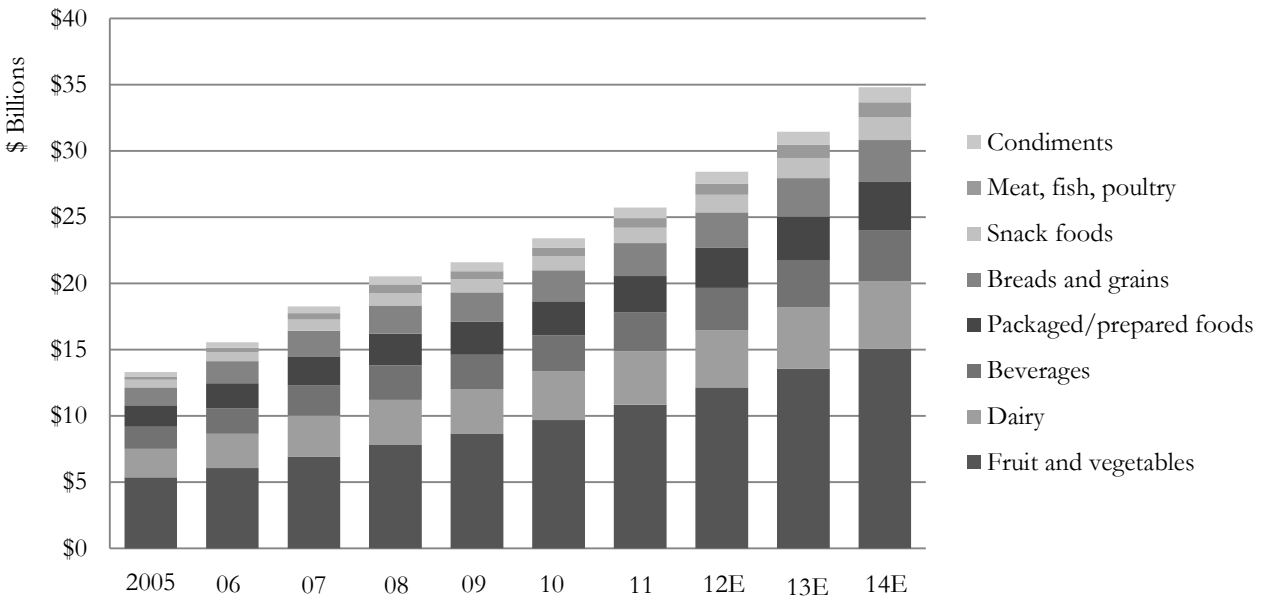
Food as Identity

At a societal level, food consumption became a statement of identity. There is intersection of environmental concerns, politics, health, and quality. According to the USDA, "Organic is a labeling term that indicates that the food or other agricultural product has been produced through approved methods that integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity," (USDA 2002). A segment of consumers will pay a premium for a place-based food system that considers the land, climate, and the broader ecosystem. Organic may be a "gateway" product category that initially leads a consumer with certain values into more loosely defined sustainable food markets.

If a consumer identifies as someone who cares about the land and environment, social causes, and animal welfare, that consumer will likely buy organic food. Figure 2 presents the sales of organic food over time by category. The growth in the organic segment has been impressive across all categories, but it been especially large for fruits and vegetables. While it is still under scientific debate whether organically and conventionally produced foodstuffs are significantly different in their nutrient content, the consumer consensus is that organic foods are healthier. The lack of synthetic pesticides and fertilizers are definitely a plus. Interestingly, organic foods also are viewed as healthy, even if the product would normally be considered unhealthy. For example, organic yogurt still might contain a lot of sugar, which can make children overweight.

[1]The early literature on credence goods focused on expert services. Consumers are often unable to judge the quality of the services they receive from doctors, lawyers, and auto mechanics. *Ex post*, the buyer is uncertain about the quality of goods or services that he or she has purchased. This asymmetric information creates an incentive for fraud in the market for credence goods. McCluskey (2000) shows that repeat-purchase relationships and third-party monitoring are required for high-quality credence goods to be available. In this context, she discusses policy implications for national organic food standards.

Figure 2
U.S. Organic Food Sales by Category, 2005-14E



Note: E=estimate
Source: USDA, Economic Research Service using data from *Nutrition Business Journal*

At the same time, organic food and sustainable agriculture became linked with local, small farms, and political viewpoints. This movement is in a way a rejection of modern agricultural technology, such as foods made with genetically modified (GM) ingredients. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering are not allowed in organic products. For U.S. consumers organic foods are the GM-free product. There is a great deal of fear about antibiotics and hormones in foods.

Environmentally and Socially Responsible Foods

Consumer expectations for firm's ethical conduct, food quality, and anxieties over food risk are all increasing. At the same time, consumers want to make a difference with their purchases. This has resulted in an abundance of food standards, certifications, and labels with claims concerning socially responsible production characteristics, geographic origin, organic status, and other attributes, as firms try to position their products in the market for high-value foods. Many of these attributes relate to environmental and social concerns, including such aspects as "fair-trade" for fair treatment of workers, humane treatment of domestic animals, minimizing the distance food is transported, wildlife and biodiversity preservation, and sustainability. Agricultural sustainability incorporates both the basic notion of preserving productivity and continuing land in its agricultural use.

Figure 3
Examples of Ecolabels

Source: Hoffman, 2013

Within this socially/environmentally responsible category, products may appeal to the same type of consumer. That is, they may be substitutes and compete with each other. For example, eco-labeled apples compete with organic apples for the "green" consumer. However, the idea of an eco-label is more vague and the personal benefits are more difficult to measure compared with organic products. Following this line of reasoning, Loureiro et al. (2001) assessed how consumer respond to offerings of eco-labeled, organic, and regular apples. Consistent with the idea that the eco-label alternative is less desirable when compared with organic apples for certain "green" consumers, they found that some of the factors that have a positive and significant effect on the probability of organic choice had a negative impact on the probability of the eco-label choice. Interestingly, the perceived quality of eco-labeled apples had a positive and significant effect on the probability of choosing eco-labeled apples. This is consistent with the conjecture that eco-labeled apples satisfy a niche market for consumers who may not be as willing to trade off quality of the fruit for higher environmental or food safety benefits compared with organic consumers.

In a separate estimation, Loureiro et al. (2002) estimated the mean willingness to pay (WTP) for eco-labeled apples certified by the Food Alliance (TFA), a non-profit third-party certifying organization based in Portland, Oregon. TFA uses market-based incentives to promote sustainable agricultural practices in the Pacific Northwest. Farmers who reduce or eliminate pesticides, conserve the soil and water, and provide safe and fair working conditions, become eligible to market their products

with the TFA-approved seal. TFA-approved farmers hope to earn the recognition of environmentally conscious shoppers and garner public goodwill. At the time, TFA was the only labeling program in the Pacific Northwest that required specific farm practices and third-party monitoring. The estimated premium was small (about 5 percent), reflecting the overall difficulty with garnering a premium based on "environmentally sound" practices. Complicating eco-label valuation is the fact that eco-labels may work better for some products than for others, implying that a general "recipe" to stimulate "green markets" may not work.

Understanding consumer preferences for characteristics such as reduced pesticides, fair-trade, and ethical treatment of animals is difficult because different ethical characteristics will appeal to different individuals, depending on their personal attitudes and values. McCluskey, Durham, and Horn (2009) estimated consumer willingness to pay (WTP) for three food products with different socially responsible production attributes: minimal-pesticide strawberries, fair-trade bananas, and milk from pasture-fed cows. They collected information on consumer attitudes about health and the environment and other motivational factors through a series of survey questions. Responses to questions about attitudes were consolidated with principal components analysis (PCA) into the following factors: environmentalism, wildlife preservation, health, food Aficionado, farm preservation, farm labor, and animal welfare. These factors were included as explanatory variables in a contingent valuation model of willingness to pay (WTP) in order to understand the underlying motivations for consumers to purchase these products. Including the factors in the estimation increased the explanatory power.

The factor representing the consumer's level of "environmentalism" was the most important in explaining willingness to pay across these three products. Other factors were statistically significant for specific products. For low-pesticide strawberries, wildlife preservation and health concerns were also statistically significant. For milk from pasture-fed cows, farm preservation and animal welfare were also statistically significant. For fair-trade bananas, farm labor and farm preservation were statistically significant. All three products commanded a statistically significant price premium, with the highest premium for the minimal-pesticide strawberries with a premium of $0.82 per pound.

Local Foods

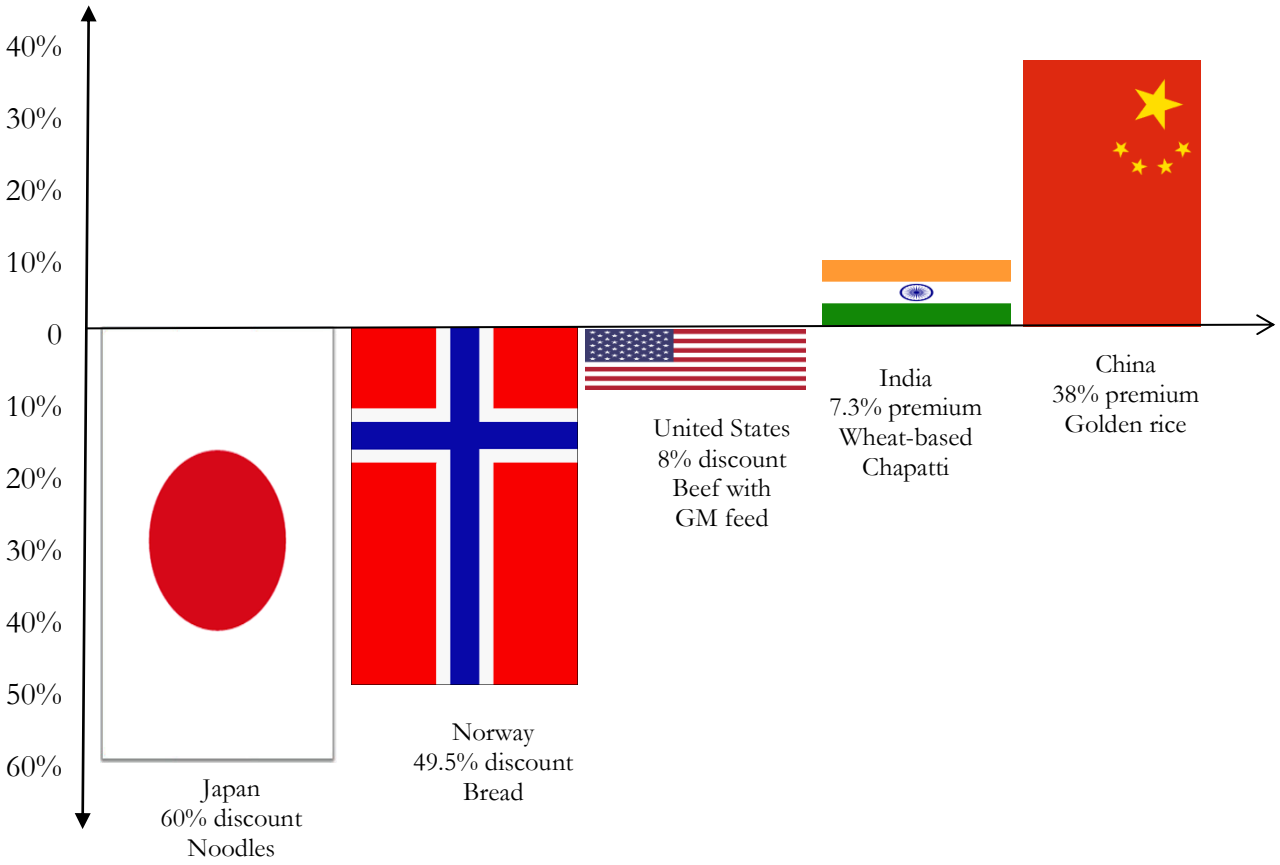
Foods with regional and local origin labeling are gaining prominence. In fact, recent studies have shown a greater interest in locally produced than organic products (Ostrom, 2006). Many consumers are willing to pay a premium for local foods. The motivations for this trend include supporting local farms, preserving farms, in general. Locavores want to support the local economy and know where their food comes from. There are also environmental motivations, including the idea that reducing "food miles" is better for the environment. However, net impact of the local food movement is still under debate. Local foods are usually perceived as fresher or higher quality. The difficulties facing local food providers include that the definition of local is in the eye of the beholder and there may be limited availability of products in many regions. On the former point,

should "local" be considered to be within 100 miles or within a state? In the western United States, a within state definition of local can include products that were produced hundreds of miles away. Consumers may lose trust in a retailer who sells food products with local claims that are not produced locally.

Rejection of New Food Technology

There has long been a consumer movement to reject modern agricultural technology, such as genetic modification, synthetic fertilizers, and irradiation. Over the past thirty years, GM foods have been an especially contentious issue. Even though the scientific consensus is that GM products are safe for human consumption, there has been a lack of acceptance by a segment of consumers, which is well documented and has resulted in reduced or curbed demand for GM food products (see Huffman and McCluskey, 2014, for a discussion). Figure 4 below presents mean consumer willingness to pay expressed in percentages of premium or discount relative to the price of the conventional product.

Figure 4
Consumer Mean Willingness to Pay a Premium or Discount for GM Foods



Sources: Anand et al, 2007; Li et al, 2004; Grimsrud et al, 2004; McCluskey et al, 2003; Li et al 2002.

This consumer skepticism is based on perceived risks generally over unknown environmental and health consequences, such as unanticipated allergic responses, the spread of pest resistance or herbicide tolerance to wild plants, and inadvertent toxicity to wildlife. Further, many are concerned with the ethical dimensions of biotechnology. Other consumers prefer to consume "natural" foods whenever possible. Consumer attitudes and behavior toward genetically modified food products are complex and differ across cultures.

Most of the GM crops that have been widely adopted have "first-generation" genetic modifications, which reduce production costs. With first-generation GM products, consumers might expect a discounted price because of the cost savings they provide. In contrast, "second-generation" GM products include quality traits or product-enhancing attributes such as nutritional benefits. With first-generation GM traits, consumers should expect to pay a lower market price. There is a segment of consumers who are willing to pay more for GM-free. Referring back to Figure 1, according to the Food Marketing Institute, 26% U.S. shoppers seek non-GMO claims, and this is up from 22% in 2014. The GM-free consumer segment is currently being served in the U.S. by the organic food industry (Huffman and Strzok 2013). In contrast, for second-generation GM products, consumers can be expected to pay a premium price.

Another category of new technology is "functional foods," which can be defined as modified food products that have been engineered or designed to contain increased health benefits that extend past the normal benefits of the traditional food product (Doyon and Labrecque, 2010). Consumers' acceptance and demand for these new food products are driven by public perception of risks, benefits, and safety of these food products (Hossain and Onyango, 2004). Although functional food products provide health benefits beyond basic nutrition, some consumers may still reject them because they utilize new technology. Markosyan, McCluskey and Wahl (2009) estimated consumer willingness to pay for apples enriched with an antioxidant coating in Seattle and Spokane, Washington. They found that organic consumers and those from Seattle were less likely to choose the enhanced apples.

Information regarding the potential health benefits of antioxidants had a positive and significant effect on consumers' willingness to pay. The effect of information suggests that promotion of antioxidants and naturally enriched foods with antioxidants through media and other channels will likely improve their acceptance by providing uninformed consumers with basic knowledge of functional food. The estimated mean willingness to pay suggests that there is a small premium associated with this product. Zaikin and McCluskey (21013) replicated this survey in Uzbekistan. Comparing the results with the U.S. study of the same product Markosyan, McCluskey and Wahl (2009), the Uzbek respondents were willing to pay less for apples with coatings that contain antioxidants (6% discount compared to 8% premium).

What does this mean for the future?

Future Opportunities and Challenges for the Food Industry

Overall, we should expect consumer expectations for quality, taste, and healthfulness to continue to increase. Many companies will need to reinvent themselves. In the past, food companies often pushed to lower their costs rather than to win consumers with their taste and varieties. There will still be a slot for low-cost firms, but even Walmart will need to offer higher quality options. The future of food is about taste, variety, healthiness, natural, authenticity, and freshness. Food companies must keep in mind that consumer demand for these things is based on consumer perceptions. For example, almond milk in the refrigerated section is not fresher, but it is perceived to be. There has been a general rejection of new technology with food. Thus, any food with new technology must be carefully marketed to consumers and shown to benefit them in some way. Ideally it should have an enhanced product attribute that consumers want.

Consumers must perceive high eating quality in order for food products to command a premium price. This is especially important for socially responsible and origin-based products. We can expect increased product differentiation and customization. At the same time, there will always be a budget-conscious consumer segment. This can mitigate other trends. Dietary globalization will provide new opportunities abroad for companies.

As demographics change, retailers must change also. They need to offer new products and flavors that might have Asian or Hispanic influences. They need to be conscious of calorie levels. They need to position snack items as healthful meal options for single-person households. They need to offer more convenient products that include fruits, vegetables, and protein. At the same time, they should emphasize their fresh, local, and environmental products.

Future Research Opportunities and Challenges for Food Economists

As agricultural and applied economists, we work in a time in which data is plentiful. Firms have retail scanner data, so researcher-firm data sharing agreement can be mutually beneficial. It is possible to perform actual "field experiments," with allow for exciting opportunities for the researcher to gain insights outside of the lab. Partnering with researchers allows the firm to understand the effect of a marketing or strategic change in a sophisticated way that its staff may not the time or quantitative expertise to complete. These partnerships can help the firm to make more informed decisions. The challenges include confidentiality issues. Researchers want to publish their results. They must do so in a way that is acceptable to the partnering firm(s) and does not divulge trade secrets.

The availability of geographic information system (GIS) data can help us understand how the spatial dimension affects markets and consumer choices. For example, Yang, McCluskey, and Brady (2012)

used GIS data to understand that location of wineries affect their market prices of their wines more than their expert scores (a proxy measure for quality). Insights from behavioral economics help us to better understand how consumers make choices. For example, Wansink, Just and Payne (2009) use these ideas to understand what leads some consumers to overeat.

Another opportunity for agricultural and applied economists is that scientists and researchers from other disciplines increasingly recognize the value of incorporating economic questions and procedures in their projects. For example, economic experiments can be included in tasting experiments to understand how much consumers value taste, mouth feel, and other palatability attributes, and how these factors change and adapt over time with repeated experience. Other exciting areas include neuroeconomics and eye tracking studies. With these approaches, researchers may gain insights into how the subconscious mind affects consumer choice and preferences.

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