



**Title: Broccoli or Burgers? Food Law's Policy Impact
on the Marketplace and Eating Habits**

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Moderator

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Tab 1 – Biographies or CVs

Carrie Ricci is the Associate General Counsel for the Marketing, Regulatory and Food Safety Programs Division of the Office of the General Counsel, U.S. Department of Agriculture. Carrie leads a team of 33 attorneys and support staff, providing legal support to USDA's Agricultural Marketing Service, Animal Plant Health Inspection Service, Food Safety Inspection Service, and the Grain Inspection and Packers and Stockyards Administration. Prior to joining USDA in June of 2012, Carrie was an Assistant General Counsel with the Department of Defense Education Activity, providing legal support to fourteen school districts world-wide, servicing 87,000 children in grades K-12. Before serving with DoDEA, Carrie served on active duty as an Army officer for 22 years, where she practiced criminal, administrative, national security, and military personnel law. Carrie is a graduate of Georgetown University and the University of Maryland School of Law. She holds an LL.M. in Military Law from the Army Judge Advocate General's Legal Center, and an LL.M. in Intellectual Property Law from the George Washington University School of Law. Carrie currently serves as Co-Chair of the HNBA's Latina Commission.

Luis Avila is Associate General Counsel of US Foods, Inc. Mr. Avila is an accomplished legal and management professional with diversified in-house and major law firm experience. US Foods, Inc. is a \$22 billion dollar privately held foodservice distribution company. Mr. Avila works regularly with the senior leadership team. He has transaction work experience, and works in partnership with the Merchandising, Procurement, IT, Real Estate and Operations departments of US Foods, Inc. Global-minded, multi-cultural and experienced in business and legal transactions in jurisdictions on 5 continents.

Vilma T. Arce Stark is counsel of the Organization of American States (OAS) in Washington, DC. As a member of the Department of Legal Services at the OAS, Vilma is responsible for delivering all litigation, transactional, and advisory legal services to the General Assembly, Permanent Council, General Secretariat, and the other organs, agencies, and entities of the OAS. All of her legal work is conducted in the Spanish and English languages, and occasionally French and Portuguese. Vilma started her legal career at the New York and San Francisco offices of the law firm Latham & Watkins, LLP, where she served the litigation and corporate transactional practice groups for almost four years. Vilma was the recipient of the Pro Bono Advocate Award of Legal Services for Children in 2009 for her creative and zealous work on an asylum matter, and she received Latham's Pro Bono Award in 2006, 2007, and 2008. In 2009, Vilma left Latham to serve as law clerk of the Honorable Matthew F. Kennelly of the United States District Court for the Northern District of Illinois. Upon concluding her clerkship, Vilma became associate of Williams, Montgomery & John, Ltd, a boutique litigation law firm in Chicago. Recently, Vilma developed a passion for food and nutrition issues and, in that capacity, she is working on a project that would establish March 30 as No Junk Food Day – a day dedicated to promoting healthy eating awareness. Vilma received her J.D. from New York University, and her B.A., magna cum laude and with honors, from the University of Southern California.

Tab 2 – Course Materials (articles, publications, other materials)

Article 1 – available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2804645/>

The Food Industry and Self-Regulation: Standards to Promote Success and to Avoid Public Health Failures

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Abstract

Threatened by possible government regulation and critical public opinion, industries often undertake self-regulatory actions, issue statements of concern for public welfare, and assert that self-regulation is sufficient to protect the public. The food industry has made highly visible pledges to curtail children's food marketing, sell fewer unhealthy products in schools, and label foods in responsible ways. Ceding regulation to industry carries opportunities but is highly risky. In some industries (e.g., tobacco), self-regulation has been an abject failure, but in others (e.g., forestry and marine fisheries), it has been more successful. We examined food industry self-regulation in the context of other self-regulatory successes and failures and defined 8 standards that should be met if self-regulation is to be effective.

Alarmed by links between poor diet and disease, as well as striking increases in obesity, policymakers, the public, and health professionals have challenged food industry practices.¹⁻³ Although many forces contribute to obesity and poor diet, food industry behaviors such as marketing unhealthy foods to children, promoting large portions and between-meal snacks, and exploiting schools for commercial gain have raised calls for government regulation and paved the path for actions such as requiring calorie labeling in restaurants.^{4,5}

Industry practices affecting children have raised special concern, particularly regarding food marketing.⁶ According to a recent report by the Federal Trade Commission (FTC), businesses spent \$9.6 billion marketing food and beverages in 2007. Of this, nearly \$1.7 billion was spent on marketing specifically targeted to children and adolescents, most of which promotes items such as sugared breakfast cereals, fast food, and soft drinks.⁷ The average young person views

more than 40 000 television advertisements per year. Young people are also exposed to promotional messages via the Internet, magazines, and video games.⁸ This avalanche of marketing persuades children to prefer, request, and consume calorie-dense, nutrient-poor food and has triggered urgent calls for change.⁹

In response to public outcry and calls for government intervention, the major food industry players acted as other businesses have in the past: they pledged to adopt self-regulatory initiatives. Such voluntary actions are characteristic of threatened industries and typically involve promises to follow self-generated rules and standards. There is a long history of such pledges across industries as disparate as tobacco, alcohol, motion pictures, forestry, and marine fisheries. Self-regulatory pledges by the food industry are relatively new and may, as industry claims, benefit public health, or they may be self-serving and deceptive, stall needed government action, and protect business as usual.¹⁰⁻¹⁴

The food industry is in full self-regulatory mode and since 2006 has issued a series of highly publicized pledges. Both risks and opportunities are embedded in this environment, and much is at stake. It is instructive to examine how other industries have approached self-regulation and to define the conditions under which the public's interest is protected or harmed.

Here we discuss existing self-regulatory pledges made by the food industry, note their strengths and weaknesses, and evaluate successful and unsuccessful attempts at self-regulation in other industries. We examined self-regulation in 2 industries that, like the food industry, manufacture products whose consumption is linked to health concerns (tobacco and alcohol), along with 2 quite different industries (marine fisheries and forestry), which have developed extensive self-regulatory systems and addressed governance issues, with sufficient history to draw conclusions about impact.

We propose 8 standards for self-regulation that we believe the food industry must follow if their pledges (1) are to be considered good-faith efforts, (2) hold out hope for protecting the public's health, and (3) can be considered alternatives to government regulation. These standards, listed in [Table 1](#), are derived from knowledge to date on food industry self-regulation and lessons learned from self-regulatory successes and failures in other industries. These standards are intended to maximize the likelihood that self-regulation will incorporate transparency, meaningful objectives and benchmarks, accountability and objective evaluation, and oversight.

Aim	Standard
Transparency	Transparent self-regulatory standards created by a combination of scientists (not paid by industry) and representatives of leading nongovernmental organizations, parties involved in global governance (e.g., World Health Organization, United Nations Food and Agriculture Organization), and industry.
Meaningful objectives and benchmarks	No one party given disproportionate power or voting authority. Specific codes of acceptable behaviors based on scientifically justified criteria. Predefined benchmarks to ensure the success of self-regulation.
Accountability and objective evaluation	Mandatory public reporting of adherence to codes, including progress toward achievement of full compliance with pledges and attainment of key benchmarks. Built-in and transparent procedures for outside parties to register objections to self-regulatory standards or their enforcement.

TABLE 1
Proposed Standards for Self-Regulatory Activities of the Food Industry
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HISTORY OF FOOD INDUSTRY SELF-REGULATION

To date, food industry self-regulation has comprised 4 main initiatives: 1 addresses beverages and foods in schools, 2 pertain to marketing to children, and 1 deals with menu labeling.

Beverages in Schools

In 2006, the Alliance for a Healthier Generation, a partnership between the William J. Clinton Foundation and the American Heart Association, worked with the soft drink industry through its trade association, the American Beverage Association, to release School Beverage Guidelines.¹⁵ The guidelines were developed by the alliance in collaboration with industry, most notably the top 3 players (Coca-Cola, PepsiCo, and Cadbury Schweppes) and generated considerable attention, attributable in part to former president Clinton's involvement in a press conference that introduced the guidelines.

The guidelines include industry promises to limit portion sizes of beverages and set standards for the caloric and nutritional content of beverages to be sold in schools, with greater restriction in elementary and middle schools than in high schools. The industry pledged to have the guidelines fully implemented prior to the 2009 to 2010 school year. The industry released reports on its progress in 2007 and 2008, noting, among other claims in its 2008 report, “After just two years of implementation, the guidelines have cut beverage calories shipped to schools by 58%.”¹⁵

The potential benefit of these guidelines and participation by the major players could be considerable. Coca-Cola and PepsiCo alone control three quarters of the world beverage market, so their participation in meaningful self-regulation would have enormous reach. In addition, although beverage consumption in schools is only part of overall consumption of calories from beverages, schools are important symbolically as safe or unsafe nutrition environments.¹⁶

The limitations of this pledge, however, create a strong need for our proposed standards ([Table 1](#)). The beverage industry has met 1 standard: periodic assessment to determine compliance (albeit funded by industry). The other key criteria have not been met. Most important, the process of establishing nutrition criteria was not transparent and did not involve objective input from the scientific community. An example of flawed criteria is that high schools, where much of the sugared-beverage intake occurs, are subject to far less restriction than are elementary schools, where little intake occurs.¹⁷

The pledge leaves several other concerns unaddressed: (1) predefined benchmarks (e.g., lowered sugar intake) were not established; (2) no evaluation has been undertaken by parties not funded by industry; (3) some problematic beverages are not regulated, such as calorie-dense sports drinks, diet drinks (which continue to offer branding opportunities), and new drink categories (e.g., energy drinks); (4) the long phase-in period does not require amending existing contracts; and (5) the requirement for signatory companies to follow the guidelines is not binding.¹¹ In light of these concerns, the effectiveness of beverage industry self-regulation is uncertain.

Another key consideration is whether pledges extend beyond the United States. The global health consequences of poor diet are staggering,¹⁸ so it is important that actions taken by industry apply

across the world. This is the impetus for our suggestion that world bodies such as the World Health Organization be involved with input on self-regulatory actions and oversight of compliance and impact.

Children's Food Advertising

Another major self-regulatory move by industry is the 2007 Children's Food and Beverage Advertising Initiative, sponsored by the Council of Better Business Bureaus but with guidelines established by industry. The initiative is voluntary and outlines restrictions on the advertisement of food products to children younger than 12 years, with the goal of “shifting the mix of advertising messaging to children to encourage healthier dietary choices and healthy lifestyles.”¹⁹

To date, 15 food and beverage companies have pledged to participate: Burger King, Cadbury Adams, Campbell Soup, Coca-Cola, ConAgra Foods, General Mills, Hershey, Kellogg, Kraft, Mars, McDonald's, PepsiCo, Nestlé USA, Dannon, and Unilever USA. Specific pledges vary by company; however, all signatory companies agreed to devote no less than 50% of their child-directed advertising to the promotion of “healthier dietary choices and/or to messages that encourage good nutrition or healthy lifestyles.”¹⁹ Companies also agreed to reduce or eliminate the use of third-party-licensed characters in advertising of unhealthy foods, not to seek product placement of unhealthy products, and not to use representations of unhealthy food products in interactive games targeted at children younger than 12 years. In addition, participating companies must not advertise food or beverage products in elementary schools, with the exception of “displays of food and beverage products, charitable fundraising activities, public service messaging, or items provided to school administrators.”¹⁹

The strength of the Council of Better Business Bureaus guidelines lies in their laudable stated goal and the fact that so many large companies are taking part, but many uncertainties remain. Will industry standards for healthy food be so lax as to require little change in marketing? Will industry comply? Will food companies do as the tobacco industry did and simply shift marketing dollars to other and perhaps more cost-effective means of marketing (e.g., from television to the Internet)? Will industry changes reduce overall exposure of children to marketing of calorie-dense foods? Will companies rely on 1 part of their pledge (use messages that “encourage good nutrition or healthy lifestyles”) as justification for not acting on the other part (the promotion of healthier dietary choices)? Will depicting Ronald McDonald, Captain Crunch, or the Trix Rabbit being physically active make it permissible to promote unhealthy products to children? Each of these questions can and must be answered to determine whether these pledges will be effective. It will be especially important to track how variations in pledges and compliance with pledges change with time. Will the stronger actions of the more progressive companies pressure the laggards to improve, or will a lower common denominator prevail? Monitoring compliance is essential but at present has not occurred.

Like the Alliance for a Healthier Generation beverage pledge, the Children's Food and Beverage Advertising Initiative does not meet most of the standards described in [Table 1](#). In addition to lacking transparency and objective scientific input, it provides for no benchmark to reduce children's exposure to marketing of calorie-dense foods, no mandatory public reporting, and no objective means for evaluating compliance and impact.

Character Licensing on Foods

Character licensing to promote food sales is the third arena for self-regulatory pledges. Disney²⁰ and Nickelodeon²¹ promised to discontinue the use of their names and licensed characters on packaging for foods that do not meet their self-defined criteria for healthier food. For Disney, healthier food products are those that have less than 30% of calories from fat for meals and 35% for snacks; less than 10% of calories from saturated fat for meals and snacks; and less than 10% or 25% of calories from added sugar for meals and snacks, respectively. Nickelodeon, on the other hand, only states that the use of licensed characters will be “limited to products that meet ‘better for you’ criteria”²¹ and does not detail nutritional guidelines.

Changes for both companies were slated to go into effect in January 2009, once existing licensing agreements expired. An analysis of the cross-promotion of food products in supermarkets found that although character licensing had decreased, cross-promotions in general had doubled from 2006 to 2008, so vigilance is warranted.²²

Smart Choices Food Labeling

A fourth and far-reaching effort pertains to package labeling and was announced in 2008 by the Keystone Center in collaboration with several major food companies. The Smart Choices Program involves the use of a green-and-white symbol with a check and the words “Smart Choices Program: Guiding Food Choices”.²³ The symbol is to appear on designated foods, with the aim of creating a uniform system whereby food companies can indicate foods that represent more nutritious choices. The program has 2 main features: (1) indication on the front of the package of how many servings are in the container and the number of calories per serving and (2) the application of the Smart Choices symbol to foods that meet designated criteria.

One part of the Smart Choices approach, the labeling of servings and calories on the front of packages, is likely to be uncontroversial and helpful because it is factual, requires no standards or interpretation, and can be defended as a consumer's right to know.²⁴ The utility of the Smart Choices symbol designating healthier foods will depend on the strength of the standards, how consumers use the symbols, and whether diets actually improve. Detailed analyses of the standards have not been conducted, and to our knowledge there is no plan for global reach, global oversight, or objective evaluation of impact.

Information about at least 1 food category, cereals, gives cause for concern. Consumer Reports developed its own nutrition rating system and analyzed nutrients in the 27 leading breakfast cereals. Among the findings: 23 were rated only good or fair for nutrition, 11 had as much sugar as a glazed doughnut, 11 contained at least 40% sugar, 2 were more than 50% sugar, and some were high in salt or contained no fiber.²⁵ Twenty-two of these 27 cereals qualified for the Smart Choices symbol.

These 4 self-regulatory efforts by the food industry address areas of major concern, such as marketing and labeling, and have the potential to benefit vast numbers of consumers. However, there is also a risk that the industry actions will undermine the public good if consumers are

fooled or confused, if standards are weak enough to permit harmful industry practices, and if needed government action will be stalled or prevented.

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SELF-REGULATION IN OTHER INDUSTRIES

Industry self-regulation is “a regulatory process whereby an industry-level organization sets rules and standards relating to the conduct of firms in the industry” and in which self-regulation and government regulation are not mutually exclusive but rather are part of a continuum.^{26(p364–365)}

By contrast to government-imposed laws, self-regulation is voluntary and is typically framed as a socially responsible industry practice that has consumer welfare as its central feature. A well-grounded self-regulatory system has distinct benefits: it conserves government resources and is less adversarial, more flexible, and timelier than government regulation.²⁷ Risk occurs when promises are not fulfilled because of weak standards or ineffective enforcement, allowing companies to continue to serve their own interests at the expense of consumers.

Motivation for Industry Self-Regulation

A variety of factors can motivate an industry to engage in self-regulation. The type of motivation may be a determinant of success. In some cases, an industry perceives that it must police itself because governments are involved too little, as was the case with forest and fisheries stewardship. For other industries, government intervention is perceived as a threat, and self-regulatory actions are a means to prevent or forestall outside regulation.

A catastrophic event can threaten an industry and motivate it to self-regulate. In 1984, more than 3800 people died in Bhopal, India, when toxic chemicals were released by a Union Carbide plant.²⁸ In response, the chemical industry created its Responsible Care program. Likewise, after the nuclear power accident at Three Mile Island in 1979, the US nuclear industry created the Institute of Nuclear Power Operations to set guidelines for safe nuclear power plant operations.

Scarce natural resources can also be a strong motivator for self-regulation, as in the case of the marine fishery and forestry industries. Prompted by concerns about sustainability of the global seafood market, the fishing industry founded the Marine Stewardship Council in 1997 to promote sustainable practices. Similarly, growing concerns over deforestation and the inability of governments to agree on a global forest compact led to the founding of the Forest Stewardship Council in 1993.

More pertinent to the food industry is a third source of motivation, which involves various combinations of public relations threats and concern with both litigation exposure and legislative and regulatory action that could affect sales. Industries under attack for promoting harmful, dangerous, or exploitative products or practices (e.g., tobacco, alcohol, fashion) face negative public attitudes, a skeptical press, legislators calling for action, and the threat of lawsuits. Collectively, these reflect an erosion of trust. Self-regulatory actions can be undertaken to lower the threat of negative outcomes and to build trust. Danger arises if such practices protect business interests at consumer expense and forestall needed action with the appearance of good will.

Attempts at industry self-regulation are common and widespread in industries ranging from fisheries to fashion to higher education.²⁹ Although there is much to learn from all industry self-regulation endeavors, we analyzed the successes and failures of self-regulation in the forestry, fisheries, alcohol, and tobacco industries because they presented a diverse array of regulatory experiences that could be useful in understanding and evaluating self-regulation in the food industry.

Forestry

The Forest Stewardship Council (FSC) was founded in 1993 in response to the failure of governments to agree on a global forest compact for responsible management of the world's working forests at the 1992 Earth Summit. The independent, nonprofit FSC pursues its mission of promoting responsible management of the world's working forests through the

*development of forest management standards, a voluntary certification system, and trademarks that provide recognition and value to products bearing the FSC label in the marketplace.*³⁰

Key to the FSC's structure is a tripartite governance system conferring equal authority on environmental, social, and economic stakeholders, ensuring parity in organizational decisions. To qualify for FSC certification, forest management companies must adhere to principles and criteria concerning legal rights of indigenous peoples, labor rights, and various environmental impacts related to forest management. In addition, the FSC requires certification of compliance with its standards by an FSC-certified independent third party and public reporting of evaluation reports, management plans, and results of periodic monitoring.³¹ The FSC has been successful in some regards and not in others.³²

In most countries where the FSC was established, environmental groups and ally organizations supported the program, while forest industry associations, landowners, and companies resisted, either withholding support for the FSC or creating rival certification programs.³² In response to the FSC's formation in the United States, the American Forest and Paper Association, in conjunction with industry groups, created the Sustainable Forestry Initiative, a rival self-regulatory certification program with relaxed standards and limited oversight. The majority of industry players in the United States aligned themselves with the Sustainable Forestry Initiative, likely because of its less restrictive guidelines (including first-party certification and no requirement for public reporting), leaving the FSC with modest support in the United States.

In their book *Governing Through Markets*,³² Cashore et al. argue that 3 features limited FSC adaptation in the United States: (1) the existence of a well-coordinated forestry industry trade association, (2) a production system in which forest companies owned a key share of forest lands but relied on many other organizations for supply, and (3) a high degree of vertical integration within the industry.³³ These factors parallel conditions affecting food industry self-regulation, including strong industry associations and vertical integration of businesses (e.g., Coca-Cola and PepsiCo control 75% of the world beverage market, and large agribusiness companies control products from the seed to the table). As a result of the FSC's continued competition with the Sustainable Forestry Initiative and other rival programs, some environmental groups advocate

coregulation of the forestry sector, whereby self-regulation would complement, but not replace, government regulation and legislation.³³

Much can be learned from the FSC experience. First, for self-regulation to attract industry players, companies must perceive economic benefit. This can be achieved by improving market incentives (e.g., the threat of intensified boycotts as deterrents to resisting certification and strengthened market benefits as rewards for undertaking certification).³⁴ Big-box retailers such as Home Depot and Lowe's gave preference to suppliers of FSC-certified products; market pressure (in the form of real or anticipated demand from consumers) thus supported the organization.³⁵ A parallel food strategy would be for consumers to encourage retail giants such as Walmart to favor suppliers who attain certain nutrition standards.

Second, third-party certification and oversight coupled with public reporting are essential to ensure compliance with and adequate stringency of codes. Third, self-regulatory programs must take into account rival industry programs that emerge and must ensure that rule development is flexible enough to adjust to an inhospitable regulatory environment. To facilitate this flexibility, Cashore et al. advocate the use of moderate provisional standards of regulatory criteria in the initial phases of self-regulation, followed by a ratcheting up of standards once legitimacy is achieved. Through this method, self-regulatory systems can achieve maximum stringency of rules through the use of progressive, evolutionary logic.³⁴ Finally, governance involving the most important stakeholders but not dominated by any 1 party appears to be important to achieving meaningful standards and external credibility. This is of critical importance for food, because self-regulation thus far has been dominated or entirely controlled by industry.

Fisheries

The Marine Stewardship Council (MSC) was established in 1997 as a partnership between Unilever PLC and the World Wildlife Federation (also involved with the FSC) to address the problem of overfishing and to ensure the long-term sustainability of global fish stocks.³⁶ Unlike with food industry self-regulation, the MSC functions through a balanced governance structure that includes international representatives from industry, environmental groups, and academia to ensure parity in decision making. The MSC's strength also lies in its adherence to the UN Food and Agriculture Organization standards for credible fishery certification and ecolabeling schemes. These standards include the use of objective third-party assessments based on scientific evidence, transparent processes with built-in stakeholder consultation and objection procedures, and guidelines that ensure the sustainability of target species, ecosystems, and management practices. These principles of transparency and objective evaluation have not occurred with food industry self-regulation.

Despite the balanced structure and laudable goals of the MSC, the impact of certification has been limited thus far; to date only 34 fisheries have attained full certification, with another 78 under assessment.³⁶ Unlike in forestry, where limited acceptance of the FSC was mainly the result of competing industry certification schemes, limited acceptance of the MSC program is attributable to logistic and social issues, including limited consumer interest in the sustainability of fisheries and the difficulty of monitoring quality assurance and compliance.³⁷

The MSC experience highlights 2 important issues. First, it is important to engage the appropriate link in the supply chain to gain widespread acceptance. The MSC's misstep was focusing on consumers instead of engaging retailers, who are more directly concerned with marine sustainability for their financial livelihood. In the food industry, mounting public awareness about the dangers of unhealthy food may lead to consumer demands for healthier products and at some point may drive acceptance of certification programs.

Second, the MSC case substantiates the importance of monitoring to maintain public confidence in labeling schemes. The credibility of a labeling scheme lies in the governing bodies' ability to regularly monitor existing members, thoroughly review new entrants, and strictly enforce standards.³⁷ Although monitoring marine systems presents logistical challenges (e.g., nonselective harvest techniques and the migratory nature of marine resources), credible and feasible monitoring practices to ensure adherence of member organizations are imperative. If consumers and other interested parties cannot be assured of a label's credibility, they will inevitably lose interest; on the other hand, failure to strictly enforce standards is deceptive to consumers purchasing what they believe to be socially responsible products. A food industry parallel is self-regulatory package-labeling schemes, such as Smart Choices, that designate products that are better or healthier. Consumer confidence will depend on the strength of the standards and the enforcement of their use.

Alcohol

Self-regulation of alcoholic beverage advertising is a classic example of an industry using voluntary codes in conjunction with government oversight to deflect government regulation. Although self-regulatory guidelines were developed originally by industry players, the FTC has been involved both formally and informally in the supervision of alcohol industry self-regulation. As part of its involvement, the FTC helps ensure that companies abide by codes, assists members on compliance issues, ensures rule enforcement, and suggests improvements. The FTC oversight system is efficient in that it allows industry to regulate itself through internal or third-party review boards. The board of the Distilled Spirits Council of the United States is internal, with a third-party board to break tie votes; the Wine Institute and the Beer Institute function exclusively through third-party review boards but hold members accountable via FTC oversight and audits.

As with forestry self-regulation, alcohol advertising standards are adaptable and flexible, allowing for more restrictive guidelines as knowledge about success and acceptance evolves. In response to a 1999 FTC report criticizing the industry's self-regulatory practices as too permissive, the 3 largest alcohol supplier trade associations—the Distilled Spirits Council, the Wine Institute, and the Beer Institute—pledged to adopt revised self-regulatory guidelines for advertising and marketing. The new codes regulated the content and placement of advertisements and marketing efforts, requiring that each advertisement be targeted to an audience in which at least 70% of viewers were of legal drinking age. Previous guidelines required only 50% of an advertisement's intended audience to be of legal drinking age.

In 2008 the FTC recommended further improvements to the codes, including new regulations for Internet and other digital advertising, sponsorships, product placement in films, expenditures to

help others promote alcohol, external review of complaints, and youth access to alcohol, as well as a new system for monitoring that involves random, compulsory audits of member companies each year by the FTC.²⁷ There are, however, lingering concerns over enforcement of the Distilled Spirit Council's self-regulatory practices. Public watchdog groups have cited, among other concerns, a high degree of subjectivity in interpreting advertising content regulations and the lack of an independent third-party review board.³⁸ These issues demonstrate the power of industry to exert influence, even when government oversight exists, and underscore the importance of consistent monitoring and evaluation.

Tobacco

An example of toxic self-regulation is the tobacco industry's behavior, beginning with the 1954 "Frank Statement to Cigarette Smokers" published in 448 US newspapers. Over the signatures of the nation's top tobacco executives, Americans were assured, "We accept an interest in people's health as a basic responsibility, paramount to every other consideration in our business" and "We always have and always will cooperate closely with those whose task it is to safeguard the public's health."³⁹ A series of promises were made and broken, and the industry created the infamous Tobacco Institute, which for years worked hand-in-glove with tobacco companies to protect and defend practices that had catastrophic public health consequences.⁴⁰

The tobacco industry's development of youth smoking prevention campaigns is arguably 1 of the most extreme examples of an industry abusing self-regulation to deflect legislative action. In response to public and government outcries over marketing to youths, the industry developed several youth smoking prevention programs in the early 1980s.⁴¹ These included youth access initiatives (e.g., the Coalition for Responsible Tobacco Retailing's We Care, the Tobacco Institute's It's the Law, and Philip Morris's Action Against Access), sponsored educational programs (e.g., the Tobacco Institute's COURSE Consortium and RJ Reynolds's Right Decisions Right Now), youth program partnerships (e.g., with the US Junior Chamber of Commerce and the National 4-H Council), and media campaigns (e.g., Philip Morris's Think. Don't Smoke.).

Analysis of publicly available tobacco industry documents indicates that industry executives used these programs to prevent and defend against government regulation that might lower company profits. Moreover, industry players were careful to design youth prevention programs that did not contradict existing tobacco advertising initiatives; not a single program included information on nicotine and addiction, the causal link between smoking and disease, or the large role of tobacco marketing in promoting smoking to youths.⁴¹ Some evidence suggests that these programs actually encouraged young people to smoke more.⁴² Tobacco industry programs also marginalized public health advocacy groups by creating competition with more reputable antismoking campaigns, such as the Truth campaign sponsored by the American Legacy Foundation.⁴³ Public health advocates have found no evidence that tobacco industry programs decrease the rate of youth smoking and have concluded that they do more harm than good.^{41,42}

The tobacco industry's self-regulatory tactics illustrate the central danger of self-regulation: an industry can use programs and approaches that appear credible and are framed as in the public's interest but prevent legislation or regulation and damage public health. Some food industry

behaviors are strikingly similar to those of the tobacco industry; it is essential that tobacco's history with self-regulation not be repeated.⁴⁰

Lessons Learned From Self-Regulation History

The history of food industry self-regulation is being written now. Much can be gained by reviewing the history of self-regulation in other industries to help avoid pitfalls and adopt practices that maximize chances for success. These accounts reveal critical factors that bear on such questions as whether industry can be trusted, whether regulatory control should be ceded to industry, how criteria for evaluating self-regulation might be established, and what the overall goals might be.

An important factor is motivation for change. Industries protecting a dwindling resource face the internal threat of overuse and exploitation of the environment. They have incentives to regulate effectively and can behave in ways that benefit the public (e.g., reducing deforestation protects the environment). Governance, implementation, and basic strategy all present challenges, but the potential for good is considerable. Thus far, self-regulation by the food industry has not been motivated by concerns about dwindling resources, but it should be. Depleted and contaminated water resources, land loss, shrinking biodiversity, and the energy intensity of modern agriculture are serious problems that threaten basic business models and are likely to burst into public consciousness in ways that will pressure companies into selling products grown and raised, processed, and transported in sustainable ways.⁴⁴

As with the tobacco and alcohol industries, food industry self-regulation appears to be motivated more by external threats: negative public attitudes, government action that restricts key business practices, and litigation. Where industry and public health objectives conflict, an industry has incentives to create a public image of concern and to promise change, but then to create weak standards with lax enforcement. The cynical practices of the tobacco industry, and to a lesser extent the alcohol industry, have shown how under the guise of self-regulation, public health problems can be increased (e.g., young people being encouraged to smoke more rather than less) and government action can be warded off.

Governance by all stakeholders, transparency in creating standards, and external, objective evaluation of impact appear to be at the heart of the self-regulatory successes seen in some industries. These conditions do not prevail in current food industry self-regulation. Such regulation could still be beneficial, but legitimate public health input in the planning and execution of regulations and ongoing objective evaluation are both crucial.

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STANDARDS FOR SUCCESSFUL FOOD INDUSTRY SELF-REGULATION

Self-regulatory successes and failures across a variety of industries, current conditions facing the food industry, and self-regulation by the food industry thus far informed the development of the

8 standards we propose ([Table 1](#)). Our aim was to create guidelines that are attainable, take into account industry needs, and protect the public's health. These goals cannot be realized without transparency, meaningful objectives and benchmarks, accountability and objective evaluation, and oversight.

We do not yet know whether food industry self-regulation will be helpful or harmful, but allowing an industry to self-regulate without input from government, consumers, or public health advocates can have serious consequences. Self-regulation can become a public health failure when (1) leading companies fail to take part, (2) weak standards permit harmful practices,¹² (3) standards do not apply globally, (4) credibility is undermined by an absence of transparency and objective scientific input, and (4) a lack of benchmarks and objective evaluation leads to ambiguity in interpreting both compliance and impact. Weakness in any area can compromise impact, as with industry's Children's Advertising Review Unit, where even strong enforcement of weak standards has led to weak results.¹³

Successful self-regulation requires standards that industry can attain to earn the trust of the public, the public health community, and government. These conditions should create a floor for self-regulatory standards—conditions to be satisfied as the minimum. Attaining the standards shown in [Table 1](#) would help the food industry earn trust for its self-regulatory efforts, but pitfalls must be avoided. Internal pressure to weaken standards, refuse to participate, or create rival guidelines and codes could sabotage these programs.

Encouraging all players to take part in constructive ways will require clear definition of the roles of public interest and industry watchdog groups, consumers, government, industry, and the scientific community. It may also be helpful to mobilize consumers, who can help generate market pressures by favoring companies that meet self-regulatory standards. Finally, to entice industry players, self-regulatory codes must be initiated with moderate, manageable requirements. Then, as proposed with forestry and fisheries self-regulation, regulations can be strengthened as acceptance and legitimacy of the program increase.

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Acknowledgments

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Human Participant Protection

No protocol approval was required because no human participants were involved.

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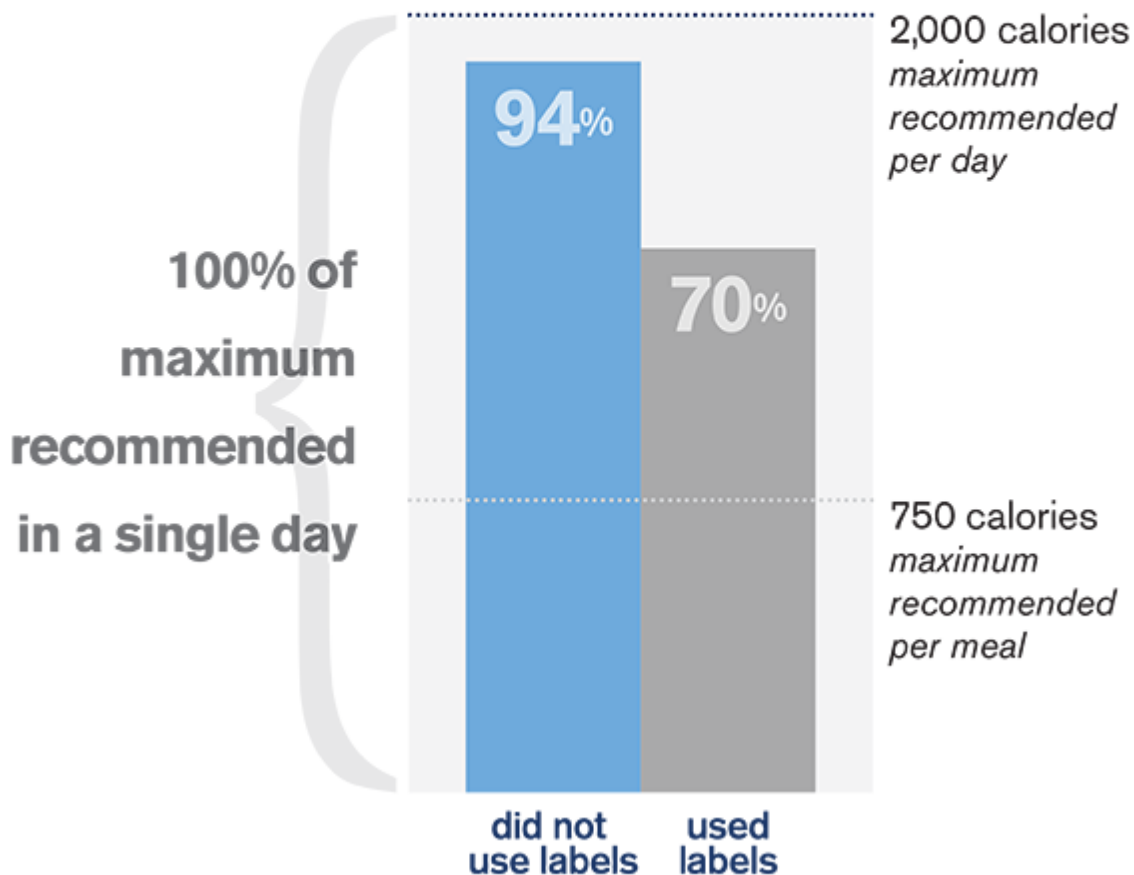
Article 2 – available at: <http://drexel.edu/now/archive/2013/November/Restaurant-Menu-Labeling/>

**CONSUMERS ORDER A
LESS UNHEALTHY
MEAL WHEN THE**

MENU HAS NUTRITIONAL LABELING

November 18, 2013

Calories Purchased for a Single Meal



For a single meal, restaurant consumers purchased almost as many calories as needed in an entire day - but they purchased fewer calories when they used nutritional labels on the menu.

An evaluation team led by the Drexel University School of Public Health has published a new study demonstrating that customers of full-service restaurants use nutritional labeling on menus to make healthier food choices.

“This is the first field-based study of mandatory menu labeling laws that found a large overall adjusted difference in calories between customers who dined at labeled restaurants when compared to unlabeled restaurants -- about 155 fewer calories

purchased,” said **Amy Auchincloss, PhD**, an assistant professor in the [Drexel University School of Public Health](#) and lead author of the study.

Overall, customers at restaurants with menu labels purchased food with 151 fewer calories (155 fewer calories when counting beverages), 224 milligrams less sodium and 3.7 grams less saturated fat compared to customers at restaurants without menu labels.

Almost 80 percent of customers at labeled restaurants reported seeing labels, and 26 percent of all customers reported using them when deciding what to order. The customers who reported they used labels purchased 400 fewer calories (representing a relative difference of 20 percent), 370 milligrams less sodium and 10 grams less saturated fat than the overall average.

Nevertheless, even consumers who used the labels purchased oversized meals that, on average, far exceeded what could be considered “healthy” – highlighting the difficulty for consumers when dining out. The authors argue for a need to do more to help consumers to eat sensibly and to encourage portion control, among other findings [published online today ahead of print in the December issue of the *American Journal of Preventive Medicine*](#).

Americans currently purchase at least a third of the calories they consume on food prepared away from home – so providing detailed nutritional information on menus and on packaged foods is a commonly touted tactic to educate consumers and encourage them to make healthier choices.

“While previous studies have shown mixed impacts of menu labeling in fast food settings, this study suggests that nutrition information may be particularly useful in full-service restaurants,” said **Donald F. Schwarz, MD**, health commissioner for the City of Philadelphia and a co-author of the study.

[Philadelphia’s menu labeling law](#) requires full-service chain restaurants with more than 15 locations nationwide to list values for calories, sodium, fat and carbohydrates for each item on all printed menus. Fast food restaurants must list calories on their menu boards and make the other nutrition information available upon request. Philadelphia’s law is unique in requiring more than just calories on menus. The enactment of this law

in 2010 created the opportunity to observe whether menu labeling affects what consumers purchase – by comparing what happens at multiple locations of a single full-service chain restaurant, within and outside of city limits.

Menu labeling will expand nationwide when the Patient Protection and Affordable Care Act is fully implemented; at that time, all fast-food and full-service restaurant chains with more than 20 locations will be required to provide nutrition information at the point of purchase.

In this study, Auchincloss and colleagues from Drexel, the Philadelphia Department of Public Health and University of Pennsylvania, assessed whether food purchases at full-service restaurants varied depending on the presence of labeling. They collected 648 customer surveys and transaction receipts at seven restaurant outlets of one large full-service restaurant chain. Two outlets had menu labeling, while five outlets did not. The authors looked at differences in calories and nutrients purchased between those who dined at outlets with menu labeling and those who did not, and at customers' reported use of nutritional information when ordering.

On average, customers purchased food that had approximately 1,600 food calories (kcal) – a total that rose to 1,800 calories when also counting beverages. Most people need only 2,000 calories for an entire day, so a single meal approximated a full day's worth of calories. Purchased meals had an average sodium content of 3,200 milligrams, with an average of 35 grams of saturated fat. These numbers far exceed recommended limits for an entire day. For most people, recommended daily limits are 2,300 milligrams sodium and 20 grams of saturated fat.

“When you compare the average intake with the recommended daily intake, these consumers purchased almost all their calories, and more than the recommended sodium and saturated fat in just one meal,” said **Beth Leonberg**, an assistant clinical professor and director of the didactic program in dietetics in Drexel's **College of Nursing and Health Professions**, who co-authored the study. “In order to not exceed recommended intakes for the day, most adults should consume fewer than 750 calories, 750 milligrams of sodium and 8 grams of saturated fat in a single meal.”

The authors concluded that current efforts don't go far enough to help consumers to eat sensibly and to encourage portion control. Educating consumers about menu labeling may further increase the small observed impact on healthier consumer choices.

“We also need to pursue approaches that make the healthy choice the default,” said **Giridhar Mallya, MD**, director of policy and planning for the Philadelphia Department of Public Health and a co-author of the study. “This might include product reformulation, promoting healthier options on menus, and offering smaller portion sizes.”

ADDITIONAL INFORMATION AND RESOURCES

Other co-authors with Auchincloss, Schwarz, Leonberg and Mallya include Karen Glanz, PhD of the University of Pennsylvania and Andrew Ricchezza, who at the time of the study was a master's student at the Drexel School of Public Health.

Related studies by this evaluation team addressed the nutritional value of foods listed on menus at full-service restaurant chains with and without mandatory labeling laws (paper in press) and customer knowledge, attitudes and behaviors regarding menu labeling and their use (published in *Public Health Nutrition* in 2013: <http://dx.doi.org/10.1017/S1368980013000104>). Abstracts for all of these related studies are available at <http://drexel.lu/16GLGRo>.

The team and additional collaborators from Drexel and the Philadelphia Department of Public Health have prepared an executive summary of the set of studies with recommendations for the restaurant industry. This PDF document is available at <http://drexel.lu/1dOexFa>

Auchincloss and Leonberg address many common questions about this study on the Drexel News Blog, such as comparing these findings to past studies of fast-food restaurants, what can be done to make restaurant meals healthier and what consumers

should know to eat well while dining out. These comments are available at <http://drexel.lu/HZkoN4>.

The paper in the *American Journal of Preventive Medicine* is available at <http://dx.doi.org/10.1016/j.amepre.2013.07.014>.

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Members of the news media: To interview co-authors from the Philadelphia Department of Public Health, contact Terry Johnson, Get Healthy Philly Communications, Philadelphia Department of Public Health at 215-686-5232 (office), 267-210-1566 (cell), Terry.Johnson@phila.gov

- See more at: <http://drexel.edu/now/archive/2013/November/Restaurant-Menu-Labeling/#sthash.ASD3SrcB.dpuf>

Article 3 available at: http://www.ers.usda.gov/media/91084/aib750q_1.pdf

Chapter 17

How Government Policies and Regulations Can Affect Dietary Choices

Katherine Ralston

Regulations, regardless of whether or not they are directed specifically at the food sector, can affect the varieties and qualities of foods available for purchase, the prices consumers face, the information consumers receive about a product, and consumer confidence in the food supply. This chapter reviews four important categories of policies and regulations: farm assistance programs, food safety regulations, information regulations, and regulations covering other sectors and their potential impacts on consumer dietary choices.

Introduction

Policies and regulations that directly or indirectly affect the supply or prices of food products, their safety and nutritional composition, or the information consumers receive about food all influence the food choices consumers make and, ultimately, the nutritional quality of

their diets. The effect of policies and regulations on ultimate dietary choices depends on how the policy affects the cost of producing commodities, how those costs relate to final retail prices, how responsive consumers are to price changes, and how the policy directly influences the consumers' preference for the product. This chapter reviews four important categories of policies and regulations that affect the food sector, and discusses their potential effects on consumer dietary choices (table 1, p. 358). While there are no comprehensive studies on the quantitative effects of these regulations, several examples in each category illustrate the types and magnitudes of these effects. The first category, farm assistance programs, includes Federal price and income support programs as well as producer-funded marketing orders and research and promotion agreements. The price and income support programs have historically affected the marketed supply of many foods, although many provisions were suspended in 1996. Some marketing orders set quality standards for marketed supplies of foods, and promotion programs attempt to influence demand for commodities through generic advertising (see also chapter 10). The second category, food safety regulations, includes inspections of processing plants and food products, approval of food additives, and restrictions on pesticide use and animal drugs. These regulations can affect food prices or availability, and their implied assurance of safety is information that can also affect demand for the food. The third category, information regulations, includes labeling requirements and advertising restrictions, standards of identity, and product grades. These directly influence the kind of information consumers receive about foods, and therefore affect their demand for foods. The fourth category, regulations covering sectors other than agriculture, includes environmental requirements and worker safety, restrictions on mergers, and trade policies. These regulations also may affect the price and/or availability of specific food products. Most of these policies have little real effects on dietary choices overall, partly because consumer responsiveness to resulting price changes is low. Yet the regulations have been shown to affect some individual foods or population groups, significantly in some cases. Keep in mind that increased consumption of a particular food may or may not be nutritionally desirable, depending on its own nutritional qualities, its substitution effects, and any increase in complementary foods. For example, lower prices of ground beef may increase consumption of hamburgers as well as other complementary foods, such as buns, ketchup, and potato chips (see chapter 8). Many other government regulations and programs not covered in this chapter also affect food choices. In addition to the food assistance programs described in chapter 16, changes in welfare assistance regulations can increase or decrease household income and thereby affect consumer food choices. The types and amounts of government-funded research can also affect dietary choices by determining the areas of interest and the focus of research. For example, research conduct-

ed by the U.S. Department of Agriculture (USDA) Agricultural Research Service led to the development of Oatrim, a fat substitute made from processed oat fiber that has the additional benefit of lowering blood cholesterol levels. Oatrim has the potential to provide consumers with tasty lower fat products and a wider range of choices.

Farm Assistance Programs

Federal and State price support programs for wheat, rice, feed grains, oilseeds, milk, peanuts, and sugar are intended to stabilize and/or support prices and, in some cases, producer incomes for these commodities. In addition, producers of milk, fruits, vegetables, and specialty crops are permitted to organize marketing orders to facilitate orderly marketing. Finally, several commodities are also covered by federally authorized research and promotion agreements.

Federal Price and Income Support Programs

Introduced with the Agricultural Adjustment Act of 1938, partly in response to the Great Depression, price and income support programs have been modified several times. Programs have combined several forms of assistance, including deficiency payments to cover the gap between target prices and market prices, (nonrecourse) loans to farmers that could be defaulted if prices fell below a specified level, government purchases of surplus production to support prices, short- and long-term programs paying farmers to idle certain land from production at a targeted level and limiting acreage planted to certain crops (the Acreage Reduction Programs and the Conservation Reserve Program), export subsidies, and import restrictions. Many of these provisions were eliminated or suspended with the 1996 Farm Bill. While some of the programs did raise farm commodity prices, consumer dietary choices were affected very little. Farm prices are a fraction of final retail prices, and consumer responsiveness to price changes for most foods is low. For example, the peanut program was estimated to increase peanut prices to 27 percent above the breakeven price (Sanford and Evans, 1995). However, the farm price of peanuts represents only about a quarter of the final retail price of peanut butter (Elitzak, 1997). Thus, even if the whole price increase had been passed on to consumers, the price of peanut butter would have risen only about 7 percent ($0.27 \times 0.25 = 0.07$). Because consumers are not very responsive to the price of peanut butter, the actual effect on peanut butter purchases would have been much lower than this percentage. The price elasticity of demand (percentage change in demand resulting from a 1-percent change in price) for nuts (peanuts and tree nuts together) is only -0.16 (Huang, 1993). If consumers have the same price response to changes in the price of peanut butter,² then a 7-percent increase in the price of peanut butter would result in a 1.1-percent decline in the quantity of peanut butter purchased ($7 \times -0.16 = -1.12$). Researchers have also found that price impacts of the sugar and wheat programs on consumption are 1 percent or less for sugar (Uri and Boyd, 1994) and for wheat (Hoffman and

others, 1995).

Similarly, the feed grain program raised feed costs for meat, milk, and egg producers, but the effects on consumption of the final products were probably very minor. Price elasticities of demand for milk and eggs are low (-0.04 for fluid milk, -0.11 for eggs) (Huang, 1993). Even consumption of beef, which is more sensitive to price changes (price elasticity of demand = -0.62), probably was not greatly affected, because feed grain costs are a fraction of the costs of producing beef, and the farm price is only about half of the final retail price. Further, the increase in feed grain costs would have increased costs for pork and poultry as well; the price elasticity of demand for all these meats together is even lower than for beef.

Consumer prices for fluid milk were higher than they would have been without milk price supports before phaseout of supports began in 1996. Because consumer response to price changes is low, however, supports probably reduced consumption less than 1 percent (Blayney and others, 1995). Milk and milk products, such as cheese and butter, are also affected by Federal milk marketing orders, which are under reform as part of the 1996 Farm Bill but still in operation. Federal milk marketing orders establish regional price differentials for different classes of fluid grade milk in different regions of the country (Manchester and others, 1994).

The milk marketing order system historically resulted in below-market prices for most manufactured dairy products (Blayney and others

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² The nuts category in Huang's estimated demand system is dominated by peanut butter, so this price elasticity is an acceptable approximation of the elasticity of demand for peanut butter.

1995), which could continue under current reforms. Below-market prices for manufactured dairy products can occur when the pricing structure creates an incentive to produce a surplus of milk above fluid demand; the excess milk is then available for use in the manufacture of dairy products, resulting in greater supply and lower market-clearing prices for these products.

Because some manufactured dairy products, such as cheese, are high in saturated fat, some nutritionists have expressed concern that lower prices for cheese may lead to higher cheese consumption, contributing to increased saturated fat in the diet (Sims, 1998). However, while consumers respond more strongly to the price of cheese (elasticity = -0.25) than to the price of fluid milk (elasticity = -0.04) (Huang, 1993), the response to the cheese price is still low. Taking into account the full complementarity among foods, the net effect of a 10-percent reduction in the price of cheese is only a 0.74-percent increase in saturated fat intake, equivalent to 0.37 gram of saturated fat per capita daily (Huang, 1997).

While commodity programs have had minimal effects on dietary choices of the population as a whole, the distribution to low-income individuals of surplus commodities that result from some of these programs has been shown to have an important impact on dietary choices for that group. For example, in the 1980.s, the dairy support program resulted in a buildup of surplus cheese; the surplus was donated directly to low-income individuals under The Emergency

Food Assistance Program (TEFAP), roughly doubling the consumption of cheese for this group (Zellner and Morrison, 1988). While cheese is the most extreme example, consumption of other commodities has been affected in some years by surplus distribution programs.

For example, USDA purchases of surplus peanut butter for TEFAP accounted for 6.5 percent of U.S. retail volume of peanut butter in 1992/93;³ this was nearly half as large as the largest percentage of cheese marketings accounted for by USDA purchases, 15 percent in 1983 (Blayney and others, 1995). Thus, while data on the number of recipients and their usual peanut butter consumption are not avail-

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³ Government purchase data from USDA's National Agricultural Statistics Service (NASS), various issues. Breakdown of peanut butter purchases by program provided by Bonnie Taylor, USDA's Food and Nutrition Service. Data on total U.S. consumption of peanut butter from Sanford and Evans, 1995.

able, this volume of peanut butter could have significantly increased peanut butter consumption for low-income consumers that year.

The 1996 Farm Bill eliminated or began to phase out many program components, continuing the reduction in the Government's influence in the agricultural sector through traditional commodity programs (Young and Shields, 1996; Young and Westcott, 1996). The 1996 Farm Bill suspended price-dependent income support payments for wheat, rice, and feed grains, and limited price supports for these crops as well as for sugar and peanuts. Dairy price support levels were cut back and will be eliminated in 2000, while Federal milk marketing orders are to be reformed by consolidating the number of orders and by considering changes in how classified prices in the new orders are to be determined. The short-term Acreage Reduction Programs were eliminated, while the longer term Conservation Reserve Program was reoriented to provide additional environmental benefits. The changes in the Conservation Reserve Program continue the expansion of priorities from erosion to include improvements in wildlife habitat and air quality.

Just as these programs have had minor effects on consumer choices, the 1996 changes are believed to have had very small impacts on dietary choices because retail prices for food are only marginally different (Young and Westcott, 1996). While retrospective studies are not yet available, prices were projected to be about 1 percent lower on average for dairy products and slightly lower for peanuts. Prices were projected to be slightly higher for rice due to the elimination of deficiency payments, which created an incentive to overproduce without corresponding supply control. Prices of foods based on grains, including meats, as well as cereals and bakery goods, were projected to be unchanged. Overall livestock feed costs were projected to be similar to those under previous legislation, although the mix among feed grains and forage may be different. While wheat prices were projected to drop, ingredients are a fraction of cereals, and bakery goods, retail cost. Availability of fruits and vegetables is not affected by these changes because payments are reduced for fruits and vegetables planted in excess of their historical plantings on farms with a production flexibility contract. Programs distributing commodities to low-income households, however, will probably be greatly

affected with the reduction in price support purchases of surplus commodities. Expenditures in 1996 for the TEFAP, for example, 336 • USDA/ERS AIB-750 • Gov't Regulations and Food Choices were 50 percent lower than in 1995 (USDA, Food and Consumer Services, 1996).

Marketing Orders for Fruits, Vegetables, and Specialty Crops

Federal marketing orders for fruits, vegetables, and specialty crops are self-help commodity programs proposed, governed, and financed by commodity industries and authorized by Federal legislation (Neff and Plato, 1995). In contrast to Federal marketing orders for milk, marketing orders for fruits, vegetables, and specialty crops operate with no direct price controls and limited quantity control. Fruit, vegetable, or specialty crop marketing orders may limit the total marketed quantity, the flow among market segments, or the flow over time to stabilize or increase prices. They may also set quality standards and container/pack standards to increase demand through quality assurance and/or to restrict supply. They currently include oranges, grapefruit, tangelos, limes, avocados, nectarines, peaches, kiwifruit, apricots, cherries, fresh and dried prunes, grapes, pears, papayas, cranberries, olives, potatoes, onions, tomatoes, melons, almonds, hazelnuts, walnuts, spearmint oil, dates, and raisins. Additional commodities are covered by State marketing orders.

Direct quantity control provisions are used in only a few marketing orders for specialty crops such as certain nuts, specific berries and dried fruits, and spearmint oil with minimal impact on dietary choices. The strongest supply control tools available in marketing orders are producer allotments and reserve pools. Producer allotments assign a maximum quantity a handler can market from each producer in a single season. The total quantity allowed can increase based on increased demand, but prices are maintained by the control of supply in each season. These provisions are authorized only for cranberries and spearmint oil.

Reserve pools withhold marketable supply if total supply exceeds estimated market demand at a given price. The surplus can be released later or diverted for sale in a secondary food market (such as frozen or processed) or for nonfood use. Reserve pools are allowed only for California walnuts, Far West spearmint oil⁴, California raisins, and California dried prunes. Market allocations, used in four marketing

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⁴ The Far West spearmint oil order covers Washington State, Idaho, Oregon, Nevada north of 37th parallel, and Utah west of the 111th meridian.

orders (California almonds, Oregon-Washington hazelnuts, California walnuts, and California prunes), specify the maximum quantity that can be sold for a given use, thus increasing revenues by limiting the supply of product going to the market segment that is less responsive to price. Markets can be separated into fresh and processed or domestic and export, for example.

Minimum quality standards are part of almost all marketing orders, and may limit the marketed supply of some commodities.

Consumers willing to purchase lower quality produce at lower prices

may be priced out of the market by quality controls. This could be especially relevant to the dietary guidelines because fruits and vegetables are an important component of the guidelines, and because consumers are more responsive to the prices of fruits and vegetables than to other food groups. However, minimum quality standards also appear to have increased demand by standardizing quality at a high level (Neff and Plato, 1995).

National Research and Promotion Programs

Many marketing orders authorize research and promotion programs, and some such programs operate outside of marketing orders.

Assessments on producers, processors, and often growers and handlers, fund research to improve grower/handler efficiency and consumer research for use in marketing and generic advertising.

National research and promotion programs are authorized for beef, dairy, eggs, honey, mushrooms, popcorn, pork, potatoes, soybeans, watermelons, and wheat. Many other commodities are covered by State programs.

Recent research on the effects of beef advertising are mixed. Some researchers have found no impact from generic beef advertising, but positive effects from branded advertising (Brester and Schroeder, 1995). Ward and Moon (1997), on the other hand, found that generic advertising may have increased beef consumption by as much as 8 percent. Studies have suggested strong effects of generic advertising on demand for Washington apples (14.5-percent increase) and catfish (13 percent), and lower effects for orange juice (2.7 percent) (Forker and Ward, 1993). Even when effects on individual commodities are large, the effect on diet quality is less clear. Increased consumption of one commodity may displace another commodity in the same group. The effects of dairy promotion are discussed in chapter 10.

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Food Safety Regulations

Programs to ensure consumer safety include food safety inspections, pesticide use and residue restrictions, animal drug approval, and food additive approval. Since the relative safety of a food may be unobservable to consumers, they are unable to give producers sufficient incentive to spend money providing these qualities. Food providers who invest more in technology that enhances food safety may have higher costs of production and be unable to increase prices or use increased safety as a selling point because consumers cannot verify that the food is safer. Thus, producers who provide safer goods are sometimes penalized. Further, when the risk of foodborne pathogens or other hazards undermines confidence in the food supply, the economic harm is not limited to providers of unsafe food but extends to all food providers. Regulations that ensure an acceptable level of safety reassure consumers and level the playing field for producers.

Food safety regulations could have two possible effects on dietary choices. On the one hand, the cost of meeting higher standards could either increase prices or reduce availability of certain foods, thus

decreasing consumption of those foods. On the other hand, ensuring the safety of the food supply probably increases demand for many foods that consumers might otherwise avoid due to health concerns. When a well-publicized outbreak of foodborne illness occurs, consumer confidence in the safety of the food product can temporarily deteriorate, leading to a drop in sales. For example, the outbreak of *E. coli* O157:H7 resulting from undercooked fast-food hamburgers in Washington State caused a decline in demand for hamburgers from that chain (Knutson and others, 1995), although sales have steadily recovered (Foodmaker, Inc., 1998). Similarly, demand for strawberries and raspberries reportedly dropped temporarily after the outbreaks of Hepatitis-A linked to strawberries in 1997 and *Cyclospora* linked to raspberries in 1996 (Zepp and others, 1998).

Consumer confidence in the safety of the food supply can also be undermined by concerns over health effects of pesticide residues. In contrast to the more isolated nature of concerns about foodborne pathogens, concerns about pesticides may be ongoing and have a spillover effect on other fruits and vegetables. For example, 8 percent of California consumers reported reducing their consumption of fruits and vegetables in response to pesticide concerns (Bruhn and others, 1992).

Consumers' reactions to food safety problems may also provide evidence of their overall confidence in the food supply. Consumers avoided hamburgers only from the fast-food chain linked to the 1993 *E. coli* outbreak, not all fast-food hamburgers. Similarly, consumers did not avoid all fruit following the Hepatitis-A and *Cyclospora* outbreaks. Concerns over pesticide residues appear to influence the dietary choices of a limited minority of consumers. This suggests that most consumers trust that the problems are isolated and their resolution assured.

Food Inspections

Most foods crossing State lines or imported from foreign countries are sampled for inspection by the U.S. Department of Health and Human Services. (DHHS) Food and Drug Administration (FDA), except for meat, poultry, and liquid egg products, which are inspected by USDA's Food Safety and Inspection Service (FSIS), and shell eggs, inspected by USDA's Agricultural Marketing Service (AMS).⁵ Retail establishments, restaurants, and food produced for in-state sale are inspected by State and local authorities, under nonbinding guidance from the FDA Food Code (U.S. General Accounting Office (GAO), 1990). Meat products inspected locally are required to meet standards at least equal to Federal standards, and local systems are monitored by FSIS. These agencies also regulate technologies used to ensure food safety.

FDA inspections. The Food and Drug Administration monitors the safety of foods in its jurisdiction by conducting inspections of products as well as processing facilities (Zepp and others, 1998). FDA conducts research on contamination detection and prevention practices and sets standards for enforcing Federal regulations and guidelines on food sanitation and safety. It also monitors the safety of the

food system by inspecting manufacturing plants and feed mills producing medicated or nutritionally supplemented animal feeds that are part of the human food chain. FDA also has responsibility for ensuring the safety of imported fruits and vegetables. By law, imported products must meet the same standards as domestic goods. The bulk

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5 FSIS inspects products containing over 3 percent fresh meat or 2 percent or more cooked poultry. Liquid egg products inspected by FSIS are sold in liquid form, frozen, or as dried egg products.

of FDA-regulated imports are cleared for immediate distribution based on the Agency's review of the shipment's records; these records include information on safety assurance practices maintained during processing of the food being shipped. If a problem is suspected, inspectors then physically examine the shipment or take a sample for laboratory analysis. Imports from a particular processor or an entire country can be detained or blocked until the problem is resolved.

In a recent case, imports of raspberries from Guatemala were blocked from March 1998 through August 1998 following the 1997 outbreaks of *Cyclospora* linked to the raspberries (DHHS, 1998). Because the organism is difficult to detect, the safety of incoming raspberry shipments could not be verified by testing. Thus, imports were blocked until the source of contamination could be identified and eliminated. Such actions could well affect the availability of some fruits and vegetables, yet are essential to maintain confidence in the food supply.

Foodborne disease outbreaks have been linked to both domestic and imported produce. Four of the 13 foodborne disease outbreaks linked to produce during 1990-96 were from imported produce, although the outbreaks from imported produce accounted for about two-thirds of the resulting illnesses (Tauxe, 1997). While the evidence on the risks of imported produce is limited, without strict enforcement of safety standards, imported produce could develop a bad reputation. This could have important effects on dietary choices, especially since imports account for an increasing share of all fresh fruit and vegetable consumption (Zepp and others, 1998).

FSIS inspections. FSIS monitoring covers all aspects of slaughter and processing for meat and poultry. Under the Federal-State cooperative inspection program, FSIS monitors State inspection systems for products that do not cross State lines. In about half of all States, FSIS conducts direct inspection because the State has chosen to end its inspection program or cannot maintain FSIS standards (GAO, 1990).

FSIS issued new regulations for meat inspection in 1996, requiring all federally inspected meat processing establishments to document standard operating procedures for sanitation and implement a food safety management system called Hazard Analysis and Critical Control Points (HACCP). This system requires identification and monitoring of critical control points in the process to ensure that

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pathogens are not introduced into the process and to destroy or prevent the growth of pathogens that may be present. The regulations require the establishment to test for generic *E. coli* as an indicator of

fecal contamination.⁶ The regulations also require FSIS to test for *Salmonella*, and require that the plant not exceed a legal tolerance for presence of *Salmonella*. The new requirements do not replace, but rather supplement, the previously established organoleptic inspection system in which inspectors examine animals and carcasses for symptoms of disease and other abnormal conditions by requiring additional microbiological testing and improved records of the plants' own food safety system (Crutchfield and others, 1997). These regulations can have several effects on food choices. The new standards themselves impose costs on meat suppliers, and thus may add to the cost of the product. The minimum cost of just the new regulations themselves—developing new sanitation plans and HACCP plans, training costs, labor costs for monitoring the new systems, and *E. coli* testing—is projected to be 0.006 to 0.12 cent per pound of meat and poultry (Crutchfield and others, 1997). Any additional equipment or labor required to meet the microbial standards would add further costs. Costs per unit are expected to be at the higher end of the projected range for small-scale producers because those producers have higher fixed costs relative to their overall costs. Thus, the regulations could influence the variety of meat products available if small-scale producers are unable to comply with the regulations profitably. Small firms were not exempted from the new regulations, although they were given longer to comply.

Food Safety Technology Approval

The Federal Government also approves technologies for use in food safety assurance. For example, FDA approved the use of irradiation to rid fruits, vegetables, beef, poultry, grains, and spices of pathogens. FSIS developed regulations for the use of irradiation on poultry and beef. FSIS also certified a steam pasteurization technology.

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⁶ Generic *E. coli* are bacteria present in large amounts in the gut and fecal material of the slaughtered animal. Generic *E. coli* should not be confused with certain types of *E. coli*, such as *E. coli* O157:H7, which are very pathogenic at very low levels. Because it is so abundant in fecal material, generic *E. coli* is relatively easy to detect if there has been fecal contamination of meat that could also transmit harmful bacteria more difficult to detect.

As a result, the technology significantly reduces pathogens that may be present on animal carcasses after slaughter. The regulation of these approvals and certifications provides assurance to both food suppliers using the technology and end-use consumers that the technology is safe and effective. More recently, however, FSIS has dropped requirements for approval of specific pathogen reduction technologies, leaving firms free to use any technology to reach the standards for *Salmonella* contamination (Hudnall, 1998). This could reduce costs of slaughter and processing by giving firms more flexibility to use technology that fits the scale of their operations.

Food Additive Approval

FDA approves the use of additives in food to ensure that such additives—for example, colorings, synthetic flavorings, and preservatives—are safe for human consumption (GAO, 1990). Because these

additives can play a large role in the appearance, palatability, and shelf life of foods, their approval or prohibition could have a significant impact on food choices and nutritional outcomes.

The approval process can be lengthy and expensive, thus slowing the availability of new additives and restricting development to those with sufficiently high potential profits. Yet the process also ensures consumer confidence in the safety of the food supply.

The recent case of olestra, a fat substitute, illustrates the potential magnitude of these effects. Olestra was approved in 1996, 9 years after the petition was first submitted (DHHS, 1996b). Olestra is the first fat substitute with the ability to withstand heat that has been approved by FDA for use in many popular baked and fried salty snack foods, such as potato chips and crackers. In the process of obtaining approval for olestra, Procter and Gamble submitted more than 150 studies on the effects of olestra in humans and animals (DHHS, 1996b). The studies indicated that olestra inhibits the absorption of some fat-soluble vitamins and other fat-soluble nutrients, and can cause some people to experience abdominal cramping and loose stools. In granting final approval, FDA required olestra to be supplemented with vitamins A, D, E, and K in order to compensate for the effect of olestra on the absorption of these vitamins. FDA also required products containing olestra to be labeled with information about the potential for gastrointestinal symptoms and the effect on nutrient absorption. In this case, the approval process functioned

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together with labeling authority to make the additive available while ensuring the safety and confidence of the public. In spite of the labeling requirements for products containing olestra, some consumer groups have continued to express concern about the safety of olestra. The Center for Science in the Public Interest (CSPI) has petitioned the Federal Trade Commission to require warning statements as part of advertisements for products containing olestra (CSPI, 1996) and has asked FDA to remove the approval for olestra or require stronger warning labels on products containing olestra (CSPI, 1998).

The availability of nonfat snacks with flavor and texture similar to the original versions could have a considerable impact on dietary choices, although the net nutritional effect is uncertain. A survey by the Calorie Control Council, an association of low-calorie and diet food manufacturers, suggests that nearly two-thirds of the adult U.S. population consume low- or reduced-fat or reduced-calorie foods and beverages (DHHS, 1996b). Many of these consumers may wish to consume fat-free snacks in an effort to reduce fat and/or calorie intake. However, it is not certain that intake of fat and calories would decline as a result of fat-free snacks. Research suggests that some individuals may compensate or even overcompensate after consuming a fat-free product with higher fat and/or caloric intakes from other foods (Foltin and others, 1992; Shide and Rolls, 1995).

Pesticide Regulations

The Environmental Protection Agency (EPA) sets tolerances or limits on the amount of pesticide residue that can lawfully remain on

food. FDA then tests nonmeat foods in order to enforce these residue limits. Prior to 1996, previous law required EPA to give appropriate consideration to the necessity for the production of an adequate, wholesome, and economical food supply. When setting tolerances to protect the public health, EPA has traditionally assessed both the risks and benefits of a pesticide's use as part of the tolerance-setting process. For certain pesticides that appeared to present significant risks, EPA carefully weighed the risks against the benefits to evaluate tolerances. A benefits evaluation provides information on the way a pesticide is used, the economic and consumer impacts of discontinuing a use and on the availability and practicality of alternative pesticides or treatment methods. Benefits assessments allowed EPA to determine whether a certain risk could be justified in light of the serious economic consequences or disruption to the food supply that would occur if a use were denied or discontinued because a tolerance could not be set. In practice, economic considerations have not driven tolerance decisions or been the basis for granting tolerances that allow unsafe pesticide residues in food.

In certain narrow circumstances, the 1996 Food Quality Protection Act (FQPA) allows tolerances to remain in effect that would not otherwise meet the new safety standard, based on the benefits afforded by the pesticide. Pesticide residues would only be eligible for such tolerances if use of the pesticide prevents even greater health risks to consumers or the lack of the pesticide would result in a significant disruption in domestic production of an adequate, wholesome, and economical food supply. Tolerances based on benefits considerations would be subject to a number of limitations on risk and more frequent reassessment than other tolerances. All tolerances would have to be consistent with special provisions for infants and children. Therefore, this provision narrows the range of circumstances in which benefits may be considered and places limits on the maximum level of risk that could be justified by benefits considerations. It would also apply only to non-threshold risks posed by pesticides, e.g., carcinogenic effects for which conservative quantitative risk assessment is appropriate.

When use of a pesticide is banned, producers are forced to turn to alternatives that may be more expensive, less effective, or both. Higher costs are passed on to consumers to whatever degree the market will bear. Less effective pest and disease control can reduce both yields and quality. Both higher pest control costs and lower yields can lead to higher prices and/or lower supplies. This could lead to decreased consumption of the commodity if imports are not available to fill the gap. Even when overall effects are small, some producers may be placed at a competitive disadvantage. This can change the supply of certain varieties of fruits and vegetables or other foods. On the other hand, the absence of such regulations could undermine consumer confidence in foods and suppress demand.

Prior to the 1996 FQPA, all pesticide registration decisions by EPA considered the benefits of the pesticide in ensuring a plentiful food supply. EPA, and in some cases USDA, estimated the effects of each

proposed pesticide decision on yields, producer income, and consumer food costs. For example, the proposed cancellation of propargite was projected to reduce the quantities of peaches, nectarines, plums, prunes, and strawberries by between 2 and 2.7 percent, with much larger effects in some regions where the pesticide was more important to production (USDA, National Agricultural Pesticide Impact Assessment Program, 1994). Unfortunately, there are very few studies of effects after an agricultural chemical was actually canceled, although there is some anecdotal evidence. For example, while overall apple production was not greatly reduced by the voluntary withdrawal of Alar, a growth regulator, many growers in the mid-Atlantic can no longer grow particular varieties which depended on the growth regulator (Gianessi 1993).

In practice, EPA often grants registrations for an alternative in conjunction with cancellation of a pesticide in order to minimize losses (Gianessi, 1993). USDA can also target research funds to develop alternatives. However, the regulatory process can affect consumer choices even without a cancellation. Pesticide manufacturers sometimes withdraw their application for a pesticide registration in response to a requirement for additional data, and many potential pesticides are never introduced (Gianessi, 1993).

The 1996 FQPA resulted in some changes in the regulation of pesticide residues that could affect prices or availability of some foods. Some of the provisions could result in lower allowable levels of pesticide residues on foods, which could lead to higher costs because alternatives are more expensive, or lower yields because alternatives are less effective.⁷ Other provisions allow safe levels of residues on foods where no residues would have been permitted under previous law, which could lower crop protection costs or increase yields (EPA, 1996).⁸ The EPA is aware of these issues and is working with

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⁷ The FQPA narrowed the range of circumstances that would allow the consideration of pesticide benefits in tolerance decisions. The FQPA also requires greater consideration of risks to children, essentially requiring an assumption of greater risk when information about safety to children is lacking. Further, the FQPA requires EPA to develop new tests for possible effects of pesticide residues on the endocrine system (EPA, 1996).

⁸ The FQPA replaced the Delaney Clause, a provision that in practice prohibited tolerances for some pesticides if the residue had the potential to concentrate in a processed product, and carried a cancer risk that was so low that it would have been allowable on other foods. The FQPA allows residues in processed foods as long as they are .safe,. defined as .a reasonable certainty that no harm will result from aggregate exposure. to the pesticide (EPA, 1996).

USDA, the agricultural community, and other parties to produce an implementation approach that meets the health standard of the Act while minimizing the harm to agriculture and maintaining availability of reasonably priced food.

In addition, the FQPA contains a potentially important provision that could influence information available to consumers about pesticide residues and thereby influence their food consumption choices. The new law requires EPA to publish a short pamphlet containing consumer-friendly information on the risks and benefits of pesticides.

This information would be distributed each year to .large retail grocers for public display (in a manner determined by the grocer).. In

addition, petitions for tolerances by pesticide manufacturers must include informative summaries that can be published and made publicly available. This information can either decrease consumer concerns (if it can show how low pesticide residue risks compare with other sources of risk) or increase them (by simply drawing attention to the risk because consumers often react to the fact that a risk is nonzero) (Magat and Viscusi, 1992).

Animal Drug Approval

FDA approves drugs for use in animals, including livestock, dairy, poultry, and aquaculture. In addition to treatment or prevention of disease, animal drugs can be used to affect rates of production variables such as growth, weight gain per unit of feed, or milk production in the case of dairy animals. These factors influence the costs of production, so the approval or restriction of a (production) drug can affect prices and availability and, therefore, consumption of meat, poultry, and dairy products. Further, animal production drugs can affect the composition of the final product, such as the fat content of meat, so approval of a drug can increase the availability of leaner meats in some cases. As with pesticides and additives, consumer perception about the safety of the drugs used can also affect consumer demand.

The case of bovine somatotropin illustrates the tradeoffs between supply gains from the use of animal production drugs and the potential for consumer distrust. Recombinant bovine somatotropin (rbST) is a synthetic hormone injected into dairy cows that increases milk output by 12-15 percent per cow (Martin and others, 1990). On November 5, 1993, FDA approved an rbST product after determining, among other things, that it was safe for treated animals and that the food products from the animals were safe for human consumption. FDA also found that there is no difference in hormone levels or nutritional composition of the milk produced by cows treated with rbST. Opponents have claimed that use of rbST could cause health problems in humans, stress on dairy cows, and increased pressure on small dairies (Ben & Jerry's Homemade, Inc., 1997; Mothers and Others, 1997). Douthitt and others (1996) found that 5 percent of surveyed consumers reported having reduced their consumption of milk after rbST was introduced, 0.3 percent reported having stopped buying milk altogether, and 8 percent reported buying only milk identified as from untreated cows. However, ERS researchers were unable to detect any effect of rbST introduction on demographic, price, and income coefficients in a model of monthly per capita milk consumption for 12 milk marketing orders from December 1978 through September 1996 (Aldrich and Blisard, 1998). While consumer distrust may not have materialized as predicted, consumers with strong concerns benefit from labels to identify characteristics of interest to the consumer, such as from cows not treated with rbST. Regulations influencing labels are discussed in the next section.

Information Regulations

Information regulations aim to correct the market failure associated with information asymmetry (when sellers have more information about a product's characteristics than buyers, or vice-versa). Information asymmetry occurs frequently with food products because consumers are unable to verify certain food characteristics, such as its level of safety, its ingredients, or its nutritional composition. As a result, producers have insufficient incentive to produce the optimum level of these characteristics. Government regulations can reduce or eliminate the asymmetry by providing consumers with direct information about the relevant food characteristic, or by establishing standards of identity and quality grades that indirectly provide consumers with some assurance regarding the food characteristic in question.

Food Labels and Advertising

Food labeling regulations under FDA and FSIS stipulate what information is required on labels, as well as what information is permitted and not permitted on labels. Similarly, advertising regulations under the Federal Trade Commission prohibit advertising that is untruthful or misleading. Nutrition information, nonhealth information such as dolphin-safe and safe handling labels are all controlled to varying degrees by regulations.

Nutrition labeling. Current regulations require that all food ingredients and specific nutrition information be listed on the label of most processed food products. Regulations introduced in 1993 also set clear standards for the use of nutrient content claims and health claims. For example, a high fiber food must contain at least 5 grams of fiber per serving and either meet the definition for a low-fat food (no more than 3 grams of fat per serving) or provide the level of total fat next to the high fiber claim (Stehlin, 1993).

The 1993 nutrition labeling regulations by FDA and USDA encourage providers of fresh produce, seafood, and meats to voluntarily provide nutrition information on the most commonly consumed raw foods (in the same format as nutrition information on labels of processed foods). Although providing nutrition information for raw foods is voluntary, it could become mandatory if less than 60 percent of grocery stores nationwide do so voluntarily.⁹

Although little research is available on the impact nutrition regulations might have on consumer food choices, the regulatory impact analyses for the 1993 nutrition labeling regulations estimated that (1) compliance costs would translate into small price effects with little, if any, impact on overall food consumption (DHHS, 1991; USDA, Food Safety and Inspection Service 1991a); (2) a small-business exemption would eliminate any likely effect on the variety of products available resulting from small-scale producers of specialty items being unable to comply profitably because of higher fixed costs (DHHS, 1993); and (3) the nutrition information itself would have a beneficial effect on consumer food choices (DHHS, 1991).

9 FDA is required by the NLEA to make labeling of the 20 most frequently eaten fruits and vegetables and raw fish mandatory if voluntary compliance is less than 60 percent of stores. FSIS is not required by law to make labeling of raw meat and poultry mandatory, but will initiate rulemaking to determine whether a mandatory program would be beneficial if less than 60 percent of stores provide nutrition information for 90 percent of the 45 major cuts of meat and poultry.

The latter expectation was based on results of a nutrition information program introduced by Giant Food, which used shelf-tags to identify products low in fat or sodium or high in fiber. In the test stores, the market share for products that were low or reduced in fat, cholesterol, sodium, and/or calories increased more rapidly (or declined less rapidly) than in the control stores where tags were not used (Levy and others, 1988). Based on these results, researchers predicted that the changes in food choices resulting from the new nutrition labels would translate into reductions in consumption of fat, saturated fat, and cholesterol of 1.4 percent, 0.7 percent, and 0.1 percent for women, and 1.4 percent, 1.3 percent, and 0.1 percent for men (DHHS, 1991). Furthermore, these changes were believed to underestimate the true changes, since the presence of nutrition information on the labels would encourage food manufacturers to improve the nutritional profile of their products (see chapter 11).

Data on new food product introductions show that interest in reduced or low-fat foods increased after the new nutrition labeling regulations took effect. In 1996, 15.6 percent of all new food products made a fat-related claim, up from 3.4 percent in 1988 and 9.6 percent in 1994 (Friedman, 1995). Introductions of low-fat versions were most common for peanut butter, crackers, cheese, and tortilla/corn chips (*Food Labeling and Nutrition News*, 1997b). Nutritionally improved foods were found to command a price premium (Frazão and Allshouse, 1996). The initial interest may be waning, however, as the novelty effect subsides. Fat-related claims fell to 11 percent of new food products in 1997 (Dornblazer, 1998), and sales of some of these products have begun to flatten or even decline (*Food Labeling and Nutrition News*, 1997a). The percent of surveyed consumers who reported changing purchases because of nutrition label information fell from 70 percent in 1996 to 61 percent in 1997 (Food Marketing Institute, 1997).

Survey results suggest that the new nutrition regulations may have had some effect on individual food choices, although the expected reduction in overall fat intake is elusive. Intake of fat as a share of calories dropped from 34 percent in 1989-91 to 33 percent in 1994-96 (USDA, ARS, 1998). However, average total fat intake has increased from 71.8 grams per day during 1989-91 (Tippet and others, 1995) to 74.4 grams per day in 1994-96 (USDA, ARS, 1997).

(Calorie intake increased from 1839 per day in 1989-91 to 2002 per day in 1994-96.) Individuals who consume low-fat foods may compensate with higher intakes of fat and/or calories in subsequent meals (Shide and Rolls, 1995; Foltin and others, 1992).

Non-health information. Other information on labels can also influence food choices. Food label regulations permit foods to be identified as .organic,. .natural,. .not irradiated,. .kosher,. .dolphinsafe,

. or .made in Texas,. as long as such claims are truthful and not misleading. This allows the development of niche markets in which consumers can identify products with a characteristic of interest to them. Some consumers might otherwise avoid foods not labeled to proclaim such an attribute. In cases where consumer avoidance is based on fear of health effects, however, permission to label could be misleading if it creates the impression that another product is unsafe.

Milk produced from cows treated with rbST is an example of these labeling issues. To allow consumers to be informed while preventing deception, FDA issued interim guidance on voluntary labeling of milk and milk products from cows not treated with rbST (DHHS, 1994). FDA recommended that labels identifying products as .from cows not treated with rbST. also include a statement, .No significant difference has been shown between milk derived from rbST-treated and non-rbST-treated cows.. FDA also recommended that firms using .from cows not treated with rbST. labels should have a recordkeeping system to verify the label.s claim since it is not possible to distinguish milk from treated vs. nontreated cows by current laboratory methods.

Safe handling labels. Safe handling labels are required on fresh meat and poultry products. These labels instruct consumers to refrigerate the product, cook it thoroughly, and avoid cross-contamination of other surfaces that could contact food. Industry concern that these labels might frighten consumers into avoiding fresh meat and poultry products has not been borne out. The labels have instead contributed to some improvement in handling practices, with nearly 60 percent of consumers reporting they have seen the label and, of those, over 40 percent reporting they have changed their practices as a result (Food Marketing Institute, 1996).

Standards of Identity

Standards of identity require food products to be what they claim to be, that is, peanut butter must be made from and contain a minimum amount of peanuts. Standards of identity cover hundreds of foods, including milk, specific cheese types, processed meat products, juices, and baked goods. The minimum and maximum compositional requirements prevent economic deception by protecting against the addition of water or other fillers that could dilute the value of the nutrients in the food. The standards enable consumers to try new brands with some assurance about the nature of the product. Without this assurance, manufacturers would be vulnerable to unfair competition from inferior products and consumers would lose confidence in the food supply (DHHS, 1995b).

With rising consumer concern about nutrition, however, standards of identity have been criticized for restricting access to more healthful alternatives (Public Voice, 1991; National Research Council, 1988). Because many standards include minimum requirements for fat content or other fat-containing ingredients, lower fat versions that did not

meet the food's standard were required to carry labels identifying them as .alternative,. .replacement,. or .substitute..which were seen as pejorative.or had to be given a different product name. For example, under standards adopted in 1938, a product labeled .ice cream. had to have a minimum of 10 percent milkfat (8 percent if the ice cream included bulky flavors) or it was deemed to be misbranded or adulterated. Frozen dairy products containing only 5 percent milkfat were called ice milk. Standards for frankfurters, bologna, and sausages, on the other hand, limit the amount of fat and added water, but also restrict the addition of binding and emulsifying ingredients that could substitute for fat, such as starch vegetable flour and lecithin.

Manufacturers argued that lower fat versions were not nutritionally inferior, and that such products should be identified with an appropriate descriptor of nutrient content and a commonly understood name (USDA, FSIS, 1995). FDA and FSIS recognized that the 1993 nutrition labeling regulations.which require a more complete list of ingredients and nutrition information.provided much of the protection that the standards of identity were intended to provide, and ensured that consumers would have vastly more information about the makeup of a particular food product than was available when the standards were first adopted in 1938.

Therefore, FSIS and FDA have begun revising standards of identity, both in response to requests by manufacturers and consumer groups,

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and more broadly as part of efforts to reduce unnecessary regulation (HHS, 1995b; USDA, FSIS, 1995). For example, FSIS has proposed a rule that would allow low-fat processed meat and poultry products to use the standard terms instead of requiring them to be identified as .imitation. meat (USDA, FSIS, 1995).¹⁰ The proposed label for lowfat processed meat and poultry product requires additional ingredients to be listed on the ingredient statement.such as water and fatreplacing ingredients.with a designation that these ingredients are either in excess of amounts permitted in the standard product or are not in the standard product. Labels would also have to inform consumers of any differences in functional properties resulting from the reformulation. For example, if the lower fat version of frankfurters does not hold up under freezing, the label would need to state .do not freeze.. If the low-fat version of cream cheese does not perform well in baked recipes, the label should state, .not recommended for baking . (USDA, FSIS, 1995). Thus, the label can inform the consumer of deviations from the standard product while still conveying that the product will be similar in flavor and texture to the standard product. Similarly, in response to manufacturers. and consumer groups. requests, FDA removed the standard of identity for ice milk in 1994 (DHHS, 1995b). Products formerly labeled as ice milk may now be labeled as .reduced-fat ice cream. or .low-fat ice cream. depending on the total fat content of the food. Manufacturers may also make other versions of ice cream, such as .nonfat ice cream. or .light ice cream.. These changes increase the variety of products available, while safeguarding the integrity of traditional standardized products.

Consumers are informed by the product labeling of the differences between the traditional standardized product and the modified version (DHHS, 1995b).

On the other hand, earlier standards of identity for certain lower fat milk, sour cream, and yogurt products were inconsistent with current definitions for lower fat products. To eliminate this inconsistency, FDA revoked the standards of identity for these products in 1996. In order to be labeled .low fat,. .reduced fat,. or .light/lite,. these

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10 A Policy Memo provided guidance on this issue as early as 1991, but at that time the label for low-fat hamburger would have been required to identify the food as .low-fat hamburger, water, and carrageenan product. (USDA, FSIS, 1991b). A 1995 Policy Memo permitted a less pejorative label such as .low-fat pepperoni. (USDA, FSIS, 1995). products must now use the same definitions used by all other food products (DHHS, 1996a).

Quality Grades

The Commodity Standardization Program of the USDA Agricultural Marketing Service (AMS) establishes quality grades for many fresh food commodities, including eggs, milk, fruits, vegetables, meat, poultry, and grains, as well as bulk processed commodities such as frozen vegetables. Commodity graders are Federal employees or federally licensed State inspectors, but the grading services are voluntary and paid for by the firms requesting it. These grades aid in the marketing of agricultural commodities by providing (1) a common language of trade and (2) a means of measuring value to establish prices (GAO, 1990). The grade conveys information about the size, shape, maturity, and blemishes of the commodity so the buyer can compare prices for commodities of similar quality. In other cases, such as grains, the grade conveys information on characteristics that are not observable by visual inspection, such as the protein content and moisture of the grain. This more efficient transmission of information about the commodity helps reduce the cost of marketing the commodity. Lower marketing costs can either lower prices for producers or increase profits for producers or suppliers, which can increase the probability that a particular item will be available for sale.

When grades do not reflect consumer preferences, producers may not have an incentive to supply the desired characteristics because consumers cannot convey that they would be willing to pay a premium for the attribute. Consumers may consume less of a food if there is a risk that the quality is below their expectation. For example, a survey found that inconsistencies in flavor, tenderness, and juiciness. factors cited by consumers in Virginia to explain why they have decreased their purchases of beef.could explain part of the decline in market share of beef throughout the 1980.s (Purcell, 1993). Grade names also have the potential to appeal to consumers. The .Good. beef grade, which applied to leaner beef, reflected historical preferences for higher fat content; beef with higher fat marbling is graded as .Choice. or, for even higher fat, .Prime.. Preferences began to shift to lower fat content, but the .Good. grade name may have had the connotation of a mediocre product (Sims, 1998). To appeal to consumers interested in lower fat content, the grade name

for leaner beef was changed from .Good. to .Select. in 1987. The change may have had a significant impact on consumption of that grade: the proportion of beef graded good increased from 1.8 percent in 1986 to 9.3 percent in 1989 (Sims, 1998). The .Select. grade was further restricted to younger animals in 1997, which could further increase consumer interest in leaner beef, since younger beef is generally more tender for a given fat content.

Regulations Covering Other Sectors

Food choices can also be affected by regulations such as environmental control, worker safety, protection of competition, and trade policies that, while not aimed specifically at the food sector, influence food production or marketing.

Environmental Controls

Water and air quality standards at the Federal and State level are intended to minimize the contamination of streams and ground water from livestock, dairy, and poultry wastes, as well as air quality problems associated with ammonia, methane, and odors (Christensen and Krause, 1993). Some farm operations may also be controlled by regulations to address other problems, such as dust, insects, rodents, noise, and degradation of aesthetics. Such controls generally impose added costs on producers and eventually are passed on to consumers (Christensen and Krauss, 1993). Higher prices could lead to a reduction in consumption.

In general, there has been little research on the effects of environmental regulation on food choices, but the impending ban on methyl bromide has been studied in some detail because its effects on some crops could be severe. The Clean Air Act (as revised in 1998) includes a phaseout of the fumigant methyl bromide, cutting use by 25 percent in 1999, 50 percent in 2001, 70 percent in 2003, and 100 percent in 2005, because it reduces ozone in the atmosphere.

Quarantine and shipping uses are exempt and critical agricultural uses will be exempt after 2005. Because alternatives to methyl bromide are very limited, this cancellation could cause large yield losses for Florida and California strawberries and Florida tomatoes if these crops do not qualify as critical uses. Imports may only partly substitute for lost domestic production, especially in the short run, and

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overall consumption of strawberries and tomatoes may decline at least temporarily (USDA, National Agricultural Pesticide Impact Assessment Program, 1993).

Worker Safety

Agricultural producers are also subject to worker safety restrictions, which influence the cost of production and thus influence food prices and food choices. Producers are subject to safe labor requirements enforced by the Occupational Safety and Health Administration of the U.S. Department of Labor. In practice, employers of 10 or fewer employees have often been exempted by annual congressional action

(Runyan, 1992). In addition, agricultural employees are protected from pesticide hazards by the Federal Insecticide, Fungicide, and Rodenticide Act, enforced by EPA. Applicators of restricted use pesticides are required to be certified through training, competency exams, and State licencing. EPA pesticide protection standards for other pesticide handlers (e.g., workers involved in mixing pesticides) as well as harvesters and other farm workers were revised in 1992 (EPA, 1992). The new standards require training, protective equipment in some cases, more specific field re-entry restrictions, notification of pesticide applications, supplies for washing spilled pesticides (such as water, soap, and paper towels), and emergency assistance. These changes were projected to cost \$94.3 million across all farms in the first year and \$49.4 million in subsequent years (1992 dollars). While these amounts are small relative to the total value of agricultural production (\$226 billion for all commodities in 1996; see USDA, ERS, 1997a), some crops or varieties could be disproportionately affected by the employee training requirements because they involve more employee turnover or require more frequent pesticide applications (EPA, 1992).

Protection of Competition

Mergers and anticompetitive behavior in the food industry are regulated by the U.S. Department of Justice; the Federal Trade Commission; the Commodity Futures Trading Commission; and USDA's Grain Inspection, Packers, and Stockyards Administration to prevent the development and exercise of monopoly/monopsony power.

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Industry concentration could result in monopoly power, with consumers facing a small group of sellers, or in monopsony power, with input suppliers facing a small number of intermediate buyers. Firms with monopoly power raise consumer prices above competitive levels and sell their products in quantities below the competitive level.

Longstanding market power could shield firms from competitive pressures, eroding processing productivity and raising costs. But increased consolidation may also result in greater efficiency, which could lower prices to consumers. Thus regulation of competition may have complex effects, which regulators attempt to take into account.

Trade Policy

Trade policies that restrict food imports, such as the sugar import quota under the sugar program, can result in lower consumption of foods at higher prices. Trade policies that encourage exports, such as the Food for Peace Program, which provides for concessional sales, donations, and grants, can also result in lower domestic availability, although for commodities that are produced in surplus (such as wheat and feed grains), this may have little impact on food choices. Under several multilateral and bilateral trade agreements, countries have agreed to relax trade restrictions. Under the North American Free Trade Agreement (NAFTA), the United States eliminated tariffs on imports of several commodities in 1994, with additional tariff removals scheduled for later years. While many factors, such as

weather and exchange rates, influence fluctuations in imports and exports, ERS (1997b) has estimated that, in 1996, agricultural imports from Mexico and Canada were about 3 percent and 5 percent higher, and agricultural exports to Mexico and Canada were about 3 percent and 7 percent higher, than they would have been without the agreement. Imports of several fruits and vegetables were higher in 1996 than they would have been without NAFTA, including fresh tomatoes (6-15 percent higher), frozen broccoli and cauliflower (6-15 percent higher), and orange juice (2-5 percent higher). The agreement also fostered increases in two-way trade; for example, U.S. beef exports to Canada were about 100 percent higher in 1996 because of NAFTA, while U.S. imports of beef from Canada were about 50 percent higher.

NAFTA and the Uruguay Round Agreements of the General Agreement on Tariffs and Trade (GATT) require any sanitary and Gov't Regulations and Food Choices • AIB-750 USDA/ERS • 357
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Table 1—Selected regulations/policies affecting dietary choices

Program/reg Foods affected Effects on dietary choices Size of effects

Farm assistance programs (current and historical)

Price and income support programs: Wheat, rice, feed grains, oilseeds, marketed supply, increase elasticity of demand for affected commodities, price. for affected com sugar modities, feed crops

Import restrictions: reduce only part of domestic supply, increase poultry, dairy, egg price. prices. Can be large for a pop. group

Acreage restrictions: reduce when surpluses are supply, increase price. distributed to that group.

Deficiency payments: may increase supply, but payments usually linked to acreage restrictions.

Milk marketing orders: set regional minimum prices for milk for different uses; may demand lead to below-market prices for cheese.

Fruit/vegetable marketing orders: Federal orders: Some marketing orders set 27 fruits/vegs., quality limits, which may be available. and spec. crops. limit availability, but also increase demand by Others covered in State orders. reducing quality variability.

Research and Federal programs: Producer assessments fund Dairy—see Chpt. 10 promotion beef, dairy, eggs, generic advertising; can increase consumer demand Beef: mixed rooms, popcorn, for the commodity. evidence. pork, potatoes, soybeans, water- Catfish: large. melons, wheat.

Orange juice: limited State programs for many fruits and vegetables.

Food safety

Food inspection: All foods Safety requirements may increase costs, and price costs, except for of foods. small firms.

Confidence in the food supply: Effect of lower supply may increase consumer demand. confidence large in short run.

--Continued

Table 1—Selected regulations/policies affecting dietary choices, cont.

Program/reg.	Foods affected	Effects on dietary choices	Size of effects
Food additive	All processed foods	Can increase shelflife, lowering costs; can provide characteristics of interest to consumers, increasing demand. additives leading to low-fat or fat-free foods.	No estimates available
Approval process	expensive, restricting development to high-profit foods, but maintains consumer confidence	No estimates available.	
Pesticide regulations	All foods supply, increase for certain varieties.	Restrictions may decrease price small, may be large	Overall impacts may be large
Confidence in the food supply	may increase demand.	Effects of lower confidence large in short run.	
Animal drug approval	Meat, poultry, eggs, dairy, drugs, raised supply, decrease costs of seafood production.	Approvals allow use of drugs, which increase farm-price-to-farm-raised supply, decrease price elasticity of demand.	Small—low farm-price-to-farm-raised price ratio,
If consumers don't accept new drug	concerns could decrease demand.	Effects of consumer concerns usually temporary.	
Information regulations			
Labels/advertising labels	All processed foods (fresh food labels voluntary, but any labels standard format) (see chpt. 11)	Information affects formulation decisions. changes may be larger	Small effect of information.
Label regs.	increase costs of foods. except for small firms.	Small effect on price	
Standards of identity	Over 200 processed foods labeled as "imitation" or other pejorative term, items which suppressed demand for more healthful products.	Prior to revisions, lower fat versions required to be "imitation" or effect for some items (low-fat ice cream/hot dogs).	Revisions may have had a large effect for some items

Table 1—Selected regulations/policies affecting dietary choices, cont.

Program/reg.	Foods affected	Effects on dietary choices	Size of effects
Quality grades	Dairy, eggs, poultry, beef, many fruits and vegetables	Standardization lowers information costs available.	No estimates available
Where grades used	at retail level (such as for beef), grade name can affect consumer demand.		
Other regulations			
Environmental controls	Potentially all foods	Environmental controls could increase costs (or prevent cost-decreasing changes). fruits/vegetables with high price elasticity of demand.	Could be large for individual
Worker safety	All foods	Protection of farmworkers and workers; other processing personnel could increase costs.	Small for farm and processing personnel estimates not available.
Protection of competition	All foods	Restrictions of mergers prevent monopoly power, which could decrease supply and increase prices.	No estimates available.
Increased consolidation	may		

also result in greater efficiency, which could lower prices.
Trade policy All traded foods Policies that restrict Small for dairy imports or encourage and sugar with low exports decrease domestic price elasticity of supply and increase price. demand.
Larger for fruits and vegetables with higher price elasticity of demand.
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phytosanitary restrictions on imports, either for food safety or for crop protection, to be based on fair science-based rules. In February 1997, USDA's Animal and Plant Health Inspection Service (APHIS) partially lifted a 1914 ban on Mexican avocados set to protect U.S. avocado production from Mexican avocado pests that might be accidentally imported with the fruit. To minimize the risks of imported pests, Mexican avocados are allowed only into 19 Northeastern States and the District of Columbia, which do not produce avocados.

APHIS projected that, as a result, the price of avocados could fall by anywhere from 8 to 41 percent in these States, with consumption increasing 8.6 to 44 percent (Roberts, 1997). This case illustrates the potentially large magnitude of effects on individual foods from changes in trade policy.

Conclusions

Regulations, whether or not they are directed specifically at the food sector, can affect the varieties and qualities of foods available for purchase, the prices consumers face, the information consumers receive about a product, and consumer confidence in the food supply. The examples described here illustrate that the impact of regulations that affect the supply of commodities depends on how the regulations affect retail food prices and how responsive consumers are to those prices. Ingredient costs are a small fraction of retail prices for many processed foods, but commodity prices are a larger fraction of retail prices for fresh meat, fish, poultry, eggs, milk, cheese, and produce. Consumers are not very responsive to prices for poultry, eggs, fish, milk, and cheese, but are more responsive to the prices of some fresh fruits and vegetables, as well as beef and pork. From the standpoint of dietary guidelines, policies that may affect the consumption of individual fruits and vegetables considerably may not affect overall consumption of fruits and vegetables by very much. Yet even when overall impacts of regulations are small, the impacts on different agricultural regions, or firms of different sizes, can be large. And even when impacts on the diet of the population as a whole are small, the impact on specific population groups can be significant, as in the case of food surplus distribution programs.

Regulations that affect the information that consumers receive have the potential to at least temporarily influence individual food choices, either the direct effect of the information on consumers or from product reformulation by food manufacturers. Yet individual food choices,

such as consumption of lower fat foods, are not necessarily associated with lower fat intake overall. Even generic advertising for

commodities, which shows strong effects in some cases, may increase consumption of one commodity at the expense of another in the same group.

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Article 4 available at: http://www.ers.usda.gov/amber-waves/2015-januaryfebruary/new-regulations-will-inform-consumers-about-calories-in-restaurant-foods.aspx#.Vrvmk5MrL_Q

New Regulations Will Inform Consumers About Calories in Restaurant Foods

by [Hayden Stewart](#) and [Rosanna Mentzer Morrison](#)



Highlights:

- Menu-labeling regulations released by the U.S. Food and Drug Administration require chain restaurants to post the calorie content of menu items at the point of sale.
- ERS research shows that consumers who already have healthier diets are more likely to use nutrition information provided by restaurants.
- ERS research reveals that, although “rules of thumb” can help consumers identify large calorie differences, they are not much help when trying to distinguish between foods that differ by less than 200 calories.

Because of menu-labeling regulations developed by the U.S. Food and Drug Administration (FDA), consumers across the country will soon be seeing calorie contents for foods, beverages, and meals when they eat out at larger chain restaurants. Fast-food restaurants must post the number of calories in burgers, sandwiches, and other foods on their menu boards; in full-service restaurants with wait staff, calories must be noted in the menus. For items that are self-service or on display for purchase, calories must be declared on signs adjacent to the foods. Restaurants have until December 1, 2015, to comply with these new regulations.

The underlying premise of the new regulations is that providing consumers with nutrition information will enable them to make informed and healthful dietary choices. ERS research shows that Americans typically make less healthy choices when eating out, including by consuming more calories. Two ERS studies in 2010 found that each away-from-home meal that replaced a meal at home increased the average daily calorie intake of adults by 134 calories and of teenagers by 108 calories.

Providing consumers with calorie information on menus could help consumers choose lower calorie meals when they eat out and encourage them to consume fewer calories throughout the day. Menu labeling may even prompt restaurants to improve the nutritional quality of the menu items they offer.

Years of Debate Preceded Menu-Labeling Regulations

Prior to the new regulations, Federal law only required restaurants to have nutrition information available upon request when making a nutrient-content or health claim. For example, if a menu listed an entrée as being low in fat, information about the amount of fat in the entrée had to be available upon request. Nutrition and calorie information disclosure was otherwise voluntary and did not necessarily appear on menus or menu boards. In a study conducted in Atlanta, GA, in 2004-05, researchers found that only 6.9 percent of fast-food outlets chose to place calorie information on their menu boards, and just 5.2 percent of full-service restaurants chose to print it in their menus. Many restaurants instead provided consumers with nutrition information online, in pamphlets, on tray liners, and elsewhere, requiring consumers to do the necessary research before ordering their food.

Debate over mandatory menu labeling grew in the 2000s as it became clear that eating out is associated with less healthful food choices. Opponents and proponents debated the costs for requiring restaurants to provide the information, as well as the benefits to consumers. Proponents

pointed to studies showing that consumers typically underestimate the calories in restaurant foods and agreed with the American Heart Association that menu labeling was “an important part of a comprehensive approach to addressing our Nation’s obesity epidemic.” However, other organizations opposed new regulations partly on the argument that consumers can already identify more and less healthy meals. The Center for Consumer Freedom argued that, “We don’t need government to tell us the difference between salad and a 12-piece bucket of chicken.”

By the end of the first decade of the 2000s, a number of State, county, and municipal governments were debating policies that would require restaurants to provide consumers with calorie and other nutrition information at the point of purchase. The first to implement such a law was New York City in 2008. This law was followed by similar laws in King County, WA; Philadelphia, PA; Montgomery County, MD; the State of California; and other jurisdictions. Many eating places in other localities without menu-labeling regulations continued to voluntarily provide nutrition information, though not always on menus. In an analysis of data from the 2007-08 and 2009-10 Flexible Consumer Behavior Survey (FCBS) modules of the National Health and Nutrition Examination Survey (NHANES), ERS researchers found that 21 percent of fast-food patrons and 17 percent of full-service restaurant patrons reported seeing nutrition information on menus.

The National Restaurant Association advocated for Federal labeling regulations, arguing that a uniform, national standard is better than “a patchwork of state and local requirements.” In 2011, the FDA issued a set of proposed rules. After considering approximately 900 comments from consumers, consumer groups, industry, and other organizations, the FDA published its final regulations in the *Federal Register* on December 1, 2014. FDA’s menu-labeling regulations will supersede State and local menu-labeling provisions.

Regulations Cover Restaurants and Similar Retail Food Establishments

FDA’s new calorie-labeling regulations apply to fast-food and full-service restaurants that are part of a chain with 20 or more locations doing business under the same name and offering substantially the same menu items. The regulations also apply to other chains of 20 or more locations that sell restaurant-type foods. Retail food chains such as ice cream shops, mall cookie counters, cafeterias, coffee shops, convenience stores, delicatessens, grocery stores, and food service counters at amusement parks, bowling alleys, and movie theatres are all included under the new regulations.

However, menu-labeling regulations do not cover smaller chains and independent restaurants, so Americans should not necessarily expect to see calorie information at all eating places. In addition, the regulations define “location” to mean a fixed position or site. Therefore, foods served on trains, airplanes, and other transportation modes are not subject to the regulations. Schools are also not covered.

Menu-labeling regulations cover “standard menu items”—defined by FDA as restaurant-type foods and beverages that are routinely included on a menu or menu board or routinely offered as a self-service item or a food or beverage on display for purchase. Condiments, daily specials, temporary menu items, custom orders, and foods and beverages being test-marketed are exempt.

For foods and establishments that are subject to regulations, consumers will be seeing calorie information displayed in a clear manner, such that ordinary consumers can likely read and understand the information under customary conditions of purchase and use.

Along with this calorie information, consumers will also be seeing the following succinct statement about an individual's daily calorie needs: "2,000 calories a day is used for general nutrition advice, but calorie needs vary." This statement is designed to allow consumers to compare the calorie declaration for a menu item to their daily energy requirements. However, because children and adults have very different nutritional needs, FDA will also allow restaurants to use the statement, "1,200 to 1,400 calories a day is used for general nutrition advice for children ages 4 to 8 years, but calorie needs vary," on a menu or menu board targeted to children.

While calorie information must be clearly and prominently displayed, it is not the only sort of nutrition information consumers will now have access to. Menus and menu boards must also inform consumers that additional information, such as saturated fat, carbohydrate, and sodium content, is available upon request. Such information must be available in written form and include most of the nutrition information currently provided on packaged food labels.

Menu-Labeling Information May Need To Surprise Consumers To Change Food Choices

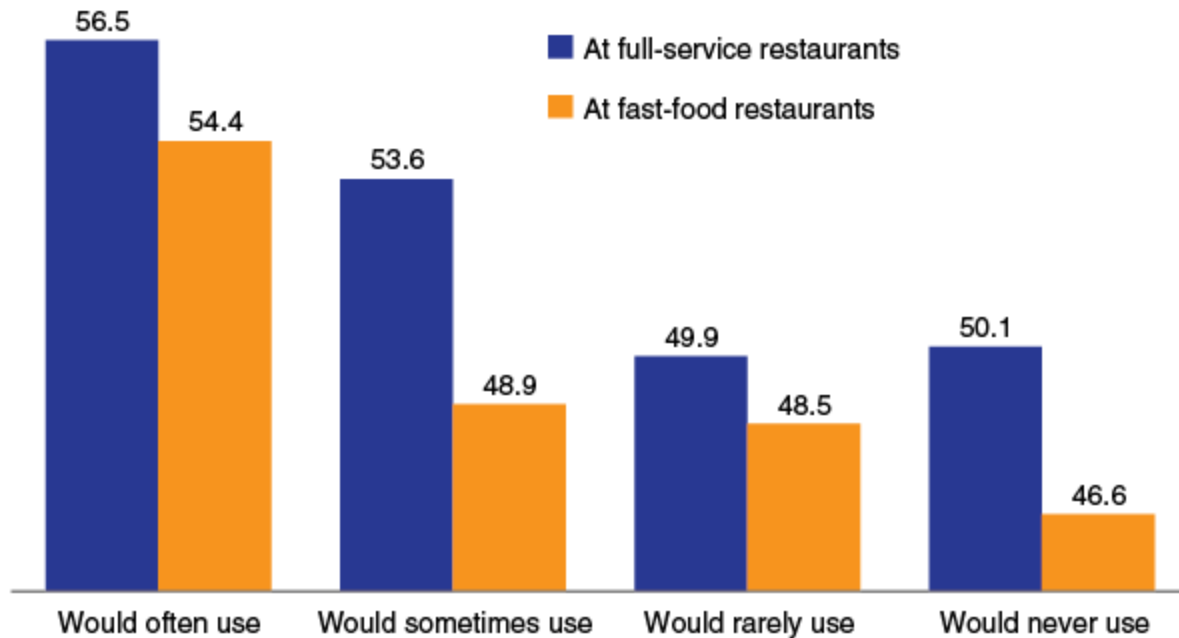
Will the new calorie-labeling laws cause Americans to behave differently? Will they make different choices when eating out or alter their food choices at home later that day or week? How will restaurants respond to the new regulations? In two recent studies, ERS researchers began to explore these questions. One study examined the characteristics of consumers who say they currently use available nutrition information in eating places, as well as the characteristics of consumers who say they *would* use such information if it were available. The second study focused on whether calorie labeling of restaurant items is likely to surprise consumers with new information.

Using data from the 2007-08 and 2009-10 FCBS module of NHANES, ERS researchers found that people who already have healthier diets and practice healthy dietary habits, such as reading nutrition information on food labels in grocery stores and keeping healthy foods in their homes, were more likely to use calorie information when eating out. For example, FCBS respondents who rarely or never had dark green vegetables stored at home were as likely to go to a full-service restaurant as people who always or most of the time had dark green vegetables at home. However, the "rarely or never" group was 36 percentage points less likely to use the nutrition information on the menus as the "always or most of the time" group.

Strongly correlated with a person's declared willingness to use nutrition information was his or her Healthy Eating Index (HEI) score, a measure of an individual's diet quality that assesses conformance to Federal dietary guidance. People who said that they would use nutrition information "often" in both fast-food and full-service settings have the highest average HEI scores, followed by those who said they would use it "sometimes." Both of these groups had higher HEI scores than those who said that they would "never" use nutrition information.

Higher HEI scores correlate with higher declared willingness to use calorie information

Average HEI score



HEI = Healthy Eating Index. HEI is scored from 1 to 100 with higher scores indicating healthier diets.

Source: USDA, Economic Research Service analysis using National Health and Nutrition Examination Survey 2007-08 data.

Menu labeling could motivate consumers to make different food choices at restaurants by reminding them about the importance of calories when eating out, but research shows that it is most likely to influence behavior when consumers learn new, surprising information. Several studies have shown that menu labeling reduces the likelihood that a consumer purchases an item if its actual calories exceed expectations but has little impact if its actual calories are consistent with expectations.

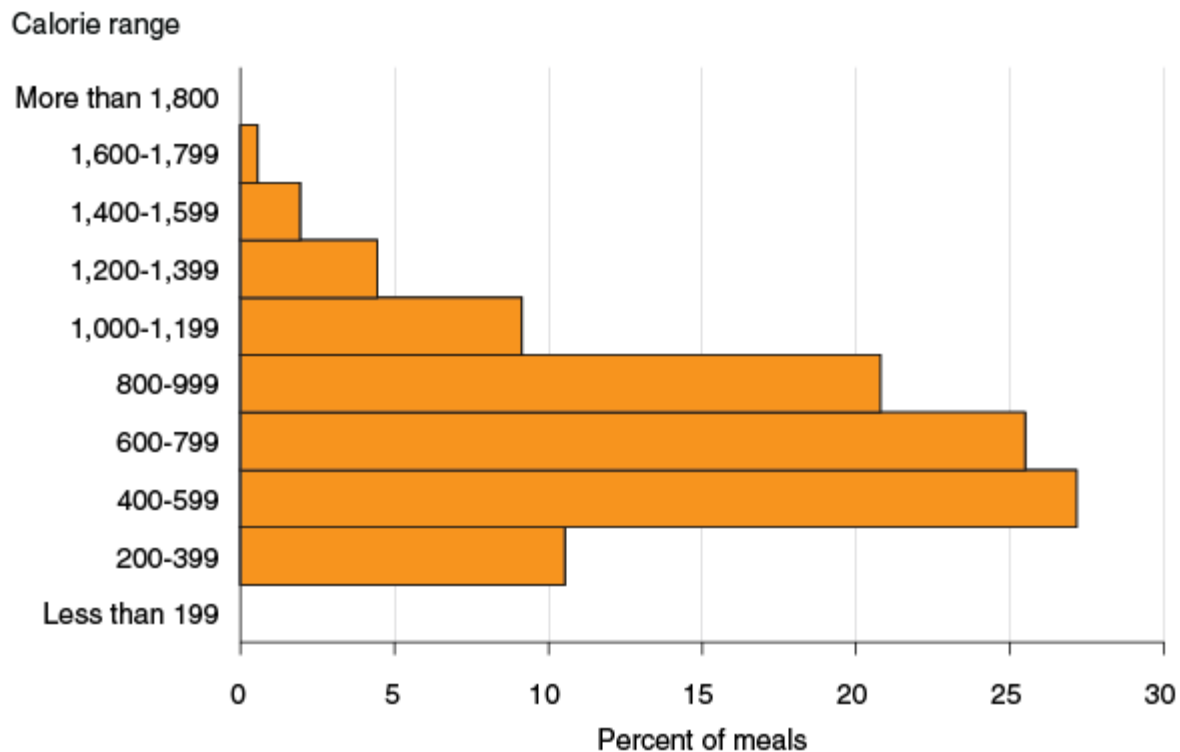
For example, in a study conducted at Oklahoma State University, researchers found that health-conscious consumers were less likely to change their behavior in response to menu labeling. They theorized that health-conscious consumers are more knowledgeable and already understand fairly well which foods are low and high in calories. These consumers are less likely to be surprised by menu labels and, indeed, may learn relatively little new information.

Given evidence that a consumer's prior knowledge of nutrition may affect his or her response to menu labeling, a recent ERS study asked what consumers could likely figure out on their own in the absence of menu labeling. The study built on research in behavioral economics, which shows that consumers typically rely on "rules of thumb" to make inferences about products when they

are not provided with explicit information. For example, a consumer may know to seek out meals rich in fruits and vegetables and to avoid side dishes like French fries and onion rings to lessen the amount of calories consumed.

For the study, ERS researchers collected detailed information on 361 meals sold by 2 fast-food chains and 5,752 meals sold by 6 casual-dining, full-service restaurant chains in Montgomery County, MD. Meals at fast-food restaurants generally included one entrée and a side dish. Those at full-service restaurants included one entrée and any standard side dishes that come with the meal, such as a steak entrée accompanied by a choice of two sides (e.g., French fries, steamed vegetables, a baked potato, or rice). In this case, ERS researchers treated each of the six possible combinations of the entrée and two sides as a separate meal. Calorie counts for meals at both types of restaurant did not account for any additional calories consumers might order from beverages or desserts. The full-service restaurant meals were often more calorie dense; full-service restaurant meals contained between 219 and 2,350 calories, while fast-food meals ranged from 215 to 1,710 calories.

Just over 50 percent of fast-food meals had between 400 and 799 calories

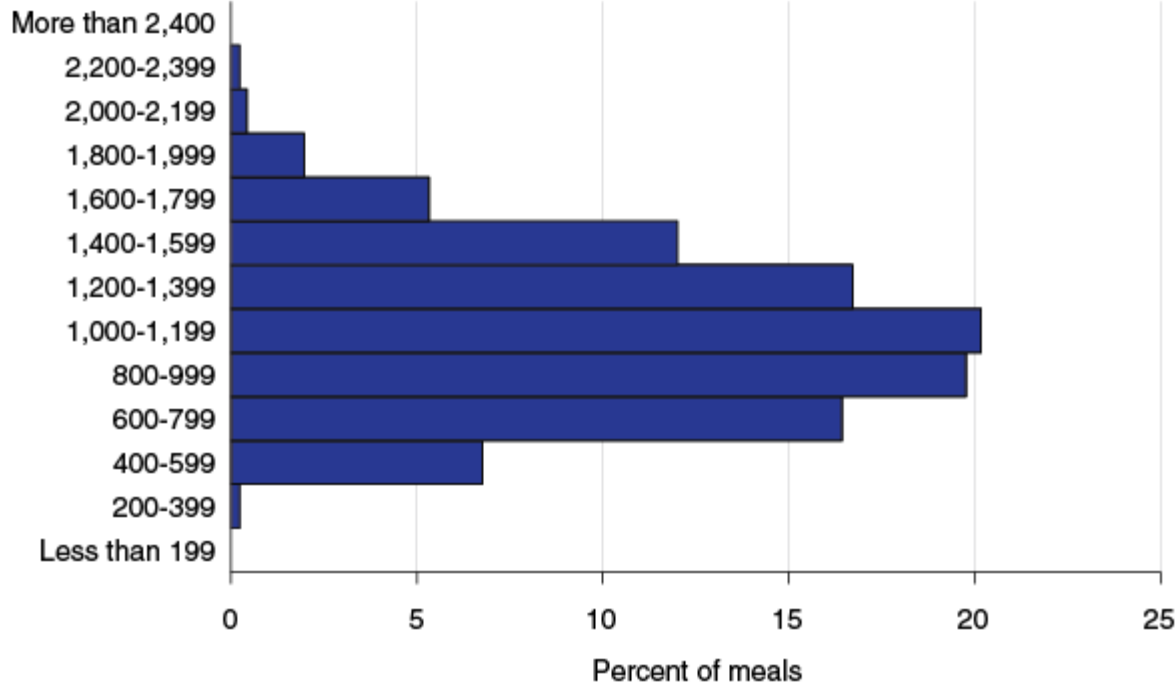


Notes: Calorie distribution is based on 361 meals (entrée and 1 side dish) available at 2 fast-food restaurants in spring 2012. Additional calories from beverages, desserts, or other foods were not included.

Source: USDA, Economic Research Service using publicly available data.

Twenty percent of full-service restaurant meals had 1,400 calories or more

Calorie range



Notes: Calorie distribution is based on 5,752 meals (entrée and any standard side dishes) available at 6 casual-dining, full-service restaurants in spring 2012. Additional calories from beverages, desserts, or other foods were not included.
 Source: USDA, Economic Research Service using publicly available data.

ERS researchers then measured a representative consumer’s ability to discriminate among these meals using rules-of-thumb nutrition knowledge provided by the American Heart Association (AHA) and the National Heart, Lung, and Blood Institute (NHLBI). Results show that consumers who understand the information outlined by these organizations can discriminate fairly well between substantially lower and higher choices. When comparing any 2 fast-food restaurant meals that differ by 200 calories or more, these consumers would be able to correctly identify the lower calorie option 84 to 91 percent of the time. Similarly, when comparing any 2 full-service restaurant meals with a 200-calorie-or-more difference, consumers using the AHA and NHLBI guidelines would be able to identify the lower calorie meal between 73 percent and 80 percent of the time.

However, rules of thumb were less effective for discriminating between foods that differed modestly in calorie content. For meals at fast-food and full-service restaurants that differed by less than 200 calories, consumers that draw on the same AHA and NHLBI guidelines would only have about a 50-percent chance of identifying the lower calorie option, suggesting that the rules have little or no discriminatory value in this range. Moreover, without the help of menu labeling, consumers may still underestimate the total calorie content of restaurant meals or not know how

that number relates back to their daily energy needs. While many Americans may already be making choices between low- and high-calorie foods based on their current nutrition knowledge, menu labeling will allow them to refine their choices.

Menu Labeling Could Impact Consumer Behavior in a Variety of Ways

Obtaining calorie information and using it are two separate actions. Food choices made while eating out reflect a variety of factors: taste, desire to indulge, time constraints, and the economists' favorite—price. In interviews conducted in Philadelphia, PA, in 2011 at a full-service restaurant subject to local menu-labeling requirements, 76 percent of interviewees noticed the calorie labels, and 26 percent reported that this influenced their ordering decisions. In Pierce County, WA, 71 percent of customers interviewed at full-service restaurants participating in voluntary menu labeling in 2009 noticed the calorie information, and 20.4 percent claimed to have chosen a lower calorie entrée. Other studies have found that responses to calorie disclosure on menus and menu boards varied from consumers ordering foods with an average of 155 fewer calories to no decrease in calories ordered.

If consumers are not swayed by menu labeling to choose lower calorie foods and beverages when they eat away from home, could it still motivate them to reduce their calorie consumption elsewhere throughout the day? The statement about an individual's daily calorie needs that is required to be displayed on menus and menu boards may have an impact on total daily calorie consumption. A study by researchers at Yale University found that consumers whose menus included a similar statement did reduce their calorie intake over the course of the entire day, including foods consumed after leaving the restaurant.

Recipe adjustments offer another avenue for dietary improvements. Mandatory labeling of menu items and dishes could encourage restaurants to introduce new, lower calorie foods and reformulate existing menu items to be lower in calories. Many restaurant chains are offering “skinny” menus, with foods that have been sautéed rather than fried, less rich sauces, and smaller portions. Such changes to restaurant menus could ultimately benefit all consumers. New low-calorie entrees and side dishes and “lighter” traditional favorites will offer all consumers—not just those who read and use nutrition labels—healthier options when dining out.

This article is drawn from...

[Menu Labeling Imparts New Information About the Calorie Content of Restaurant Foods](#), by Hayden Stewart, Jeffrey Hyman, and Diansheng Dong, USDA, Economic Research Service, December 2014

[Consumers' Use of Nutrition Information When Eating Out](#), by Christian Gregory, Ilya Rahkovsky, and Tobenna Anekwe, USDA, Economic Research Service, June 2014

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[Nutrition Labeling in the Food-Away-From-Home Sector: An Economic Assessment](#), by Jayachandran Variyam, USDA, Economic Research Service, April 2005