Economics of Food Labeling. By Elise Golan, Fred Kuchler, and Lorraine Mitchell with contributions from Cathy Greene and Amber Jessup. Economic Research Service, U.S. Department of Agriculture. Agricultural Economic Report No. 793.

Abstract

Federal intervention in food labeling is often proposed with the aim of achieving a social goal such as improving human health and safety, mitigating environmental hazards, averting international trade disputes, or supporting domestic agricultural and food manufacturing industries. Economic theory suggests, however, that mandatory food-labeling requirements are best suited to alleviating problems of asymmetric information and are rarely effective in redressing environmental or other spillovers associated with food production and consumption. Theory also suggests that the appropriate role for government in labeling depends on the type of information involved and the level and distribution of the costs and benefits of providing that information. This report traces the economic theory behind food labeling and presents three case studies in which the government has intervened in labeling and two examples in which government intervention has been proposed.

Keywords: labeling, information policy, Nutrition Labeling and Education Act, dolphin-safe tuna, national organic standards, country-of-origin labels, biotech food labeling

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Elise Golan and Fred Kuchler are economists in the Food and Rural Economics Division, ERS. Lorraine Mitchell is an economist in the Market and Trade Economics Division, ERS, and Cathy Greene is an economist in the Resource Economics Division, ERS. Amber Jessup is an economist at the Center for Food Safety and Applied Nutrition, Food and Drug Administration.

1800 M Street, N.W.
Washington DC 20036-5831

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Summary

Federal intervention in food labeling is often proposed with the aim of achieving a social goal such as improving human health and safety, mitigating environmental hazards, averting international trade disputes, or supporting domestic agricultural and food manufacturing industries. We find that mandatory food-labeling requirements are best suited to alleviating problems of asymmetric information and are rarely effective in redressing environmental or other spillovers associated with food production and consumption.

In this report, we trace the economic theory behind food labeling and present three case studies in which the government has intervened in labeling decisions (nutrition content, dolphin-safe tuna, and organic) and two examples in which government intervention has been proposed (country-of-origin and biotech). We examine how different types of benefit-cost calculations influence the information supplied by private firms, the information required by governments, and the role of third-party entities in standardizing and certifying the veracity of the information.

The costs and benefits relevant to a private firm's labeling decision are reflected in its balance sheet. Assuming that a firm attempts to maximize profits, it will add more information to product packaging so long as each additional message generates more revenues than costs. Firms provide information on all positive attributes that merit the cost. Consumer skepticism, warranties, and competition among firms help to expose many negative attributes about products so that, even in the absence of government intervention, a great deal of product information is revealed.

Firms are sometimes unable to convince consumers of the validity of labeled information. In these cases, the value of the label is diminished. Third-party services could change the private, voluntary labeling decision of firms by either reducing the costs or increasing the benefits of labeling. When these services bolster the credibility of voluntary labeling, they facilitate market transactions and increase market efficiency, in both domestic and international markets. The primary services that third-party entities offer to help strengthen labeling claims are standard setting, testing, certification, and enforcement.

Third-party labeling services can be provided by a wide variety of entities including consumer groups, producer associations, private third-party entities, and international organizations. The government also could play a role in bolstering voluntary labeling by providing some or all of these services. Government-provided services could be funded through user fees or through specific or general taxes. In some cases, government support of voluntary labeling may be a more cost-effective way of delivering credible, relevant information to consumers than mandatory labeling requirements.

The government may decide that some information must be provided on labels. Such a situation is most likely to occur either when the market does not supply enough information to allow consumers to make consumption choices mirroring their preferences (asymmetric information), or when individual consumption decisions affect social welfare in a way that is not reflected in the market (externalities). The costs and benefits relevant to the government's decision to intervene in

labeling are broader than those of relevance to private firms. Benefits may include improved health or environmental quality. Costs may include the government's administrative costs, higher consumer prices, and industry compliance costs. The distribution of these costs and benefits may be as important in determining the desirability of the policy as the level of net benefits.

Policymakers must weigh the benefits and costs of labeling as well as the distribution of benefits and costs to determine whether labeling is a cost-effective policy option. Even if the benefits of mandatory labeling outweigh the costs, however, labeling may not be the best policy option. The government has a number of policy tools at its disposal to correct for asymmetric information and to control externalities (including taxes, education programs, and production regulation). We conclude that labeling may be an appropriate policy tool in the following circumstances:

- *Consumer preferences differ.* Labeling may be preferable to other policy tools if consumer preferences differ widely with respect to product characteristics.

- *Information is clear and concise.* The information on the label must be clear, concise, and informative. Information that is unread or is misunderstood will lead neither to better informed consumption decisions nor to a better matching of preferences with purchases. Unclear information may increase search and information costs.

- *Information on product use enhances safety.* For some products, the manner in which consumers use or consume the product influences the quality attributes of the product. Information that helps consumers avoid or minimize risk is particularly valuable.

- *Costs and benefits of consumption are borne by the consumer.* If the consumption or production of a food creates externalities (that is, affects someone else's welfare in a way that is not reflected in the market), then information-based policies will usually be insufficient to align private consumption choices with socially optimal choices.

- *Standards, testing, certification and enforcement services can be established.* Mandatory labeling will result in confusion and actually increase transaction costs if it is not supported by clear, achievable quality standards; testing services to measure the validity of labeling claims; certification services substantiating the validity of the quality claim; and mechanisms for enforcing labeling rules.

- *No political consensus on regulation exists.* In many regulatory policy debates, there is little consensus on the appropriate regulatory response. Some groups may advocate complete product bans while others advocate no government intervention at all. In these cases, labeling may represent the best compromise solution, both domestically and internationally. Labeling in such instances, however, may provide consumers with little real information, particularly when the lack of political consensus arises from a lack of scientific consensus.

The case studies and examples illustrate the points raised in the theory section. They examine the amount of information that was voluntarily supplied by private firms, the role of third-parties in enhancing the value of voluntary labeling, and the costs and benefits of government intervention in labeling. Each study involves different types of costs and benefits and different sets of political, legal, social, and scientific objectives and considerations.

The case studies and examples illustrate the observation that it is difficult to measure the costs and benefits of government labeling policy. Cost-benefit analyses for the case studies and examples require quantifying such difficult notions as the benefits of a healthier population (nutrition labeling), fewer dolphin deaths (dolphin-safe tuna), and reductions in transaction costs (national organic standards). In every case, the task of actually measuring the costs and benefits of labeling involves difficult methodological and philosophical problems. The examples and case studies also show the potentially far-reaching costs and benefits of labeling, including impacts on industry structure and on food quality and cost.

The case studies and examples also illustrate the observation that the impetus for government involvement in labeling may originate from many different sources, including the government (nutrition labeling), consumer groups (dolphin-safe tuna and biotech), and producer groups (organic labeling and country-of-origin).

The nutrition labeling case study shows labeling is an effective policy tool when consumer preferences differ. Consumers have different concerns about nutrition. The standardized nutrition label provides a large amount of clear, concise nutrition information and allows consumers to make their own choices.

The dolphin-safe tuna case study and the biotech example illustrate the potential power of labeling as a middle ground in international trade disputes. In the dolphin-safe tuna case, labeling, but not banning, was acceptable under provisions of the General Agreement on Tariffs and Trade. In the biotech example, international consensus on biotech regulation has been difficult to achieve, which may explain why labeling continues to be debated.

The dolphin-safe tuna and organic labeling cases illustrate the strong role that the Federal Government may play in setting standards, establishing certification, and providing enforcement mechanisms.

The country-of-origin example highlights the observation that the fact that private firms do not provide information on label may indicate that the information is not of value to consumers. In these cases, there is no reason for the government to establish mandatory labeling requirements. The example illustrates why any proposed government intervention in labeling decisions ought to arise from a demonstrated market failure.

The biotech labeling example illustrates three observations made in the theory section of the report. First, to establish successful mandatory labeling requirements the government must also provide or arrange for standards, testing, certification, and enforcement. Second, labeling of complex, unclear information will not reduce information and search costs. Third, labeling is not the best policy tool for redressing externalities.