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Overview: Commodity Checkoff Programs

Gary W. Williams, Guest Editor and Oral Capps, Jr., Editor

Currently, there are a number of advertising and promotion programs associated with agricultural commodities. 'Got Milk?' 'Pork. The Other White Meat,' 'Cotton: The Fabric of Our Lives,' 'Beef. It's What's for Dinner,' and 'American Lamb from American Land' are examples of messages from various commodity boards who are attempting to impact the demand for their agricultural products. These messages typically are labeled as generic advertising and promotion and the institutional structure for funding them is referred to as commodity checkoff programs. This theme centers attention on why checkoff programs were instituted initially, how program benefits are measured, the costs associated with various programs, the evidence to support their existence, and the legal challenges surrounding checkoff programs.

Commodity checkoff programs are primarily cooperative efforts by groups of suppliers of agricultural products intended to enhance their individual and collective profitability. Virtually every agricultural commodity has some type of organization dedicated to promoting the economic welfare of its producers funded through some form of fee on sales by producers and often others in the marketing chain. The term "checkoff" refers to the collection of a fee and comes from the concept of checking off the appropriate box on a form, like a tax return, to authorize a contribution for a specific purpose, such as the public financing of election campaigns, or, as in this case, the financing of programs to enhance producer welfare.

The funds collected by checkoff groups are used primarily to expand demand (both domestic and foreign) through both generic advertising efforts and the development of new uses of the associated commodities. Although many checkoff programs also fund research intended to reduce production costs and/or enhance yields, the share of their total budgets spent on research is generally much smaller than the share spent on demand-enhancement activities.

Articles in this Theme:

Contributions to the earliest check-off programs were voluntary. These voluntary programs, however, were plagued by the problem of free-riders, which motivated the supporters of some programs to pressure state, and later federal, legislators to provide them with legislative authority for mandatory checkoff contributions. Currently, federal checkoff programs are in effect for beef, pork, soybeans, eggs, cotton, dairy, mushrooms, honey, peanuts, popcorn, potatoes, watermelon, cultivated blueberries, Haas avocados, and mangos. In addition, federal marketing orders for a wide variety of primarily fruits, vegetables, and nuts are authorized to conduct promotion and research programs. Other checkoff organizations operate under state authority. Also, organizations of commodity producers and/or processors, like the Sugar Association, operate generic promotion programs independent of any state or federal authority.

In this issue of *Choices*, several authors explore the purpose, impact, effectiveness, and legal status of commodity checkoff programs. Ward describes the purpose of checkoff programs, as well as the functions and benefits of these programs. Crespi and McEowen subsequently examine the constitutionality of generic advertising and promotion programs. Additionally, they focus on the repercussions of the Supreme Court ruling in May 2005 regarding the beef checkoff program. Wohlgenant deals with the importance

of retail-to-farm price transmission, the nature of checkoff assessments, the effect of supply response, the role of input substitution, the effect of government intervention, the presence of market power, and the industrialization of agriculture in evaluating the economic impacts associated with generic advertising and promotion. Williams and Capps discuss the issues of defining and measuring the effectiveness of checkoff programs. They also center attention on communicating the measurement results to program contributors and stakeholders. Finally, Chung, Norwood, and Ward investigate the degree of producer support for the beef checkoff program.

Gary W. Williams is Professor and Director of the Texas Agribusiness Market Research Center, and Oral Capps, Jr. is Professor and Southwest Dairy Marketing Endowed Chair, Department of Agricultural Economics, Texas A&M University, College Station, TX.

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Commodity Checkoff Programs and Generic Advertising

Ronald W. Ward

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"Beef. It's What's for Dinner." "Got Milk?" "Pork. The Other White Meat." "Flowers. Alive with Possibilities." We have all heard and seen these and similar promotional messages over the years on television, over the radio, and in magazines. Often labeled *generic advertising,* these messages are government-sanctioned but producer-funded efforts to enhance the demand for farm commodities. As opposed to advertising for specific brands of a product by particular producers, generic advertising is generally a cooperative effort of a large group of producers (suppliers) to promote the demand for the homogeneous (similar) product. These advertising messages are funded through an institutional structure known as commodity checkoff programs. Why do the checkoff programs exist? What are the major functions of checkoff programs? What are the economic issues associated with these programs? Have they generated any economic benefits?

The Purpose of Commodity Checkoff Programs

Generic advertising is all about information -- information about a specific commodity and its underlying attributes. Consumers already have a reasonable amount of information about most foods, fibers, and other goods they buy along with some history of use. So even without any additional generic advertising, most checkoff commodities would still be consumed at some level. For example, some amount of milk would still be purchased if all "Got Milk" commercials were stopped! The purpose of advertising, of course, is to generate additional purchases of the product being advertised. How advertising affects consumer purchasing, however, depends on the type of advertising to which the consumer is exposed. Brands and brand advertising messages are intended to direct consumers to a specific product identified within a particular commodity category. To the extent that brands have common attributes and are substitutable, brand messages may increase the total demand for a commodity. Brand messages are intended to highlight differences among product forms making up the commodity group rather than their similarities.

Generic advertising and promotions, on the other hand, focus on those attributes common to the group and those attributes that may not be readily judged without assistance (e.g., nutritional content, origin, or quality assurance). Brands exist when real and/or perceived differences can be achieved. For example, the successful promotion of Angus Beef as a brand requires that consumers perceive the unique attributes of the beef from that breed of cattle. The result is some level of brand identification. A celebrity endorsement may create a perceived difference that translates into brand identity whether or not such a difference actually exists. Within many commodity sectors there is limited product differentiation from producer to producer so that achieving substantial growth in demand through branding generally is not feasible. In this case, demand growth is more readily achieved through enhancing the total demand for the commodity through generic advertising. Of course, demand growth does not assure profitability but is an essential component.

Goods that cannot be differentiated are referred to as *cooperative goods*. For cooperative goods, generic advertising may potentially enhance total demand but should not change the underlying market shares among producers or suppliers. For some goods, consumers may be willing to search out the attributes they desire in a product before making a purchase. Alternatively, they may be willing to experiment with goods to gain a greater understanding of the products attributes (Forker & Ward, 1993.) These

search and *experience* categories provide considerable insight into how receptive and responsive potential consumers may be to an advertising message. Additionally, some products have credence attributes such that consumers must rely on external information to judge a particular product attribute. Claims about antioxidant benefits are a good example of a credence attribute.

Many, if not most, foods, fibers, and goods purchased for their aesthetic value, such as flowers, fit within the *cooperative* and/or *experience* goods categories. Such products lend themselves more to the promotion of the commodity itself (generic advertising) than to the promotion of a specific form or particular attributes of the commodity (brand advertising). For commodities that do not fit well into the *cooperative* and/or *experience* categories, both generic and brand promotional activities are common. The relative intensities between generic and brand promotion for those products then depend on consumers' need for information in general and the ability of the product to achieve some level of brand identity. The meat industry is a good example of this concept where about 80% of beef is non-branded, while more than 80% of poultry is branded (Ward & Ferrara, 2005).

If a product is not differentiable and information is needed, why do producers tend to promote their commodities collectively? The answer is relatively simple: free-riders and the cost of advertising. When advertising of a generic product by any specific producer increases total demand for that commodity, the gains from one producer's advertising may be partially captured by other producers who do not share in the cost of the advertising. These producers get a "free-ride" in terms of increased demand from the promotional efforts by individuals or small groups of producers. This is the classic "free-rider problem" in which everyone shares in the benefits but only a few pay the costs. Also, the cost of sufficient advertising to have a perceptible effect on total demand is generally beyond the means of individual producers. Commodity checkoff programs were designed to deal with these two problems - minimizing the effect of free-riders and creating sufficient resources to pay for expensive media advertising. Removing potential free-riders and creating a pool of funds earmarked for generic advertising messages is precisely the intent of the national legislation for supporting commodity checkoff programs and an important objective of many federal and state marketing orders. Commodity checkoff authority granted through the federal enabling legislation provides the vehicle for collecting assessments to fund generic advertising programs.

Currently, there are 17 active national generic promotion programs for agricultural goods and an additional 35 or more operating under federal market orders (AMS-USDA, 2005). Also, there are many additional state programs designed to promote agricultural commodities. Similar programs are also in operation for many nonagricultural goods ranging from tourism to propane. Common characteristics among most of these programs include efforts to maintain product identity through the supply chain from producer to consumer and the need to provide information to existing and potential consumers continually. A number of these generic advertising programs require mandatory participation by all producers of the commodity through an assessment on those producing and supplying the product and are subject to close government oversight.

The Functions of Commodity Checkoff Programs

While checkoff programs are diverse and the goals dependent on the situations for each commodity, there are several common functions found across the generic advertising programs. As indicated in Figure 1, all checkoff programs must: (1) entail an administrative structure, (2) have a precise message and focus, (3) show economic benefits, and (4) exhibit fairness and equity in setting the program focus and resulting distribution of benefits. A problem within one or more of these four functions is a signal for failure.

Organization and Administration. Nearly all commodity checkoff programs are funded through a unit or value assessment on producers and first handlers (top box of Figure 1). Assessments are generally in the range of less than one percent of the value of the good. Most assessments are on a unit basis with pork being a notable exception. While the day-to-day administrative structures are similar to those of many Boards of Directors, they differ in that either state or federal governments closely monitor the policies and administrative activities. The government's role is essential when individual producers are required to pay assessments based on state or federal enabling legislative authority. Clearly, the authority to impose assessments on producers in an industry must be accompanied by direct governmental oversight. Administrative structures range from very large Boards such as found with the beef checkoff to Boards made up of a few elected or appointed Directors. In every case, the Directors have the authority to

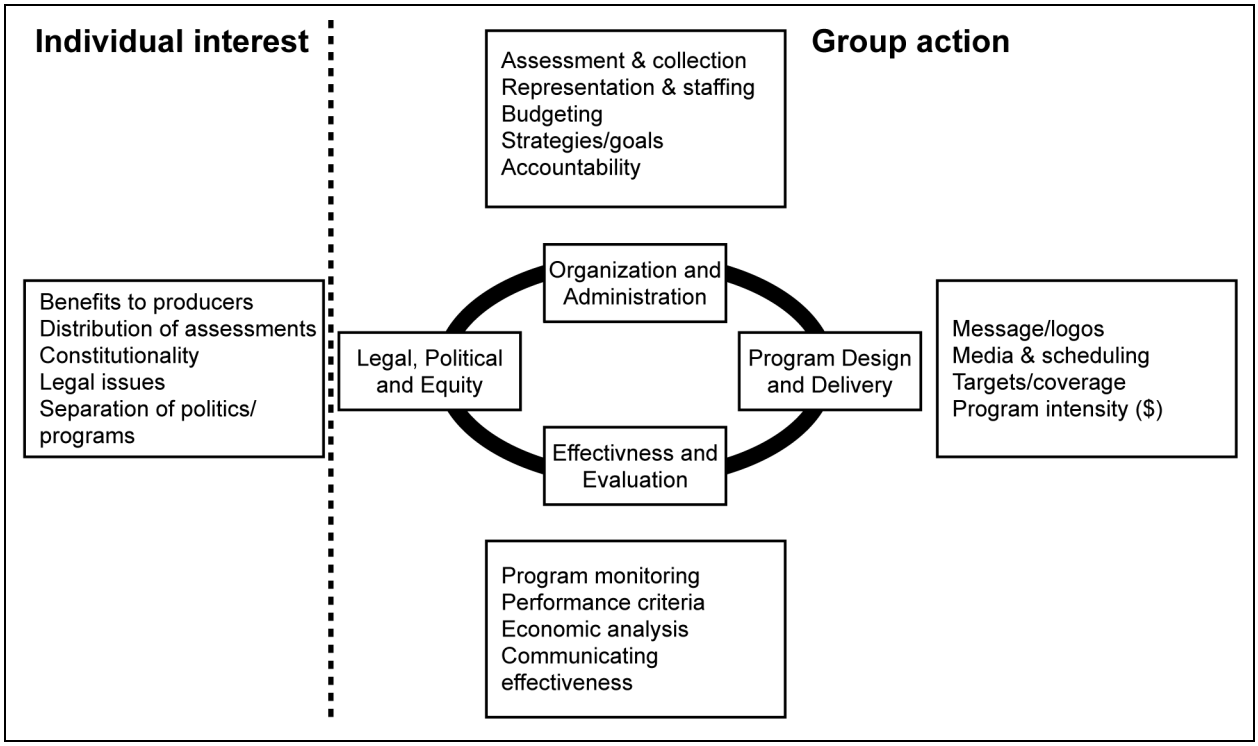

Figure 1. Functions of commodity checkoff programs.

set policies, govern the administrative staff, and set the focus and intensity of the various advertising and promotion programs. Yet, as long as a program is mandatory, actions by a commodity checkoff Board may be subject to governmental veto.

Program Design and Delivery. Advertising messages of the various checkoff organizations are as diverse as the commodities they represent and are closely tied to the attributes of the product, the target audience, and the media used (the right box in Figure 1). Most, if not all, checkoff programs have logos and strap-lines like those at the beginning of this article that convey the intended messages. Usually, the product is for consumption at the retail level and the raw product is easily identifiable throughout the distribution channels. For example, fluid milk or beef at the retail level are directly associated with the farm-gate goods. Messages, target audiences, and the intensity of the promotions are initially developed in close coordination with various advertising agencies. Even so, in many cases, the federal or state-level governments have veto power over the fundamental message(s) being considered. The media used are functions of the available resources and the need for local, regional, or national coverage. Complexities with the message and focus often are associated with the diversity among groups within industries like citrus, where both fresh and processed products are important, and beef and soybeans, where both domestic and export market promotions are funded. Competing interests within a commodity sector often create a challenge in designing and delivering generic advertising messages.

Effectiveness and Evaluation. Moving clockwise around Figure 1, the box at the bottom relates to the economic impact of the generic advertising. To determine the effectiveness of a checkoff program requires the development of criteria for judging performance and methods and data for measuring the impact on demand usually involving some form of statistical analyses. Many commodity groups have turned to econometric modeling as the instrument for determining if their generic advertising messages have had a numerical and statistically significant impact on demand. Most of these models account for the effects of advertising on demand in terms of the dollars spent over an appropriate time interval. They frequently include delayed demand responses and measure both short-term and long-term impacts. These models usually show numerical measures of the advertising impacts on demand and calculate benefit-cost ratios at different levels in the distribution system. Some models first measure demand changes at the retail level and then attempt to determine how gains are distributed through the vertical mar-

ket system back to producers. The measurement of the distribution of gains through the supply chain is a contentious issue and is considered in more detail in the article by Wohlgenant in this issue of *Choices*.

Legal, Political, and Equity Concerns. Referencing back to Figure 1, the top, right, and bottom boxes reflect the collective efforts by a commodity sector to achieve demand changes through an administrative structure that designs and delivers the generic message. In contrast, the last box on the left represents the interests of the individual producer. If a producer feels that his or her share of the gains is not proportional, an equity problem potentially exists and that producer may oppose the program. Equity concerns may relate to the distribution of benefits among producers and the distribution of benefits up and down the vertical market system for the commodity. Opposition to a program may be expressed through administrative and legal channels. Evaluations of these programs are particularly important when addressing equity concerns since it is at the evaluation stage where the benefits and the distribution of the benefits are measured.

Checkoff programs are all about the dissemination of information, and in the last decade, many of these commodity programs have been challenged, not on the equity, but on the constitutionality of the programs relating to speech. Some have argued that mandatory assessments for speech purposes violate the individual's right to freedom of speech under the 1st Amendment to the Constitution. These legal challenges based on the freedom-of-speech premise have worked their way through the court system for many years. A recent Supreme Court ruling on the beef checkoff program basically concluded that the program is government speech and, hence, not subject to the 1st Amendment argument. More details on this and other legal issues related to checkoff programs are highlighted in the article by Crespi and McEowen in this issue of *Choices*. Time will tell if the beef checkoff ruling is the end of the legal challenges to commodity checkoff programs. Historically, the record would suggest that it is not.

Figure 1 reflects the functions common to all checkoff programs, as well as group action versus individual interest. The functions in each box must work for a program to succeed. Because information is always needed, there will always be potential conflicts between the individual's interest and the interest of the industry. One argument is that protecting the individual's rights in terms of speech may prohibit everyone else from speaking. Allowing some individuals not to participate in the cost of checkoff-funded generic advertising to protect their individual rights to free speech, however, gives rise to free-riders. The free-rider problem always occurs as long as consumers cannot differentiate between the goods supplied by producers who pay the assessment and those supplied by producers who opt not to pay. In most cases, consumers probably cannot make the distinction when buying the commodity. At this point, the legal and legislative systems must intervene since relying on economic pressures to support a voluntary program have proven difficult, although possible. The current Flower Promotion Program is a notable case where the industry has moved from a mandatory to a voluntary program.

The Economics of Commodity Checkoff Programs

All generic advertising programs are intended to either enhance or lessen the erosion in the demand for a commodity. Demand is influenced by many factors, including checkoff program advertising and promotion activities. Most of the factors that affect demand, however, are completely outside the control of the industry. Consequently, declining demand does not mean a promotion program has failed because so many factors can work against the best efforts of the industry to promote its products. The evaluation task is to measure the effects of generic efforts in an environment where many demand drivers are changing demand all at the same time. Economists most often turn to statistical models to estimate and isolate the specific effects of different demand drivers and their impacts on the commodity market. Many of the major checkoff programs have developed statistical models that show the demand effects attributable to their generic advertising activities. In fact, checkoff programs established under federal authority are required to periodically measure the economic impact of their programs using appropriate statistical procedures.

While most models used to measure the effectiveness of commodity checkoff programs are tied to the uniqueness of the respective commodity analyzed, they all include some measure of demand, frequently at the retail level. Demand depends on prices, purchasing power, buyer characteristics, product attributes, market conditions, information, and many other factors. Generic advertising and promotion efforts, usually measured with checkoff expenditures, enter these models as a variable

expected to enhance demand over some time period. If consumers respond to the message, some positive increase in demand attributed to the advertising should eventually occur. No consumer response would indicate that the messages have had little to no impact. Determining this advertising response is the single most important step in the evaluation process. Of course, getting to that response level requires an understanding of the checkoff programs, data collection, and careful analysis. With these things in place, individuals responsible for doing the evaluation can usually draw inferences about changes in demand attributable to the checkoff efforts and those attributable to other factors. Shifts in demand may lead to higher prices in the short run and, hence, greater revenues for the industry. Depending on the characteristics of production, storage, and trade flows, supplies may also change. Then any checkoff gains are expressed recognizing both shifts in demand and any changes in supply. The underlying analytics for measuring this process are not easy! As Wohlgenant demonstrates in another article in this issue of *Choices*, the problem is complicated further by determining where in the distribution system these shifts in demand and supply are measured.

By definition, generic advertising should be brand or market share neutral. In other words, generic advertising may increase total demand, but should not result in one firm or group of firms gaining market share over another. For example, generic promotions of flowers should not favor one type of retail sales outlet such as florists over another outlet like supermarkets. Major brands of commodities like Florida orange juice (Tropicana, Minute Maid, and Florida's Natural) would not be expected to lose or gain shares from the generic advertising of Florida oranges or orange juice. If a generic message enhances or reduces one brand share or outlet share relative to others, then a major equity problem occurs, as suggested in Figure 1 (left box). The program is no longer brand (or other segmentation) neutral and support for the program may well eventually decline because of the underlying inequity. Furthermore, if a firm is sufficiently large to effectively promote its own brand and capture the gains, that firm will argue that their contribution to generic promotions could more effectively be used to promote its own brand. In an industry driven by a few major brands, generic promotion programs usually play less prominent roles than brand advertising. In general, the level of concentration and the competitive structure within a commodity sector are major factors determining the usefulness of generic advertising. A few commodity checkoff programs, particularly almonds, provide advertising credits to major brand suppliers who can demonstrate that their own advertising programs enhance demand.

The Benefits of Commodity Checkoff Programs

The literature on economic benefits of commodity checkoff programs is growing and increasingly technical. Every commodity checkoff group struggles with the measurement of benefits and performance of their generic advertising programs and how to best communicate those benefits back to those who are "paying the bills." Economic modeling continues to be the instrument of choice for gaining insight into the economic impact from generic promotion programs. As a rule, benefit-to-cost ratios for generic advertising programs reported by researchers across a broad range of commodities are in the range of 4:1 to 6:1, indicating that for each dollar of promotions at least 4 to 6 times that amount is generated in new revenues, profit, or "economic surplus" to the industry, depending on how the "benefits" are defined in the associated study. This rule seems to be reasonably robust with a reported benefit-to-cost ratio for beef of 5.6:1; pork, 4.8:1; dairy, 4.6:1; flowers, 6.6:1; prunes, 2.7:1 ; eggs, 4.7:1; and processed oranges between 2:1 to 4:1, depending on the models and time period of analysis (AMS-USDA, 2005; Capps, Bessler, & Williams, 2003; Alston et al., 1998; FPO, 2005; Kaiser, 2005; Reberte, Schmit, & Kaiser, 1996; Ward, 2004).

In nearly every one of these studies, econometric models are used to predict demand with and without the generic advertising efforts, which yields the change in demand attributable to generic advertising. Once the generic-advertising-induced change in demand is estimated, the associated gains or losses in revenues, profit, or "economic surplus" (the "benefits") are expressed relative to the advertising effort (the "costs") and reported as benefit-cost ratios. The issue of measuring the benefits to checkoff programs is considered in more detail in the article by Williams and Capps in this issue of *Choices*.

Moving Forward

Checkoff programs have gone through a period of considerable uncertainty in recent years primarily because of conflicting legal rulings related to an increasing number of court challenges to the checkoff system. Now that a final legal ruling on the constitutionality of the beef

checkoff has been handed down by the Supreme Court, many of the legal uncertainties may have been removed. New challenges will likely arise, however, and may well relate to the overall effectiveness and efficiency of the programs and the equity questions. Those types of challenges are more readily addressed with the types of economic models usually used for measuring advertising responses than has been the case for the legal challenges related to constitutionality.

Information is a key ingredient when making buying decisions. Commodity checkoff programs provide a marketing tool for producers to have a voice to inform potential buyers about the attributes and uses of their commodity. Most checkoff issues are not about the need for communicating, however, but about "what is said" and "who says it." Checkoff messages compete for the consumer's attention with the intent to influence buying behavior. Future challenges to checkoff programs most likely lie in the creativity of the message and the delivery process with more targeting to specific potential consumers. The promotion of fresh flowers is an excellent example of a change in strategy from a broad approach with "Mr. Buzz . . . the flower spokesperson or spokes-bee" to now focusing on selected demographics.

For More Information

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Ronald W. Ward (rward@ufl.edu) is Professor, Food and Resource Economics Department, University of Florida, Gainesville, FL.

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The Constitutionality of Generic Advertising Checkoff Programs

John M. Crespi and Roger A. McEowen

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Until recently, the legal status of generic advertising programs seemed questionable. After an initial victory for generic advertising proponents in 1997 in *Glickman v. Wileman Brothers & Elliott, Inc.* (521 U.S. 457 (1997)), the U.S. Supreme Court ruled four years later in *United States v. United Foods, Inc*. (533 U.S. 405 (2001)) that the federally-mandated mushroom advertising program was not part of a larger regulatory scheme (as was present in the 1997 case), and was, therefore, unconstitutional as compelled private speech. To many, the marketing of mushrooms under the checkoff statute at the heart of the United Foods case seemed no different from the way in which other commodities promoted through checkoff programs, like beef and pork, were marketed. After the *United Foods* case, it seemed only a matter of time before all mandatory checkoff programs would be ruled unconstitutional as well.

The Supreme Court did not address in either the 1997 or 2001 cases, however, whether the checkoff-funded generic advertising programs at issue were government speech and, therefore, not subject to challenge as an unconstitutional proscription of private speech under the First Amendment. That question was answered in 2005 when the Court upheld the Constitutionality of the beef checkoff on government speech grounds. The checkoff industry was immediately re-invigorated.

What does this new ruling mean for other checkoff programs? This article reviews recent commodity promotion litigation, speculates on what opponents of compelled support for generic advertising may be planning next, and considers some potential fallout from the recent decision.

The Agricultural Marketing Agreement Act of 1937 (*7 U.S.C. § 601 et seq.*) and several "stand-alone" acts (such as the Beef Promotion and Research Act of 1985, *7 U.S.C. § 2901 et seq.*) establish the federal statutes for checkoff programs. These mandated, grower-funded programs are used for a variety of industry enhancement programs including research, market development, and marketing strategies. The most controversial strategies surround the use of industry funds for generic advertising. Since the 1980s, the generic advertising portion of these checkoffs has been challenged constitutionally on the basis that the mandated programs violate the freedom of speech of producers. Courts have long held that advertising is a form of private speech protected under the First Amendment and that the right to freedom of speech also includes the right not to subsidize a private message with which an individual disagrees (see, for example, *Keller v. State Bar of California*, 496 U.S. 1 (1990)). The programs may be challenged on freedom of association grounds. Like the speech issue, opponents of generic advertising claim that the mandatory assessments compel industry participants to be associated with a particular message (the advertising) with which they do not agree. Over the last two decades, nearly every commodity promotion program in the country has been challenged.

After years of wrangling over the constitutionality of mandated producer-funded generic advertising programs, a case finally reached the U.S. Supreme Court. In 1997, the Supreme Court ruled in *Glickman* that a federally mandated checkoff program for California tree fruits was constitutional. The main issue in the case concerned the amount of regulation that already existed in the California tree-fruit industry. Writing for the Court, Justice Stevens repeatedly stressed the statutory context within which the generic promotion program had arisen and that generic campaigns had to be viewed in light of the regulatory scheme that Congress had put forward:

> "California nectarines and peaches are marketed pursuant to detailed marketing orders that have displaced many aspects of independent business activity that characterize other portions of the economy in which competition is fully protected by the antitrust laws. The business entities that are compelled to fund the generic advertising at issue in this litigation do so as a part of a broader collective enterprise in which their freedom to act independently is already constrained by the regulatory scheme" (*Glickman*, at 457).

The Court then pointed out that there were four characteristics of the California nectarine and peach marketing orders' regulatory schemes that distinguished the orders from other laws that had been found to violate the First Amendment. First, the checkoff programs did not prevent producers from communicating any message to any audience. Second, the programs did not compel handlers to engage in any actual or symbolic speech. Third, the programs did not compel the handlers to endorse or to finance any political or ideological views. Fourth, the programs had antitrust exemptions. The Court stressed that the regulatory nature of the marketing orders for the industries in question required that the generic advertising be judged in a different light from that of other commercial speech cases. Congress had made a regulatory decision that, right or wrong, certain commodities should be marketed jointly. Justice Stevens, writing for the majority, stated:

> "In sum, what we are reviewing is a species of economic regulation that should enjoy the same strong presumption of validity that we accord to other policy judgments made by Congress. The mere fact that one or more producers 'do not wish to foster' generic advertising of their product is not a sufficient reason for overriding the judgment of the majority of the market participants, bureaucrats, and legislators who have concluded that such programs are beneficial" (*Glickman*, at 477).

To many, the issue of mandated promotion seemed to have been decided with the *Glickman* case. However, in November of 1999, the Sixth Circuit Court of Appeals ruled that the Mushroom Promotion Act of 1990 (7 U.S.C. § 6101 et seq.) was unconstitutional because, unlike the marketing orders in *Glickman*, the Mushroom Act was not in the same spirit as the broader, collective regulation that the Supreme Court used to uphold the tree-fruit order (*United Foods, Inc. v. USDA*, 197 F.3d 221 (6th Cir. 1999)). United Foods, Inc., a Tennessee food processor, had challenged the 1990 Mushroom Act on the grounds that the assessments were compelled commercial speech and that the marketing of mushrooms was distinct from the marketing that existed in the California tree-fruit industry in the *Glickman* case.

The attorneys for United Foods used a very interesting argument to distinguish the mushroom industry from the tree-fruit industry. Focusing on the language of Justice Stevens' opinion concerning regulation and compelled association, they emphasized that the regulatory environment that justified the tree-fruit order was almost completely absent in the mushroom industry. The Court of Appeals found this limited-regulation argument persuasive. Writing for the majority, Judge Merritt stated: "The Court's holding in *Glickman*, we believe, is that nonideological, compelled, commercial speech is justified in the context of the extensive regulation of an industry but not otherwise" (*United Foods, Inc. v. USDA*, 197 F.3d 221 (6th Cir. 1999), at 224). In other words, without the extensive regulation present in the tree-fruit marketing orders, there was no justification for any further limits on compelled speech.

On appeal, the U.S. Supreme Court upheld the Sixth Circuit's ruling in 2001. Writing for the majority, Justice Kennedy pointed out the differences between the 1997 tree-fruit case and the mushroom case: "The program sustained in [*Glickman*] differs from the one under review in a most fundamental respect. In [*Glickman*] the mandated assessments for speech were ancillary to a more comprehensive program restricting marketing autonomy. Here, for all practical purposes, the advertising itself, far from being ancillary, is the principal object of the regulatory scheme" (*US v. United Foods, Inc*. 533 U.S. 405 (2001), at 411-412). Thus, as long as the generic advertising is part of a broader regulatory scheme (like the marketing orders for fruit), the assessments pass constitutional muster. However, if generic advertising is the primary purpose for collecting the assessments, the assessments then violated the First Amendment. It did not take long for opponents of other mandatory checkoff programs, including the beef checkoff program, to adopt the strategy that was successful in the *United Foods* case. The Beef Promotion and Research Act ("Beef Act," 7 U.S.C. § 2901 et seq.) was passed by Congress as part of the Food Security Act of 1985 (16

U.S.C. §§ 3801-3862). Under the Beef Act, the Secretary of Agriculture is directed to issue a Beef Promotion and Research Order and appoint a Cattlemen's Beef Promotion and Research Board which imposes a $1 per head checkoff on all sales or importation of cattle. This assessment then is used to fund such things as beef promotional activities, which are designed by the Operating Committee of the Beef Board and approved by the Secretary of Agriculture.

Citing *United Foods*, the trial court ruled in 2001 that the beef checkoff program was unconstitutional (*Livestock Marketing Assoc.* (*LMA*) *v. USDA*, 132 F. Supp. 2d 817 (D. S.D. 2001)).[1] In this case, the government's argument that the beef checkoff was government speech was rejected by the trial court. On appeal, the United States Court of Appeals for the Eighth Circuit affirmed (*LMA. v. USDA*, 335 F.3d 711 (8th Cir. 2003)). The U.S. Supreme Court subsequently agreed to hear the case.

Meanwhile, another case against the Beef Act was winding its way through the federal courts. In November 2002, the Federal District Court for Montana held that the beef program "creates programs where the government utilizes private cattlemen to disseminate a single message, a message prescribed by Congress and the USDA" (*Charter v. USDA*, 230 F. Supp. 2d 1121 (D.Mont. 2002)). In the *Charter* case, the District Court held that the government is making the speech *through* the cattlemen rather than *for* the cattlemen and, as such, the speech was government speech, not individual or private, commercial speech. Thus, the advertising did not implicate the plaintiffs' First Amendment rights. The *Charter* case was appealed to the U.S. Court of Appeals of the Ninth Circuit.

Before the Ninth Circuit ruled on the *Charter* appeal, the Supreme Court rendered its opinion in the *LMA* beef case. In a 6-3 ruling, with the majority opinion written by Justice Scalia, the Court upheld the beef checkoff on the grounds that the program was government speech (*Johanns, et al. v. LMA*, 544 U.S. 550 (2005)).

Why the change? In the majority's opinion, the beef checkoff case revolved around the question of whether the statutory language of the Beef Act created an advertising program that could be classified as government speech. Thus, as Justice Scalia explains, "We have not heretofore considered the First Amendment consequences of government-compelled subsidy of the government's own speech."

While the government speech doctrine is fairly new and not well developed, prior Supreme Court opinions (not involving agricultural commodity checkoffs) indicated that to constitute government speech, a government mandated program must pass three tests. First, the government must exercise sufficient control over the source of the message to be deemed ultimately responsible for the message. Second, the main purpose of the message and the program must be identified as the government's. Finally, the source of the assessments must come from a large, nondiscrete group. It was believed by many that the beef checkoff would have a hard time overcoming this last test because the source of the funding, cattle producers, seemed to be a rather discrete, identifiable group. The rationale behind this third test is that courts have ruled that greater care needs to be taken when the government seeks to tax individuals or groups to pay for messages. The broader the source of the financing, the more diluted is the governmental infringement on individual rights.

Justice Scalia, writing for the majority, opined that the first two tests were satisfied because Congress has provided the rationale for a compelling state interest and instructed the Secretary of Agriculture to both impose the order, as well as oversee the actions of the Beef Board and the program's Operating Committee. While the opponents of the beef advertising program had argued that the Operating Committee was a nongovernmental entity and, thus, the advertising cannot be considered government speech, the Court rejected this premise: "The message of the promotional campaigns is effectively controlled by the Federal Government itself. The message set out in the beef promotions is from beginning to end the message established by the Federal Government.... Congress and the Secretary have set out the overarching message and some of its elements, and they have left the development of the remaining details to an entity whose members are answerable to the Secretary.... Moreover, the record demonstrates that the Secretary exercises final approval authority over every word used in every promotional campaign" (125 S.Ct. 2055 at 2063 (2005)).

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1. *In October 2002, a U.S. district judge in Michigan, Richard Enslen, also citing United Foods, ruled that similar legislation for the pork checkoff program was not only unconstitutional but "rotten" as well (Michigan Pork Producers Association v. Campaign for Family Farms, 229 F. Supp. 2d 772 (W.D. Mich. 2002)) and struck down the entire pork checkoff, including the portions for research and education.*

As to the final test regarding the source of the assessments, Justice Scalia argued that the compelled assessments, in fact, are unaffected by whether the funds are raised through general or targeted assessments. The dissent argued that this final test was key to the Act's being unconstitutional as the Act did not establish sufficient democratic checks. With this majority ruling, however, the Court eliminated this last test entirely. As Scalia opined, "Citizens may challenge compelled support of private speech, but have no First Amendment right not to fund government speech. And that is no less true when the funding is achieved through targeted assessments devoted exclusively to the program to which the assessed citizens object."

One First Amendment issue that was not addressed was the association issue. Most beef checkoff advertisements are credited to "America's Beef Producers," which may give the impression that the objecting cattle producers endorse the message. The majority examined only the language of the Act and concluded that because the statute does not require this attribution, the Act is not invalid on its face. However, the Court did note that they could not determine whether association rights were being violated because the record before them did not contain evidence that the ads were being associated with the plaintiffs. Such an argument was not part of the beef challenge, but is part of a pending challenge of the similar pork checkoff. In the pork case, the challenge is whether the government can compel producers to belong to a particular group. Previous rulings by the Supreme Court have held that Freedom of Association includes the right not to associate. As this question was not part of the beef checkoff case, the Court never ruled on it. So, a checkoff program that is found to constitute government speech could still be found unconstitutional on freedom of association grounds.

An interesting question is whether the majority opinion was, in reality, a minority opinion as far as the government speech argument goes. Two of the six Justices who formed the majority, Justice Ginsburg and Justice Breyer, concurred with the majority opinion as an acceptable decision, though they disagreed with the rationale. Justice Ginsburg wrote separately that the Act was constitutional, but did not agree that the beef checkoff constituted government speech. Justice Breyer joined the majority, but wrote separately that the checkoff was an acceptable form of government regulation; hence the government speech issue was not pertinent for its constitutionality.

What are the implications of the Supreme Court decision on the beef checkoff program for commodity checkoff programs in general? In one sense, it could be argued that neither *Glickman* nor *United Foods* are relevant anymore in determining the constitutionality of a checkoff program. After the *United Foods* ruling, supporters of generic advertising tried to argue that their industries were more like that of the California tree-fruits, while their opponents argued that the industries were more like those of the mushroom industry. Because of this new ruling on the beef checkoff, deciding whether a program is pertinent based upon the degree of regulation in an industry no longer seems important *if* the advertising funded can be considered government speech. However, the fact that only four of the Justices actually saw the checkoff programs as government speech and that two of these, Chief Justice Rehnquist and Justice O'Connor, are no longer on the Court, makes the relevance of the earlier decisions a bit murky.

Another implication of the beef case ruling is that, since checkoff messages may be considered government speech, much more regulatory oversight by the Secretary of Agriculture over all programs may be inevitable because failure to sufficiently monitor the programs may lead to lax oversight over promotional messages. Claims that a program is not being run as a government program would most likely blossom into further legal battles as to whether a program is in line with Congress' intent and whether or not the operating committee is sending an approved message. Generic advertising done by a program operating without sufficient oversight, therefore, may be seen as infringing on some participants' First Amendment rights.

Finally, for those thinking that the ruling will be limited to checkoff programs, a 2006 opinion of the United States Court of Appeals for the Sixth Circuit is worth watching. In 2003, the Tennessee legislature authorized sales of a specialty license plate with a "Choose Life" logotype with half of the profits going to a private organization, New Life Resources, Inc. At the same time, the legislature denied authorizing a prochoice specialty license plate at the request of Planned Parenthood of Tennessee. Consequently, the American Civil Liberties Union of Tennessee sued, challenging the Act as unconstitutional. The Trial Court agreed but, based on the LMA beef case, the Appellate Court reversed (*ACLU of Tennessee, et al. v. Bredesen*, 441 F.3d 370 (6th Cir. 2006)). Citing the Supreme Court's beef checkoff decision, the Appeals Court noted that the "Choose Life" license plate

was a government-crafted message where the legislature, like the Secretary of Agriculture in the checkoff program, had retained the right to approve the message even though the design and message itself was developed by a private organization. The Court also cited the beef case in holding that dissemination of a government-crafted message by a private organization did not require the views expressed to be neutral. The U.S. Supreme Court has declined to hear the case. Clearly, the government speech doctrine set in motion by the Supreme Court's recent beef checkoff ruling may very well have repercussions far beyond the scope of agricultural enterprises.

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John M. Crespi (jcrespi@agecon.ksu.edu) is Associate Professor, Department of Agricultural Economics, Kansas State University, Manhattan, KS. Roger A. McEowen (mceowen@iastate.edu) is Leonard Dolezal Professor in Agricultural Law, Iowa State University, Ames, IA.

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Retail-to-Farm Transmission of Generic Advertising Effects

Michael K. Wohlgenant

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The efficacy of commodity checkoff programs, especially the effects of generic advertising programs, on producers' welfare has received much attention by agricultural economists, commodity groups, and legal observers. At the center of the debate has been the question of whether producers are better off under a voluntary or mandatory checkoff program. Allocation of checkoff funds for generic advertising under a voluntary program often is characterized as a free-rider problem because producers have an incentive not to participate and free ride on those who choose to contribute, thereby resulting in failure of the program to produce enough funds to support advertising that benefits all producers. Opponents of mandatory checkoff programs generally have argued that such programs violate the principle of economic freedom. Not surprisingly, adjudication has, and continues to this day, to surround many of these programs. While some proponents of checkoff programs believe the argument for eliminating free-ridership is necessary to mandatory programs, whether in fact individual producers are better off under a mandatory program is still an open question.

There is much debate in the agricultural economics literature about the relative importance of generic advertising compared to other factors influencing demand for commodities. Cross-commodity effects (the so-called "spillover" effects) of generic promotion, for example, are frequently ignored in analyses of the effectiveness of commodity promotion. These effects can be important because increased beef promotion, for example, can reduce poultry consumption; in turn, reduced poultry demand can cause the demand for beef to decline, thus subtracting from any direct effect of beef promotion on beef demand (Brester & Schroeder, 1995). Piggott, Piggott, and Wright (1995) derive the economic determinants of cross-commodity impacts and show specifically how returns in an isolated market are dependent upon cross-commodity effects. Other market characteristics also can determine how generic advertising affects the demand for a commodity. For example, Kinnucan et al. (1997) show that the effects of generic advertising on meat demand are highly sensitive to health effects. They conclude that if variables accounting for health information about cholesterol and other information about red meats are included in a regression analysis to measure the demand effects of generic advertising, the measured impact of the advertising on meat consumption is smaller. Brester and Schroeder (1995) find that accounting for brand advertising also leads to smaller measured effects of generic advertising on meat consumption. Whether or not the measured effects of advertising are statistically significant also has not been adequately addressed (Alston, Chalfant, & Piggott, 2000; Davis, 2005). However, a review of the literature does indicate generally high point estimates of the return to generic advertising, ranging from 2:1 to 10:1 for each dollar invested in advertising.

Even with generally high estimated rates of return to advertising, a number of producer groups in recent years have expressed dissatisfaction with checkoff programs and have called for either new referendums or legal action to eliminate mandatory programs (Becker, 2004). If rates of return to commodity advertising are really so high, why do we see dissatisfaction among producers about mandatory checkoff programs? It may be that the published rates of return to generic advertising are overstated because some critical factors important for understanding how farmers' returns are affected by generic advertising have been neglected.

The Importance of Retail-to-Farm Price Transmission

For the most part, research has not focused on one very important aspect of estimating the rates of return to advertising - the retail-to-farm price transmission. Usually aggregate disappearance data are used to estimate advertising elasticities and price elasticities of demand which are then used to calculate how much of a change in retail price can be attributed to a one dollar increase in advertising, holding the quantity of the commodity produced fixed. A critical assumption usually made in such analyses (either implicitly or explicitly) is that that there is a one-to-one transmission of changes in prices at the retail level back to the farm level so that returns in dollars at the retail level measure the same return as at the farm level. An additional assumption usually made is that producers do not have enough time to alter production decisions in response to an advertising-induced price increase so that supply can be regarded as fixed. Certainly both of these assumptions are questionable and can have serious consequences for the measuring the returns that producers can expect to receive from spending money on generic advertising.

Conceptually, whether or not the farm-level response to retail-level generic advertising is likely to be the same as the retail-level response depends primarily on the nature of the retail-to-farm price transmission occurring in those markets (Forker & Ward, 1993, p. 55). There are at least six reasons why the farm-level effects of retail-level generic advertising may differ from those that may occur at the retail level: (a) non-uniform checkoff assessments; (b) non-zero supply response of producers; (c) input substitution between raw product and marketing inputs; (d) government intervention; (e) market power; and (f) the influence of contracting and/or vertical integration.

The Nature of Checkoff Assessments

In part, the farm-level response to generic advertising depends on how the checkoff assessment is levied. If the assessments are uniform across producers, then the net farm-level price effects resulting from advertising-induced demand shifts at the retail level will be the same across producers, assuming the commodity produced is homogenous and producers are price takers (Forker & Ward, 1993). However, if the assessments are not uniform or qualities of the product differ across producers, then per unit benefits will not necessarily be equally distributed across producers. Indeed, most commodities are produced where producers receive either premiums or discounts for their products. Thus, a constant per unit assessment (e.g., $ per cwt produced) can shift the distribution of advertising gains from low-quality to high-quality product suppliers, or vice versa.

The Effect of Supply Response

The retail-to-farm price transmission of advertising can be sensitive to the length of time required for producers to respond to higher farm prices induced by additional generic advertising. Most agricultural commodities have demand curves that are inelastic. The percentage change in market price resulting from a one percent increase in advertising is equal to the advertising elasticity divided by the sum of the supply elasticity and the absolute value of the elasticity of demand. If the absolute value of the elasticity of demand is 0.5 and the supply curve is upward sloping with an elasticity of, say, 0.5 rather than perfectly inelastic as is often assumed, then the percentage increase in price from a one percent increase in advertising would be half what would have been calculated. With a supply elasticity of 1, the percentage price increase would be cut by a factor 3. Therefore, it is not hard to see how a calculated rate of return to generic advertising of, say, 2:1 could actually be 1:1, or even less if the supply response to the advertising-induced price increase is taken into account.

The preceding analysis assumes that the checkoff assessment is a lump sum tax. If the assessment is a per unit fee, which is frequently the case, then the effect of the supply elasticity is mitigated to some extent because a per unit assessment offsets, at least partially, the direct effect of increased industry output on output price by shifting the tax onto consumers. Indeed, Kinnucan and Myrland (2000) show that these two effects just offset one another in the single product case when determining the optimal checkoff rate. However, with multi-product industries, the indirect and direct effects may not be equal. Thus, the sensitivity of the retail-to-farm price transmission to the magnitude of the supply elasticity depends on the nature of the checkoff; that is, whether the assessment is a lump sum or a per unit fee.

The Role of Input Substitution

Another potentially important parameter affecting the retail-to-farm price transmission of generic advertising is input substitution between the raw agricultural product and marketing inputs in producing the final composite food product. The input substitution issue is important first of all because a small degree of substitutability can lead to a substan-

tial reduction in the retail-to-farm transmission of advertising effects (Wohlgenant, 1993). Second, input substitution has been found to be significant and important for a wide variety of agricultural commodities (Wohlgenant, 1989). Often the assumption is made that the final retail product (beef, for example) is produced using fixed proportions of the raw material (cattle in this case) and marketing inputs which may be reasonable for an individual firm in the short run. However, firms differ in their "recipes" for producing products from raw materials. A higher relative raw material price will induce firms with technologies using less of the raw material to produce a larger share of industry output, causing the amount of the raw material per unit industry output to decline. In addition, many final products we analyze (like beef) are really composites of disaggregated products (steaks, roasts, ground beef), so that product substitution may occur in response to advertising even when there is no substitution between the raw material and marketing inputs in producing a single good (Wohlgenant, 1999). If no provision is made for the possibility of such product substitution, but rather the product (beef) is treated as a single composite good, then what we observe as input substitution may really be a combination of substitution between the raw product and marketing inputs and changes in the composition of the composite retail commodity produced (Wohlgenant, 1999). Higher cattle prices, for example, induced by increased generic advertising, lead the marketing sector to produce higher-value products; that is, products containing less of the now relatively more expensive raw product. For some commodities like dairy, this change in product composition may be quite extensive because of the wide variety of dissimilar commodities produced from milk (fluid milk, cheeses, butter, yogurt, frozen dairy products). The bottom line is that because of the relatively inelastic supply of the agricultural raw material, an increase in demand for the end product induced by generic advertising increases the relative price of the agricultural raw material and induces substitution away from the raw material toward marketing inputs so that the net effect on farm price may be less than would be the case if there was one-to-one transmission of retail demand increases to the farm level.

To demonstrate the importance of input substitution, I have calculated the retail-to-farm price transmission coefficients for beef, pork, poultry, and dairy presented in Table 1. These coefficients are calculated by dividing retail own-price elasticities by own-price elasticities of derived demand for the same commodities, and then multiplying these numbers by average values of the farmer's share of the retail dollar as demonstrated in Wohlgenant (1993). If the coefficients were to equal 1, there would be a one-to-one transmission of the price effects of generic advertising from the respective retail markets down to the farm level. However, because the coefficients are actually all less than 1 for all these commodities, a one cent increase in retail price translates into less than a one cent increase in farm price, holding the supply of the farm product fixed. In the case of beef, for example, a one cent increase in retail price from advertising translates into a 0.67 cent increase in the farm price. The very small transmission elasticity of dairy, 0.16, suggests that factors other than input substitution may be at work.

Why don't more studies of generic advertising make the distinction between retail and farm level effects if transmission effects are so much different than one? The answer, in part, is that many analysts fail to appreciate the limitations of the disappearance data published by the USDA. These data, while derived very carefully and useful for many purposes, are best viewed (as the name implies) as production data rather than as consumption data. The apparent consumption data are derived as production plus adjustments made for net exports and changes in inventories. The resulting numbers are multiplied by fixed input-output coefficients, reflecting loss in processing, to arrive at figures to estimate the amount of the raw material "disappearing" into the marketing channel that ultimately is consumed. The main problem with using these numbers to represent consumption is that one has to assume that, for example, a pound of hamburger is valued the same as a pound of steak to the consumer which obviously is not the case. A preferable estimate of consumption would be a constant dollar measure where each component of the composite quantity is weighted by a fixed price (Nelson, 1991). The error in using simple sum quantities of meat can be quite large (Brester and Wohlgenant, 1993). Researchers using disappearance data may come closer to

Table 1. Estimates of retail-to-farm transmission of generic advertising for beef, pork, poultry, and dairy.

Commodity	Increase in farm price from one cent increase in retail price from advertising
Beef	0.67
Pork	0.69
Poultry	0.90
Dairy	0.16

Note: Estimates assume fixed supply and are calculated from Wohlgenant (1989).

estimating the true elasticities by specifying and estimating wholesale level or farm level demand functions, rather than consumer demand functions.

The Effect of Government Intervention

Government intervention in commodity markets can also affect the retail-to-farm price transmission of advertising. The dairy industry is a case in point where the dairy price support program occurs in wholesale markets, causing derived demand for milk at the farm level to follow one regime if the price is set by the wholesale market for manufactured goods or another regime if the price is set by the support prices for cheese and/or butter. The effect of government intervention in dairy markets is to cause derived demand overall to be more elastic (Wohlgenant & Clary, 1993). On average, we would expect the retail-to-farm price transmission from advertising to be reduced as a result of government intervention. Therefore, the small coefficient observed empirically (Table 1) may be explained in large part by government intervention in dairy markets. Another example might be cotton (Murray et al., 2001) where the interaction of agricultural policy, international trade, and markets has led to situations during some time periods in which the farm price has been unaffected by demand shifts, including any increases from generic advertising.

The Presence of Market Power

The presence of market power in the processing/marketing sector can affect retail-to-farm price transmission of advertising. If there is a wedge between price and marginal cost caused by market power and this wedge (which would be positive and larger than 1) is constant, then market power acts much like the effect of input substitution. The overall effect in this case is to cause the derived demand elasticity for the agricultural raw material to be larger in absolute value (Wohlgenant and Piggott, 2003). Therefore, the effect of market power in this case would be to lessen the retail-to-farm price transmission of advertising. An important question is how significant does market power have to be to have an economically important effect on retail-to-farm price transmission? A simulation analysis conducted by Wohlgenant and Piggott suggests that market power is not as important in the retail-to-farm price transmission of advertising as other more fundamental market determinants. In particular, they show that the impact of advertising on retail-to-farm price transmission assuming some level of market power is indistinguishable from that obtained assuming price-taking behavior. In fact, the simulation results show that the results are most significantly affected by supply response and input substitutability between the raw product and marketing inputs. Kinnucan, extending the analysis to market power in both the output and agricultural raw material markets, arrives at a similar finding that optimal advertising intensity is extremely sensitive to input substitution but not to market power.

The Industrialization of Agriculture

In recent decades, the agricultural processing and marketing sectors have undergone unprecedented organizational and structural changes. Increased vertical coordination through contracting and increased vertical integration upstream into agricultural production have been pervasive in livestock and fruit and vegetable industries and may affect the retail-to-farm price transmission of advertising. In particular, increased contracting and ownership of livestock by processors (so-called "captive supplies") allegedly has created market power for livestock processors in procurement of animals from the spot market. If true, then the transmission of generic advertising to producers may have been affected, although how and in what way are questions that have not been addressed.

One way in which the transmission of advertising may have been affected by the industrialization of agriculture is through its distributional effects on producers. Vertical integration and contracting are characterized by much more quality differentiation than one might find on the spot market (Goodhue and Rausser, 2003). Moreover, some companies are not only integrating upstream into production but downstream into retail outlets with branded products so that generic advertising in some instances may work against these firms. Thus, movement toward branded products and increased vertical integration downstream may lead to less support for commodity checkoff programs that fund generic advertising.

Conclusions

The evaluation of the economic effects of generic advertising on prices and producer welfare is an area of research that has occupied a lot of attention. Despite the amount of econometric research indicating high rates of return to generic advertising, there is disenchantment and disbelief among some producers and commodity groups as to whether producers actually benefit from generic advertising. More accurate measurement of the farm-level effects of

retail-level generic advertising must account for various factors that influence the transmission of retail demand changes from advertising to the farm level. Six of the potentially most important of these factors are: (1) non-uniform assessment of the checkoff program, (2) non-zero supply response of producers, (3) input substitution between raw product and marketing inputs, (4) government intervention, (5) market power, and (6) influence of contracting and/or vertical integration. Which of these different factors is most important cannot be determined conclusively because the answer depends upon the particular commodity under investigation. However, research to date suggests that input substitution, government intervention, and contracting and vertical organization are generally the factors with potentially the most important effects on the transmission of the retail-levels effects of advertising down to the farm level. The importance of input substitution in estimating returns to advertising suggests that an understanding of the nature of the production process for converting raw food materials into the myriad of final consumer products is essential to understanding how generic advertising is transmitted from retail markets back to the farm level. Future research will need to focus on the issues related to retail-to-farm price transmission if more accurate measures of the return to producers from generic advertising are to be developed.

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Michael K. Wohlgenant (Michael_Wohlgenant@ncsu.edu) is William Neal Reynolds Distinguished Professor of Agricultural & Resource Economics, North Carolina State University, Raleigh, NC.

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Measuring the Effectiveness of Checkoff Programs

Gary W. Williams and Oral Capps, Jr.

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Introduction

All federal and many state checkoff organizations are required to perform evaluations of the effectiveness of their programs periodically. Although some program managers conduct evaluations primarily to satisfy legislative requirements, most recognize the importance of accurate and detailed evaluations of the effectiveness of past promotional activities for successful management of their programs.

Program evaluation usually is thought of as the measurement of program effectiveness; that is, the "metrics" needed to determine how much "bang for the buck" has been generated by the promotion and research, as well as other programmatic activities funded by the commodity organization. In essence, the "metrics" are an after-the-fact assessment of whether the organization funding the program has been "doing things right;" that is, whether the activities in which the organization has invested have been successful in achieving their objectives.

Evaluation also includes an assessment of whether the organization is "doing the right things;" that is, whether the program goals and objectives and the process designed to meet those goals efficiently and effectively lead to the optimum allocation of the program funds. Even if all promotion expenditures are found to generate positive returns, the evaluation results may suggest some reallocation of funds among alternative activities to maximize the returns to the available funds.

Evaluation also has proven to be important in recent court challenges to checkoff programs. As Crespi and McEowen discuss in another article in this issue of *Choices*, the constitutionality of many legislatively-mandated commodity programs has been challenged by some who are required to pay as a violation of their First Amendment rights to freedom of speech. Implicit in the arguments is the question that program evaluations are designed to answer whether the promotion and advertising programs funded by checkoff funds are effective in securing the anticipated benefits for those who pay for the programs.

Defining Checkoff Program Effectiveness

The first step in measuring program effectiveness is to clearly define what "effectiveness" means to the checkoff organization. Whether or not a promotion program can be judged to be effective depends on the objectives of the program. Even though the overall mission or goal of checkoff programs is to enhance the profits of program contributors, most programs define intermediate objectives that serve as indicators of program effectiveness, such as changes in: (1) industry sales, (2) industry prices, (3) industry market share, (4) industry profits, or (5) consumer awareness of a product or of positive product attributes.

Measurement Methods

Once specific indicators of effectiveness are identified, the next step is selecting the appropriate measurement method to match the indicators identified. The mechanism by which a promotion program ultimately impacts the profits of those who pay for the program often is thought to begin with enhancing consumer awareness of the product or product attributes, which is expected to change consumer buying behavior and impact sales and prices which only then will impact contributor profits. In schematic terms:
Promotion → *Consumer Awareness* → *Sales/Prices* → *Contributor Profits*

Consequently, typical approaches to measuring the effectiveness of checkoff programs generally fall into one of three categories: (1) consumer awareness studies, (2) retail sales impact studies, and (3) contributor profit studies. Effectiveness in one category does not necessarily imply effectiveness in other categories. For example, the organization may increase consumer awareness, but not increase either retail sales or profits. By the same token, increases in retail sales may not necessary lead to increases in industry profits.

Consumer Awareness Studies

A primary metric of program effectiveness for many checkoff programs, and particularly those in the early stages of development, is the extent to which promotion activities affect consumer attitudes and awareness concerning their commodities. Most of what is known about consumer attitudes/beliefs regarding specific agricultural commodities has come from "tracking" studies done by market research firms for the corresponding commodity promotion organizations. Consumer attitudes/beliefs regarding specific characteristics of the commodity of interest are "tracked" over time through periodic surveys of consumers. Improvements in attitudes and changes in beliefs consistent with the promotion messages over time are taken as evidence that the promotion program is effective in boosting sales and, ultimately, industry profit.

One problem with these types of studies is that attitudes can be influenced by several factors other than the promotion program so that changes in consumer attitudes/beliefs, as indicated by "tracking studies," cannot always be confidently attributed to the promotion program. For example, even though the "Other White Meat" message of the U.S. pork industry by itself may have had a positive effect on consumer attitudes about pork, consumer surveys might indicate no change or even a negative change in those attitudes/beliefs if public health messages have simultaneously conveyed concerns about the health risks of eating meat.

Even if the promotion successfully changes attitudes, there is no guarantee that the attitude change will translate into increased sales. As a consequence, many researchers have preferred to analyze the direct relationship between promotion expenditures and sales without considering whether the promotion had any impact on consumer awareness or attitudes.

Retail Sales Impact Studies

Early efforts to measure the sales impact of commodity promotion programs relied largely on anecdotal evidence and simple comparisons of gross investments in promotion and gross changes in sales. During periods of rapidly expanding markets and rising prices, this approach can yield some persuasive stories and even more impressive upward-sloping graphical relationships between promotion expenditures and sales. The problem with this approach is that various factors other than the promotion program affect the volume and value of commodity sales, such as relative price changes, agricultural policies, changes in incomes, population growth, competition from other products, and consumer health concerns and demographics, just to name a few. The problem becomes all too apparent in years when markets turn down and prices drop. Program managers find that taking credit for rising demand and prices in good years forces them to take the blame for declining demand and prices in bad years.

Over the years, increasingly sophisticated statistical methods have been developed to isolate and measure the unique contribution of promotion programs to the performance of commodity sales and the profitability of the farm sector. Most common has been the use of econometric models to statistically disentangle the effects of promotion program activities on commodity sales and demand from those of other market forces. Even if the analysis indicates that promotion programs have had a positive and statistically significant effect on market sales, however, the question remains as to whether the increase has been greater than the cost of the program. For that reason, most checkoff organizations are more interested in some measure of return on investment (ROI) rather than the effects of promotion on the level of sales. Consequently, what most studies provide is some Aggregate Measure of the Effectiveness (AME) of checkoff program activities. Unfortunately, the AMEs estimated for checkoff programs often are presented in different forms and calculated in different ways for different commodities, which causes confusion among researchers, as well as among checkoff program managers and stakeholders.

The most commonly reported AME is the benefit-cost ratio (BCR), which is typically calculated in retail sales impact studies as the dollar increase in sales per promotion dollar spent (retail BCR). Because promotion expenditures occur over time and have different effects over their life cycles, the increase in retail sales generated by the program over time often are discounted to present value before dividing by the cost of the program to account for the time

value of money. However calculated, if the BCR is greater than one, the promotion program is deemed "effective" because more than one dollar in sales is generated for every dollar spent. On the other hand, if the calculated BCR is less than one, the program is deemed "ineffective."

Because they provide measures of the "average" return to promotion activities, the usefulness of BCRs for making promotion funding allocation decisions is limited. Thus, some studies report a marginal rate of return (MRR) as a more appropriate ROI concept than a BCR as a measure of the advertising and promotion effectiveness. A retail sales MRR is usually calculated as the percentage increase in sales revenues from a 1% increase in promotion expenditures. Thus, an MRR provides a more accurate indication of the change in total returns that might be expected from a reallocation of funds among competing promotion activities.

While BCR and MRR measures provide some sense of whether a checkoff program has effectively increased retail demand and sales, they provide no clear criteria for judging whether the benefits of a particular advertising program have exceeded the costs sufficiently to warrant continuation of the program. How high must a BCR or MRR be in order to justify a conclusion that the program is "effective"? How high is too high and how low is too low?

Reported BCRs for checkoff programs typically range from about 2:1 to 10:1 (Williams & Nichols, 1998; Kaiser et al., 2005). Does that mean that a checkoff program with an estimated BCR of 10:1 is 5 times more effective than a program with a BCR of 2:1? Are BCR estimates of 50:1 or 100:1 unreasonably high or are those programs just that much more effective than programs with more typical BCRs? How are we to interpret a BCR for a checkoff program at the bottom of or below the typical range? Beyond indicating that the cost of a checkoff program is greater than the returns generated, is there any meaningful difference between a BCR between 0 and 1 and a negative BCR?

The problem is that a typical benefit-cost analysis of a checkoff program's effectiveness fails to address whether or not the program is a "good" investment for those who pay for the program. Even if the estimated BCR from a particular advertising program is estimated to be positive and even higher than those estimated for other advertising programs, what program contributors want to know is whether they could do better with the funds they contribute by investing in other common investment opportunities and realizing an even higher return. If so, then it would likely make little difference to them if the BCR from the advertising program is "positive" if they could keep their money and invest it in other investment opportunities and realize a higher return.

For economists, this issue implies that the fundamental concern in measuring the effectiveness of checkoff programs probably should be the opportunity cost of the checkoff program funds from the collective group. This issue has received relatively little attention in the literature. For program managers, the implication is that more relevant information might be provided by economic evaluations if researchers treated checkoff programs as investment alternatives and calculated how well the various programs fare compared to other investment opportunities available … like buying land or investing in Treasury Bills, etc.

The standard business method for determining the highest yielding investment opportunity is to calculate the internal rate of return (IRR) of the investment over time. In analyzing alternative business investments, the IRR often is referred to as the discounted rate of return, the marginal efficiency of capital, and the yield of an investment. For measuring the effectiveness of a commodity promotion program, the IRR is calculated as the *change* in the future value of the estimated returns to the promotion expenditures over time divided by a *change* in the present value of advertising expenditures expressed in percentage terms. Consequently, the IRR is a dynamic return on investment measure that expresses the estimated *marginal* returns to promotion expenditures (i.e., the percent change in returns from a 1% change in promotion).

In a recent study of the Florida orange juice promotion program, the IRR to Florida orange growers was calculated to be 14.4% over the life of the program (Williams, Capps, & Bessler, 2004). In other words, for Florida orange growers to have done better with the funds they invested in the orange juice promotion program, they would have had to have found an investment alternative that yielded more than 14.4% on average annually over the entire 33-year period of the program. Curiously, we tend to use the IRR method for evaluating investments in research that shift the supply curve, but not for investments, like advertising, that shift the demand curve.

Contributor Benefit Studies

A particular limitation of the retail sales BCR and MRR measures is that they are calculated assuming that nothing, including prices, changes when promotion expenditures

change. Unless one is willing to assume that all the benefits generated in terms of increased retail sales are captured dollar for dollar by producers who pay for the program, an unlikely possibility, such measures are not particularly meaningful as measures of the benefits of checkoff program expenditures to those who pay for the program. Thus, the relevant questions are: (1) what portion of any benefits from shifting the retail demand curve accrues to those who pay for the program? and (2) are those benefits greater than the costs of promotion? For this reason, some studies of checkoff program effectiveness calculate BCRs in terms of additional industry profits (i.e., the increase in industry sales or cash receipts net of additional production costs) or producer surplus generated per dollar invested in advertising and promotion (i.e., a profit BCR or surplus BCR).

Sales impact analyses are designed to determine whether or not past promotion expenditures have effectively shifted out the demand and, therefore, sales. If such analyses conclude that promotion expenditures have not shifted out demand, then it is likely from a statistical perspective that the program has not benefited those who have paid for the program.

However, even if such studies indicate a positive demand impact, the related increase in sales may or may not translate into increased profits of those who pay for the programs for a variety of reasons as discussed by Wohlgenant in another article in this issue of *Choices*. Most importantly, the benefits of the program may be captured by wholesalers, distributors, processors, importers, foreign producers, or others along the commodity supply chain or even in closely related markets that do not contribute to the costs of the program. For example, in an analysis of the Florida orange juice promotion program, the increase in orange juice demand and price generated by the program prompted an increase in orange juice imports, which benefited foreign orange growers and limited the benefits of the program to Florida orange growers who pay for the program.

Measuring the benefits of promotion programs to those who pay for them requires a more sophisticated and dynamic type of commodity market model than used for demand and sales impact analyses. Because most products pass through several stages of processing before reaching the final consumer, the markets associated with these different stages are interrelated at some level. In *vertically related markets*, what happens in one market or processing stage affects all other markets or stages. Furthermore, product processing often results in by-products or joint products that sell in entirely different markets. In *horizontally related markets*, products that are not directly in a processing chain may be considered close substitutes for products in the chain. At the same time, some markets include foreign components. Market supply may include imports and market demand may consist of both domestic and export demand.

The intricacy of the interrelationships among and between markets means that a myriad of factors can affect the transmission of the retail-level effects of checkoff program activities back to those who pay for the program. Once the market for the product has been accurately modeled and the relative roles of the promotion program activities and other market forces at the various levels along the supply chain have been accounted for and incorporated into the model, the process of measuring the benefit of the promotion expenditures to those who pay for the program is done through scenario analysis. This process is accomplished by simulating the model over the historical period *with* and then *without* the promotion expenditures included in the model. The actual historical data are taken to represent the "with promotion" scenario. For the "without promotion" scenario, the level of promotion expenditures is first set to zero in the model in each year over the historical period. The model then is simulated over that period to generate changes in the levels of the production, consumption, trade, and prices that would have existed over time in the absence of any promotion program. The simulated differences between the values of model variables in the "with" and "without" promotion scenarios provide direct measures of the historical effects of the program on the market of the commodity being promoted. The results are used to calculate a BCR or an IRR to represent the estimated change in the aggregate profits of the contributors that is attributable to the checkoff promotion program.

Beyond Measurement

Regardless of how program effectiveness is defined and measured, checkoff programs often face the difficult challenge of "selling" the results to their stakeholders. Despite positive measures of effectiveness, producers and other contributors often find it difficult to understand or believe the results. The primary problem in convincing program contributors that positive evaluations of a checkoff program are meaningful is that, while the *cost* of checkoff programs to each contributor is eminently observable by them, the *benefits* of the programs are not. While contributors can

clearly see the effects of assessments on their bottom lines, they have no way of seeing the portion of their revenues that are directly attributable to programmatic activities.

Evaluations of checkoff programs specifically are intended to measure the portion of revenues at various levels in the industry that can be directly attributable to the checkoff programs. But in doing so, researchers must compare actual revenues or sales over some time period to nebulous, intangible concepts like "what might have been earned or sold in the absence of the program." In other words, the results imply that $2, $5, or $10 for every dollar they were assessed are in their pockets, but they just don't know it because their earnings would have been lower if the checkoff program had not existed. This concept has proved extremely difficult to communicate to producers.

Compounding that problem is the tendency of many checkoff program staffs and boards to oversell the actual and potential impacts of their programs to insure a positive outcome from producer referenda and otherwise justify continuation of their programs. Contributors come to expect large impacts on prices and profits because of the anecdotes they have been told about how successful various activities have been and how large the benefits to them are from contributing to the program. Estimated BCRs much in excess of 1:1 often are taken to imply large absolute impacts of a checkoff program on the market. Nothing could be less true. A BCR of 5:1 results by dividing a $5 billion industry profit benefit by a $1 billion checkoff investment or by dividing a $5 benefit by a $1 investment. For most commodity promotion programs, the value of the expenditures in research and promotion activities is extremely small in comparison to the total value of industry sales. Commodity promotion expenditures generally amount to a fraction of 1% of the total industry sales each year. With such a low level of investment compared to sales, the overall impact of a commodity promotion program could hardly be expected to be significant in a practical sense in its effects on production, prices, sales, and market share even if the impact could be said to be statistically significant.

When producers and other contributors fail to see the large impact on their returns that they have been led to expect, they tend to disbelieve the measured effectiveness of the checkoff program. One potential solution for checkoff program boards and their staffs is to spend more time educating producers on the true potential of their programs. Perhaps checkoff programs would be better sold to contributors as tools to help reduce downside pressure on prices and profits in bad years and contribute to higher prices and profits in good years rather than as panacea to the financial problems they face.

Another potential solution is to focus on appropriate measures of "effectiveness" that more readily convey the success or failure of checkoff programs in meeting their objectives to program contributors. Benefit-cost ratios as measures of effectiveness have often proved to be less than successful in that effort. Further development of the internal rate of return (IRR) methodology could lead to a measure of effectiveness that might be more easily interpreted by program contributors. Strong arguments also can be made for simple price effects. In a competitive industry, producers relate well to changes in prices as a result of intervention.

Summing Up

Measuring the effectiveness of a commodity checkoff program begins with understanding the promotion objectives and then adopting an appropriate measurement technique. For checkoff organizations primarily concerned with positively impacting consumer attitudes and awareness concerning their products, consumer attitude and awareness studies are sufficient for measuring program effectiveness. New checkoff organizations often begin with this objective believing that changing consumer attitudes is the key to changing consumer behavior, positively influencing retail sales, and eventually enhancing the profitability of their industry.

Eventually, however, checkoff organizations must determine whether their promotional efforts have gone beyond any change in consumer attitudes to actually shifting out the demand for their commodities. Sales/demand impact studies are designed to measure the retail level impact of checkoff promotion programs. Such studies often report aggregate measures of effectiveness such as benefit-cost ratios or marginal rates of return. Sooner or later, however, someone is going to ask: "What am I getting for my checkoff contribution?" The answer to such questions requires more complex and in-depth analyses to track the retail level impact of advertising and promotion programs back through the supply chain to producers to measure the effectiveness of retail-level promotion programs in enhancing the profitability and economic welfare of producers and other contributors.

Once the effectiveness of the program has been measured, however, the checkoff program still faces the challenge of communicating the

results to contributors. Even if the program is deemed to be highly effective, contributors are often skeptical of the magnitude of the results. While they can readily observe the costs of the program to them, the benefits generated are an unobservable component of their total revenue stream. Checkoff program boards and staffs often compound the problem by overselling the potential impacts of their programs on demand, prices, and profits, and by implying that high estimated rates of return imply large program impacts on the market. One solution may be for checkoff program managers to sell their programs as collective efforts to enhance positive market pressures and moderate negative market pressures rather than always shifting out demand and boosting prices. Another solution is for researchers to focus on developing measures that more readily convey the effectiveness of checkoff programs such as the internal rate of return.

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Gary W. Williams is Professor and Director of the Texas Agribusiness Market Research Center, and Oral Capps, Jr. is Professor and Southwest Dairy Marketing Endowed Chair, Department of Agricultural Economics, Texas A&M University, College Station, TX.

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Producer Support for Checkoff Programs: The Case of Beef

Chanjin Chung, F. Bailey Norwood, and Clement E. Ward

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Agricultural producers have generated approximately $750 million annually in mandatory checkoff contributions and have invested a majority of these funds in various generic advertising and promotion programs. Over the past decade, a number of economists have studied the economic impacts of checkoff-funded generic advertising programs and found, in most cases, positive net benefits for producers. Nonetheless, as Crespi and McEowen discuss in another article in this issue of *Choices*, mandatory checkoff programs have faced constitutional challenges on the grounds that they violate the individual contributor's right to free speech because the checkoff fees are used for collective advertising and promotion efforts. Even though the recent Supreme Court ruling on the beef checkoff program has apparently settled that question in favor of checkoff programs, the future of all checkoff programs, mandatory or otherwise, depends critically on the support of producers. Under current legislation, the Agricultural Marketing Service (AMS), the USDA division responsible for overseeing commodity checkoff programs, must conduct a national referendum on a checkoff program whenever there are enough petitions from producers, and can terminate programs whenever such referenda find insufficient support from producers.

Support for checkoff programs may vary across farm settings and producers with different attitudes towards such programs. An understanding of the extent to which the support may be affected by various producer characteristics and attitudes should be useful for managing their programs and communicating with stakeholders. A successful checkoff program requires an effective public relations campaign to convince producers that the checkoff is a profitable investment. If program managers could identify producers (by their characteristics and organization affiliation) who are less likely to support checkoff programs, they could better target those groups to enhance support. Eliciting producer attitudes towards the current checkoff could also help improve producer support of checkoff programs. Why do some producers not support the current checkoff? Is a lack of support due to insufficient information about the checkoff? Do producers feel most checkoff benefits are captured by processors, retailers, or foreign exporters?

To answer these questions and other questions about producer support for checkoff programs, a mail survey was conducted using a stratified sample of Oklahoma cattle producers from the United States Department of Agriculture's National Agricultural Statistics Service, (USDA-NASS, 2002). A total of 2,950 Oklahoma cattle producers were selected for the mailing list, ultimately providing 670 usable responses (a reasonable 23% response rate). Producers were grouped by their demographics, organization affiliation, and attitudes. In the survey, a series of questions were asked to collect information about the differences in producer support rates for the beef checkoff program by farm demographics (producer type, size, and affiliation with producer organizations) and producer attitudes toward the current checkoff. The survey procedures followed and the statistical methodology used to analyze the survey results are discussed in detail in Norwood et al. (2004).

Do Farm Demographics Affect Producer Support for the Beef Checkoff Program?

Producer types were categorized in the survey into three groups according to the similarity of production inputs: (1) weaned calf, feeder cattle, or purebred cattle producers (WFP producers), (2) fed cattle producers, and (3) veal

producers. The WFP producers rely heavily on pasture and grazing, while fed cattle producers typically use concentrated grain rations. Veal producers are different from WFP and fed cattle producers due to their use of liquid feed and small calf pens. As summarized in Figure 1, 79% of surveyed producers were categorized as WFP producers, 15% as fed cattle producers, and only 6% as veal producers. The distribution represents overall Oklahoma cattle producers. Support for the beef checkoff program differed somewhat across these three groups (Table 1). Although 52% of both WFP and fed cattle producers indicated support for the checkoff program, a smaller share of veal producers (37%) indicated support.

Respondents were also asked to indicate their farm size by selecting a range of the average number of cattle sold each year. A total of 12% of respondents were categorized as large producers (sales of over 500 weaned calves or 1,000 stocker calves) and the rest were considered small producers (Table 1). The checkoff support rate by large producers was 47%, six percentage points less than that of small producers. This difference, however, was not found to be statistically significant.

About 17% of all respondents were members of the National Cattlemen's Beef Association (NCBA) and 38% were members of the Oklahoma Cattlemen's Association (OCA) (Table 1). The NCBA has a close working relationship with the Cattlemen's Beef Board (CBB), which is responsible for managing the beef checkoff program. In fact, the two organizations are located in the same building, and the CBB hires the NCBA to perform many of its checkoff activities. Therefore, as expected, the support for the beef checkoff was significantly higher among NCBA members than nonmembers (13 percentage points). Not surprisingly, the result was similar for OCA members and nonmembers, suggesting that the national beef checkoff organization works closely with state and national producer affiliate groups. Membership perhaps means more awareness, which translates into more support for checkoff programs among members.

Table 1. Projected support rate of beef checkoff by farm type, size and organization affiliation ($N = 670$).

		% of total	Support rate
Farm type	Weaned calf, feeder cattle, or purebred cattle producers	79%	52%
	Fed cattle producers	15%	52%
	Veal producers	6%	37%
Farm size	Large cow-calf or stocker production	12%	47%
	Small cow-calf or stocker production	88%	53%
Organization membership	National Cattlemen's Beef Association	Yes: 17%	63%
		No: 83%	50%
	Oklahoma Cattlemen's Association	Yes: 38%	62%
		No: 62%	45%

Table 2. Projected support rate of beef checkoff by producer attitudes ($N = 670$).

	% of respondents	Support rate
Were you aware of the recent litigation and court ruling on the beef checkoff before this survey?		
Yes	64%	55%
No	36%	44%
Who do you feel benefits the most from checkoff funding on advertising?		
Cattle producers	10%	76%
Beef processors and retailers	35%	30%
Both benefit equally	42%	76%
Who do you feel benefits the most from checkoff funding on research?		
Cattle producers	18%	73%
Beef processors and retailers	26%	25%
Both benefit equally	37%	73%
How much do you feel the beef checkoff funds benefit cattle and beef producers outside of the U.S.?		
More than U.S. producers	7%	24%
Less than U.S. producers	37%	67%
Equal to U.S. producers	17%	53%

Do Producer Attitudes Affect Their Support for the Beef Checkoff Program?

Producers were also asked about their awareness of the recent litigation and court rulings on the beef checkoff program (Table 2). Only 64% of respondents answered "yes," suggesting that about one-third of the respondents are likely to be detached from current checkoff issues and activities. Are these less informed producers also less willing to support

a checkoff program? The estimated support rates in Table 2 confirm this hypothesis. Support rates among the uninformed were 11% lower than those who were informed. The implication is that the more information producers receive about checkoff programs, the more likely they are to support them.

Next, the survey posed three questions seeking to elicit producers' perceptions of how checkoff benefits are passed down the beef marketing channel to the producer. First, producers were asked "who benefits the most from checkoff funding of advertising (cattle producers or beef processors and retailers)?" Only 10% of the respondents believed cattle producers benefit the most, while 42% believed they benefit equally (Table 2). However, a large percentage of respondents (35%) believed most checkoff benefits are captured at the retail, wholesale, or processing stage. Surprisingly, those who believed producers share equally in checkoff benefits were just as likely to support the checkoff as those who believed producers benefit the most (76%). When the same question was asked regarding checkoff funding on research, the results were similar, though more producers believed producers benefit the most (18%) and fewer believed processors and retailers benefit more (26%). The other 37% indicated a belief that the benefits are equally distributed. The result for support rate was similar for the question on checkoff funding of research. For those who believed processors and retailers benefit the most from checkoff-funded research, support for the beef checkoff was the lowest at 25%. Those who believed producers benefit the most were as likely to support the checkoff as those who believed producers share equally in checkoff benefits (73%).

These results present an opportunity for checkoff managers. A major reason producers apparently abstain from supporting checkoff programs is that they believe most of the benefits accrue to others. Because checkoff-funded generic advertising is intended to enhance demand at the retail level, retailers, wholesalers, and processors likely benefit to some degree from checkoff programs. On the other hand, many studies in the generic advertising literature have shown that changes in retail demand do indeed impact farm prices (e.g., Chung & Kaiser, 1999; Marsh, 2003). Our findings clearly indicate that checkoff managers can improve support for their programs among producers through active producer communication programs, emphasizing the price transmission of advertising from retailer to producer, and the share of benefits that are passed down to producers. Another application of these findings might be to encourage processors and retailers to join producers' efforts in increasing retail demand. A good example can be found in fluid milk promotion programs. Producers and processors work together to expand retail demand of fluid milk. While producers contribute $0.15/cwt, processors also pay $0.20/cwt of milk they market.

Finally, producers were asked how they perceived checkoff benefits are distributed between U.S. and international cattle and beef producers. Only 7% of respondents stated they believed U.S. producers benefit less than international producers, 37% that U.S. producers benefit most, and 17% that both groups benefit equally (Figure 2). Support rates differed predictably by such perceptions. Those who perceived that the beef checkoff program benefits foreign producers less than U.S. producers showed a much higher level of support for the checkoff (67%) than those who perceived that the program benefits foreign producers more (24%). However, the support rates were not significantly different between respondents who believed the U.S. producers benefit more than foreign producers and those who believed they benefit equally. The results may have reflected that to some extent the survey respondents were made aware of the fact that international beef producers exporting to the United States pay into the checkoff.

Conclusions

This article provides some insights on demographic and attitudinal factors that may affect the extent to which producers support a checkoff program. Using the beef checkoff program as the example, we found that the support rates among producers tended to differ across farm size, farm type, organizational affiliation, and producer attitudes toward ongoing checkoff programs. Veal producers indicated lower support for the beef checkoff program than cow-calf, feeder cattle, pure-bred cattle, and fed cattle producers. Large cow-calf and stocker producers indicated less support than smaller producers. Members of the national and state cattle and beef associations indicated higher support for the beef checkoff program than nonmembers. As for the difference in support rates by producer attitudes, producers aware of ongoing checkoff litigation problems indicated a higher level of support than those unaware of the ongoing legal battles. Most importantly, perceptions regarding how checkoff benefits are passed down the beef marketing channel made the largest difference in support rates. Only

about 25%-30% of the responding producers who believed processors and retailers capture a majority of beef-checkoff-induced advertising benefits indicated support for the checkoff. However, about three quarters of those who believed producers either share benefits with or obtain more benefits than retailers and processors from checkoff-funded advertising and research programs indicated support for the beef checkoff program. Perceptions regarding the international allocation of checkoff benefits also play a role in determining the level of producer support for the beef checkoff program. While only about a quarter of those who believed foreign exporters benefit more from the beef checkoff program than U.S. producers indicated support for the program, over half of those who believed that U.S. and foreign producers benefit equally and about two-thirds who believed that U.S. producers benefit more than foreign producers indicated support for the program.

Producer support is essential to manage successful checkoff programs. In terms of program management and producer communication, this study suggests that checkoff managers should work closely with producer affiliate organizations and make continuous efforts to increase producers' access to checkoff-related information to maximize producer support of their programs. Also, checkoff program managers should maintain active producer communication programs promoting the producer benefits of checkoff programs because producers tend to abstain from supporting checkoff programs when they believe most of the benefits accrue to others.

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Chanjin Chung (chanjin.chung@okstate.edu), F. Bailey Norwood (baileyn@okstate.edu), and Clement E. Ward (ceward@okstate.edu) are Associate Professor, Assistant Professor, and Professor, respectively, Department of Agricultural Economics, Oklahoma State University, Stillwater, OK.