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Incidence, Equity and Efficiency of Check-off Funded Research and Promotion Programs

by

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Commodity check-off programs will generally have implications for consumers, taxpayers, and producers of related commodities, in addition to the producers of the commodity in question. This article addresses the relevant distributional issues.

Agricultural commodity taxes, called "check-offs," are used to finance promotion, research and other activities that can be regarded as industry collective goods. Check-off programs are made possible through the application of the government's taxing powers to collect the check-offs, exemption of check-off programs from some anti-trust regulations, the use of government resources to develop and implement the programs and, in some cases, the provision of government funds to support them. These programs are important in the United States, spending upwards of $1 billion annually, and controversial, especially in relation to generic commodity promotion.

In recent years, several lawsuits have challenged the constitutionality of the mandatory check-offs, and two of the cases went as far as the U.S. Supreme Court. In 1997, the Supreme Court ruled in *Glickman v. Wileman Bros. & Elliott Inc.* that federally mandated generic advertising for California tree fruits did not violate the First Amendment; but in 2001, the Court ruled in *United Foods v. United States* that the Mushroom Promotion Act of 1990 did violate the First Amendment and should be struck down. The fact that at least some people affected by the programs believe that they do not receive net benefits, even if there might be net benefits in aggregate, is reflected in these past challenges and the ongoing litigation and disputes.

Previous studies have examined the net producer benefits from check-off programs, but more recently attention has turned to some harder questions, such as: "How closely do program decisions correspond to those that would maximize total net benefits for society," and "how are the benefits and costs distributed among different groups in society?" The two elements are related, since distributional impacts determine incentives.

Distributional issues associated with check-off programs can arise for a number of reasons and take several forms. Once a check-off program has been voted in by an appropriate majority of a defined group of producers, participation is mandatory for all producers in the group, even those who voted against it because they expected to be made worse off under the program. Further, both the collection of the check-offs and the programs they fund have implications for the welfare of consumers, other producers, and taxpayers in addition to their effects on the

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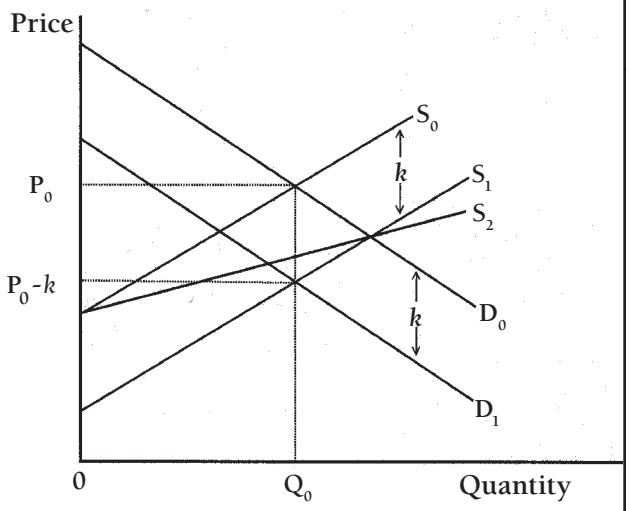
Fig. 1. Commodity Market Model of Check-Off Funded Research and Promotion



producers in the group, covered by the programs. As well as simple fairness or equity considerations, any resulting mismatches of the distribution of the benefits and costs among different groups can lead to a divergence between producer and national optimal choices, and hence efficiency losses.

A Simple Model

A commodity-market model can be used to illustrate some key points about the ultimate distribution of the benefits and costs among different groups, after allowing for any price changes resulting from research or promotion, and the check-off used to finance them. Figure 1 depicts market quantity on the horizontal axis and price on the vertical axis. In the absence of any check-off program, demand and supply are D_0 and S_0 respectively. Suppose research causes the supply curve to shift down by k per unit, from S_0 to S_1. A tax of k per unit, reflected as a shift in demand D_0 to D_1, would exactly reverse the price, quantity and economic welfare impacts of the parallel research-induced supply shift. Hence, if a k per unit tax could finance a research-induced supply shift of greater than k per unit, there would be net benefits to producers, consumers and the nation as a whole. These net benefits would be shared in direct proportion to each group's share of the costs, and so the research investment that would be optimal for the nation as a whole would also be optimal for consumers and for producers. In this setting, if producers were empowered to set a check-off to fund research, their incentives to maximize their own benefits would be exactly compatible with the national interest.

Alternatively, if research causes a pivotal supply shift, from S_0 to S_2, the total research benefits are only roughly one-half of those from the parallel shift. The consumer benefits are the same as from the corresponding parallel shift, while the producer benefits are smaller and could even be negative. In this setting, consumers would receive more than their "fair" (i.e., proportionate) share of benefits, whilst producers would receive less than their "fair" share of benefits and would therefore opt to fund less than the national optimum quantity of research. Thus, the nature of the research-induced supply shift is an important determinant of the distribution of benefits relative to costs and the compatibility of producer group incentives with the national interest.

The same model can be used to consider the impacts of check-off funded promotion that increases the demand for farm outputs, by simply interpreting S_0 and S_1 as the supply curves with and without the collection of a check-off, and D_0 and D_1 as the demand curves with and without the effects of promotion funded by the check-off. The incidence of a parallel increase in demand is identical to that of a check-off. In this setting a check-off is fair, in the sense that program benefits are distributed in proportion to costs of the check-off, and efficient, in the sense that the producer optimum coincides with the national optimum. As in the case of the research-induced supply shift, however, if the promotion expenditure results in a non-parallel shift in demand, the benefits would no longer be distributed in proportion to the costs. For a pivotal shift, producers would receive more than their "fair" share of the benefits, creating an incentive to set a higher check-off rate and do more promotion than the quantity that would maximize national net benefits.

Extensions to the Simple Model

The model in Figure 1 assumes an undistorted market. Various studies have shown how the total benefits from research or promotion and their distribution between producers, consumers and others will be affected by market distortions resulting from farm commodity programs, environmental externalities or the exercise of market

power by agribusiness firms. In many situations, market distortions do not affect the total benefits, but do change the distribution of benefits from research or promotion, creating a divergence between producer and national incentives. In extreme cases, distortions may be primary factors. For instance, each U.S. state would be a price taker in the domestic and international markets if we had free trade in milk and dairy products. Then milk promotion conducted under state orders could not be profitable for producers because it would have no effect on price. Profitable promotion is made possible by the existence of trade barriers that allow markets to be separated both geopolitically and by end-use, thereby giving producers in a state the collective power to influence price through promotion. But producer profits in this setting might come partly or entirely at the expense of consumers, taxpayers or both.

Other further distributional issues arise when we partition the total net benefits into elements accruing to final consumers, market intermediaries, farmers and suppliers of agribusiness inputs. Further, check-off funded research might cause factor-biased technical change from which farmers may receive more or less than their fair share of the benefits, depending on the direction of the bias. For these reasons, a producer group might choose a different mixture of spending among different types of research and promotion, and a different total amount of spending, than the mixture and total that would maximize total net benefits for society.

We can also disaggregate benefits and costs among producers of the same commodity, who might not all be covered by a check-off program. For instance, producers who do not adopt the new technology resulting from check-off funded research will not benefit but they will help pay for the research; and they may lose even more, if the research results in a lower price for their product. Similarly, when commodities are differentiated in space, time and quality, the impacts of promotion may vary among producers covered by a program, depending on the nature and timing of promotional effort. For example, check-off funded promotion might enhance demand for one market segment at the expense of another. In some programs, considerations of impacts across heterogeneous producers might give rise to a sacrifice of efficiency for equity

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An Update on the Legal Front

by
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Benjamin Franklin wrote "in this world nothing is certain but death and taxes." If Franklin were farming today he might have quipped "death, taxes and commodity promotion litigation." In the Summer 2000 issue of *ARE Update*, I wrote an article entitled, "Get Ready for More Commodity Promotion Litigation." Nearly a year later, the Supreme Court ruled in the *United Foods* case that the generic advertising and promotion program for mushrooms was unconstitutional because, unlike the 1997 *Wileman* tree-fruit case, the mushroom industry was not regulated enough. In *Wileman,* the U.S. Supreme Court ruled that generic promotion for tree fruit was fine because that industry was already heavily regulated so the fruit growers whose free-speech rights were impinged were a bit like homeowners complaining about airport noise after they had built their house next to the runway. However, mushroom producers faced no other regulation in their industry, so their complaint about the free-speech infringement carried more weight in determining its constitutional validity. With these two cases, the legality of a program may hinge upon whether or not an industry is highly regulated. Recently, however, defenders of the programs have tried a new argument.

In June 2002, a U.S. District Court judge in South Dakota, ruled that the beef check-off program was unconstitutional. In October 2002, a U.S. District Judge in Michigan, likewise ruled that the pork check-off program was unconstitutional. Both judges followed the high court's rulings in *United Foods,* but what was different in these was the government's argument. Rather than basing its case only on the degree of regulation in the industry, the government argued that the promotion program did not infringe on an individual's free speech because the speech is not being made by an individual—the promotion is government speech. Although the argument carried little weight in those decisions, in November 2002, a District Court judge in Montana, ruled that the beef check-off "creates programs where the government utilizes private cattlemen to disseminate a single message, a message prescribed by Congress and the USDA." In other words, the government is making the speech through the cattlemen not for the cattlemen. Unsurprisingly, all of these cases are being appealed. If this new government speech argument is upheld, the U.S. Supreme Court has likely not heard its last commodity promotion case.

in the choice of the mix of research and promotion programs (i.e., accepting a lower total benefit in exchange for a more equitable distribution of benefits).

A related issue is the distribution of benefits and costs among producers of different commodities. In some cases, the different commodities may be covered by a single check-off program (as in the California Tree Fruit Agreement, covering peaches, plums and nectarines) and in some other cases by competing programs (as in the beef and pork industries); and in other cases again, some commodities may be covered while others are not (e.g., comparing poultry versus red meat). In any of these instances, cross-commodity impacts imply divergences between the incidence of costs of a check-off and the benefits from research or promotion. Accordingly, incentives of managers of check-off funds will diverge from the interests of the broader society. In previous work we suggested that beggar-thy-neighbor elements could lead to excessive investments in generic commodity promotion. Similar results might be expected when R&D has a beggar-thy-neighbor element, whilst the converse will be true when we have positive technology spillovers from one commodity to others.

Conclusion

Commodity check-off programs have implications for the welfare of consumers, producers and taxpayers in addition to their effects on those producers who are allowed to vote on the programs. The distributional outcomes have implications for both fairness and efficiency. If the producer group that comprises the constituency of the check-off program bears a larger (smaller) share of the costs than the benefits from a check-off funded activity, then the check-off program is likely to undersupply (oversupply) that activity from a national perspective.

The distribution of the benefits and costs of check-offs and check-off funded programs will coincide under some conditions but an exact coincidence seems unlikely. Producers' share of program benefits depends crucially on the nature of the supply or demand shift induced by research or promotion, which is inherently difficult to identify. Further, many commodity markets are distorted in ways that influence the distribution of the benefits from research or promotion.

What are the public policy implications? We have identified many ways in which check-off programs might be expected to fail to achieve a hypothetical social optimum, but that is not a sufficient basis for criticizing or condemning the programs. The more relevant issue is whether check-off funded programs are better than a realistic alternative. One realistic alternative is no programs; another is a modified check-off program. Producer groups can and should be expected to maximize their own benefits from check-off programs. The challenge, then, is to design the enabling legislation and operating rules so that producer and national interests more closely coincide, which cannot be done without considering the distributional issues discussed here. Even if the programs can be structured to assure compatibility with national interests, however, they may remain controversial if there are perceived distributional inequities or inefficiencies among producers within an industry. A good example is the issues that have led to the recent litigation over mandated generic promotion programs.

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