MARKETING RESEARCH AND
WELFARE ECONOMICS

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UNDERLYING the recent impetus provided by the federal
government to agricultural marketing research appears to
be the implicit assumption that alterations in the marketing struc­
ture—the methods or procedures by which the products of the
farm are made available to consumers—can improve farm income.
Title II, the "Agricultural Marketing Act of 1946," of Public Law
733 (79th Congress—chapter 966—2d Session), states in Sec.
202: "The Congress hereby declares that a sound, efficient and
privately operated system for distributing and marketing agricul­
tural products is essential to a prosperous agriculture and is indis­
pensable to the maintenance of full employment and to the wel­
fare, prosperity and health of the nation ... it is the intent of Con­
gress to provide for (1) continuous research to improve the market­
ing, handling, storage, processing, transportation and distribution
of agricultural products."

An estimate of what Congress expects from this law may be
obtained from an examination of Sec. 203. "The Secretary of Agri­
culture is directed and authorized:

"(a) To conduct, assist and foster research, investigation, and experi­
mentation to determine the best methods of processing, preparation for
market, packaging, handling, transporting, storing, distributing and
marketing agricultural products. ...

"(b) To determine costs of marketing ... and assist in the development
and establishment of more efficient marketing methods (including analyses
of methods and proposed methods), practices, and facilities, for the pur­
purpose of bringing about more efficient and orderly marketing, and reducing
the price spread (italics supplied by the author) between the producer and
the consumer;"

"(c) To foster and assist in the development of new or expanded markets
(domestic and foreign) and new and expanded uses and in the moving of
larger quantities of agricultural products through the private marketing
system to consumers in the United States and abroad."

It does not appear unreasonable to conclude that Congress ex­
pects this law to bear the fruit of expanded farm income. A similar
expectation has been expressed in previous federal legislation dealing
with agricultural marketing—the stimuli provided to farmers'
cooperatives and the Agricultural Marketing Agreements Act of 1937, for example.

It is the purpose of this paper to describe some of the ways by which the marketing structure might be employed to raise farm income. These will be evaluated in the light of "modern welfare economics"—a generally agreed definition of a welfare maximum. It is hoped that the analysis will suggest directions which agricultural marketing research might follow and aid in estimating the significance of such research.

A. Ways of Increasing Farm Income Through Changes in Marketing Procedures

There is a large number of different ways by which changes in marketing procedures could be used to increase farm income, most of which are being or have been utilized. Although the following classification is not exhaustive and the classes are not mutually exclusive, it includes the bulk of the possibilities:

1. Increase marketing efficiency, preserving the existing specialization between "production" and "marketing." This means providing a given amount of services—for example, the same amount as are now provided—but providing these services with the use of fewer resources than are now employed.

2. Increase the proportion of marketing services provided by farmers. With no change in the total of services provided and no increase in marketing efficiency, the services provided by "middlemen" would be reduced. Farmers would be selling more of their resources indirectly in the provision of marketing services.

3. Reduce the number of marketing services. This is, of course, a change in the nature of the product provided to consumers.

4. Permit farmers to achieve (or strengthen) "monopoly power." This would mean a change in the "terms of trade" between farmers and the buyers of farm products—consumers or "middlemen."

5. Reduce the "monopsony power" of the buyers of farm products—consumers or middlemen—thereby increasing the prices received by farmers.

Obviously, an alteration in marketing technique might involve many of the classes of changes suggested above. For example, the introduction of a large farmers' selling cooperative might increase marketing efficiency, increase the number of marketing services provided by farmers through the cooperative, reduce the number of
marketing services added to the raw material, strengthen farmers' "monopoly power" and diminish the "monopsony power" of buyers. But, for purposes of this analysis, it is useful to employ a classification such as is set forth above.

It is interesting to note that any of these changes might reduce the spread between prices paid by consumers and prices received by farmers. Consequently, to the extent that not all of these changes are consistent with our definition of an improvement in welfare, a reduction in the spread between prices paid by consumers and prices received by farmers is not an adequate criterion for appraising changes in the marketing structure.

1. Increasing Marketing Efficiency

It is not unfair to credit many research workers in marketing, both in the industrial and agricultural fields, with attempting to increase marketing efficiency. They have attempted to point out ways in which fewer resources would be required to provide a given amount of services, or conversely, more services could be provided with the same resources. Developments in food processing—canned and frozen fruits and vegetables for example—have been mostly increases in efficiency. This is partially a technological phenomenon. It is economic only if, with a given technology, the marketing process is induced to employ the proper (most profitable) combination of resources.

The effects of increases in marketing efficiency, however, need not be reflected in significantly higher farm income. In the short-run, they may result in higher returns to processors—prices paid by consumers and prices received by farmers remaining relatively unchanged until knowledge of such improvements becomes more widely disseminated, a patent expires, or other impediments to widespread use of the new process are broken down.1

In the long-run, the benefits of such improvements are likely to

1 A change in the form of the production function, which increases the marginal physical product of a factor, will increase the demand for the factor and hence will increase the price of a given quantity which is purchased—if the supply is not perfectly elastic. In one year, the quantity of an agricultural product can be taken as fixed. An improvement in marketing efficiency in one sector of the market for this product would increase the price of the agricultural product only in so far as the firms in this sector would bid higher prices in order to get additional supplies from other sectors. If the sector in which the improvement occurred uses a relatively small percentage of the total of the agricultural product, the price increase is likely to be small.
be widely disseminated among the population, accruing to farmers in about the same fashion as they accrue to other groups of economic units owning similar amounts of resources. Thus, a change which cut vegetable marketing costs in half would permit consumers to secure a given amount of vegetables of a given quality at reduced prices—provided that middlemen's profits were not expanded to absorb all of the gains and that some expansion in the supply of vegetables would occur as a result of increased prices to producers. Unless, however, the vegetable producers were able to prevent expansion among themselves and the entry of new producers, their costs would increase as they bid for additional resources. Their returns would be increased only as the real prices for resources throughout the economy were raised as a result of the improvement in marketing.

2. Increasing the Proportion of Marketing Services Provided by Farmers

Another way by which farm income might be increased through changes in the marketing structure is by making it possible for farmers to perform some of the functions which otherwise would be performed by middlemen. For example, farmers might market butter rather than cream, pasteurize and bottle fluid milk and deliver it to the household consumer, or even make shoes. One interpretation of the belief that a reduction in the spread between prices paid by consumers and prices paid by farmers is a "good thing" is that it would be desirable for farmers to perform more of the marketing services now performed by middlemen.

It is reasonable to expect that some marketing services could be performed as efficiently, or perhaps more efficiently, by individual farmers than by specialized marketing agencies. Where the optimum size marketing unit has a capacity about equal to the output of a single producing unit (farm), there are likely to be few gains from a division between production of a raw material and marketing of the product to consumers.

Such instances, however, are relatively infrequent. The optimum size processing or distributing unit is likely to have a capacity several hundred times the output of a single farm. In such cases, the resources of several hundred farmers would have to be jointly mobilized in the establishment of a marketing agency.

In assuming some of the functions ordinarily performed by
middlemen, the farmer may be able to employ resources that he would prefer to use but for which there is no market. Some labor resources would fall in this category. A few hours each day may be spent by the farmer in leisure, although he would prefer to sell the services of his labor during this period. For example the fluid milk producer-distributor is frequently taking advantage of an opportunity to employ resources which would otherwise be spent in leisure. In such instances, improved use of resources may be a result of an expansion in the proportion of marketing services assumed by farmers—providing that the displaced middlemen can find employment elsewhere and that their product in this new employment is not too much smaller than that in the old.

However, when the optimum size processing or distributing unit is large and its operation requires the cooperation of many farmers, the farmers' resources which are used in this unit are unlikely to be labor. A cooperative grain elevator, for example, is infrequently manned by farmers. Farmers furnish the funds to purchase the equipment necessary to handle the grain and the funds to finance marketing operations. Such funds, if invested in the farm enterprise, might yield returns as high or higher than those yielded by the marketing enterprise.  

A decision to invest in a marketing enterprise should be made with full knowledge of returns from alternative investments including those in the farm business.

3. Providing Fewer Marketing Services

Implicit in many marketing analyses is the notion that there are too many services attached to the raw material before it is finally converted into a form that is purchased by consumers. An example to which marketing experts frequently point is retail fluid milk distribution with its many distributors following the same geographical path in delivering fluid milk to households. It is contended that consumers would be willing to pay almost as much for a

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2 Empirical estimates of marginal productivities in agriculture, indicate that the productivity of capital resources in agriculture as a whole is relatively high. See, for example, D. Gale Johnson, "Contributions of price policy to the Income and Resource Problems in Agriculture," this JOURNAL 26: 631-664; and Gerhard Tintner and O. H. Brownlee, "Production Functions Derived from Farm Records," this JOURNAL 26: 566-571.

product with much less services—less elaborate packaging or less advertising for example. This notion is not universally held, however. Note the extensive advertising campaign which is being planned by the National Dairy Association.

Whether this belief has empirical validity is difficult to determine. Frequently consumers have only the alternatives of purchasing the commodity with its many services or not purchasing. The alternative of fewer services is not available. Perhaps some of the funds for marketing research might be spent in determining consumers' preferences for various amounts of marketing services.

If this belief is valid, however, it does not necessarily follow that the reduction in marketing services will provide substantially higher farm income. A reduction in marketing services resulting in an essentially equivalent product in the eyes of the consumer is analogous to an increase in marketing efficiency. Fewer resources are required to produce a given amount of consumer satisfaction, or more satisfaction may be attained from a given amount of resources. Farmers, in the long-run, are likely to benefit from this step only as the real prices for resources throughout the economy are raised. Unless farmers were able to prevent the entry of new producers, the impacts of the reduction in marketing services are likely to be disseminated widely throughout the economy.

Of course, if consumers prefer the existing pattern of marketing services, reducing the amount of services would reduce farm income. The demand prices for farm products would fall by more than the reduction in marketing costs.

4. Strengthening Farmers' Monopoly Powers

An important characteristic which distinguishes a firm selling in a competitive market from a firm which is the sole seller in a market is that the former may follow only an output policy while the latter may have either an output policy or a price policy. The monopolist may pursue a price policy which will result in profits in excess of those which would be achieved in a competitive market. By prohibiting entry of other firms, he is able to maintain this high profit position. The competitive firm, however, must take the market price as given and adjust his output to make the best of the situation.

If the demand schedule for the product is given, it is obvious that the monopolist cannot fix both price and output. If one is fixed, the other is determined by demand conditions.
Farmers have long pointed to their market situation as one in which sellers told them what prices they (the farmers) would have to pay, while buyers of farm products told farmers what prices would be received. While farmers perhaps have had an exaggerated view of the degree of monopoly and monopsony in their markets, this has not weakened their zeal for achieving a monopoly or monopsony position. Encouragement has been provided by government through such legislation as the AAA and the Agricultural Marketing Agreements Act.

To achieve monopoly power would require something similar to the formation of a selling agency which would determine either price or output policy, allocate quotas to producers and establish machinery to enforce these quotas. Although the problems of allocating and enforcing quotas might be difficult to solve, it is conceivable that rather marked gains to farmers might accrue if these problems were overcome. This is particularly true for commodities for which the price elasticity of demand is less than unity within the "effective range." In such cases, total revenue could be increased by reducing marketings. In other cases, total revenue would fall as marketings were reduced. Total costs would have to fall more than total revenue before farmers as a group would gain.

Further opportunities for increase in total receipts from a given output of a farm product could be provided through monopolistic price discrimination—selling the same product in different markets at different prices. This is essentially the effect of the classified pricing system for milk which prevails in most federally administered milk markets.

In virtually all cases, farmers stand to gain from practicing monopolistic price discrimination. They may also gain from simple monopoly power in all cases where total revenue will be increased by reducing the amount sold. And they gain when total revenue declines with reductions in the amount sold, but total costs decline even more—the optimum quantity, from the farmers' standpoint, being that at which any further reduction in quantity sold reduces total revenue by more than it reduces total cost.

5. Breaking the Monopsony Power of Buyers of Farm Products

The formation of farmers' selling organizations is frequently designed to break the monopsony power of the buyers of farm

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products. A milk distributor who is the sole buyer of fluid milk in a given marketing area and who is attempting to maximize his profits will hardly be unaware that his purchasing operations are an important influence in the milk market. If he is trying to maximize his profits, he will attempt to equate the marginal revenue product (marginal revenue from milk which he sells multiplied by the marginal physical productivity of the milk in the form in which it is purchased from farmers) with the marginal cost of fluid milk to him. But, unless the supply schedule of milk in the market in which he is purchasing is perfectly elastic, the marginal cost of fluid milk will not be equal to the price (see figure 1).\footnote{Refer to Joan Robinson, \textit{ibid.}, Chapters 18 and 26.}

The monopsonist also may be able to practice price discrimination in the purchase of milk from producers—those producers

\begin{figure}
\centering
\includegraphics[width=\textwidth]{fig1.png}
\caption{Under simple monopsony, the price of the factor will be $OP_1$ and the quantity purchased will be $OQ_1$. If the price is fixed at $OP_1$, the quantity will be increased to $OQ_2$. Or $OQ_1$ will be purchased if the price is fixed at $OP_2$.}
\end{figure}
having the strongest bargaining positions receiving higher prices than producers with weaker bargaining positions. Such discrimination will be profitable to him providing that the sellers can be separated from each other.

The formation of a producers' selling organization to fix a price at which all milk would be sold, or price fixing by government, would destroy the monopsony power of the buyer. The supply schedule facing him would become perfectly elastic at the fixed price. Producers would receive a higher price for the same quantity as was sold before the uniform price was established, or they would receive the same price for a larger quantity (see figure 1). If the price was established so that the quantity previously sold continued to be purchased by the distributor, consumer welfare would be unaffected. A transfer to income from the milk distributor to producers would result. It probably would be necessary for the farmers' selling agency or government to establish quotas for individual producers in order to prevent excess supply of milk. If, however, supplies are permitted to adjust to price, the price of milk to consumers is likely to fall. Consumers will share in the benefits of the destruction of the distributor's monopsony power. A "better" allocation of resources—one more in accordance with consumers' preferences and producers' costs—will be the result.

**B. A Welfare Maximum**

Modern welfare economics is concerned with defining the conditions under which the welfare of a group of economic units—the producers and consumers of the U.S., for example—is at a maximum. Most contemporary writers in welfare economics do not admit interpersonal comparisons of utility. Hence, the optimum distribution of a given income cannot be defined, although the effects of income distribution upon the size of the product to be distributed can be analyzed. This admits consideration of the impacts of income distribution upon the level of employment (the amount of resources used) and upon the allocation of resources.

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Assuming a given distribution of income, any change which permits an increase in the size of the total product (including leisure) of the economy can be considered an improvement in welfare—provided that the economic units which gain compensate for the losses of those which lose as a result of the change. Thus, welfare for the economy as a whole is at a maximum when no further increase in welfare can be achieved by an economic unit without this action resulting in a reduction in the welfare of other units.

With a given income distribution, a given amount of resources to be allocated among various alternative uses (including leisure), and given consumer preferences, resource allocation is optimum (i.e., will permit maximum welfare) when the marginal rate of substitution between factors and products, between products, and between factors is the same for all firms, resource owners and consumers. This is equivalent to saying (1) that the output (or input) of any firm should be such that the marginal physical product of a factor, $A$, in producing a product, $X$, is the same as for all other firms and is equal to the marginal rate of substitution of $A$ for $X$ in all households; (2) that the marginal productivity of another factor, $B$ in producing $X$ is the same for all firms and is equal to the marginal rate of substitution of $B$ for $X$ in all households; (3) that the marginal rate of substitution of factor $A$ for factor $B$ should be the same in all firms and all households; (4) that the marginal rate of substitution of product $X$ for product $Y$ should be the same in all firms and all households.

Achievement of this condition in automatically encouraged by the price mechanism under perfect competition. In the long-run, firms equate the value of the marginal product of a resource with the price of the resource, the marginal rates of substitution between factors with the factor price ratios and the marginal rates of substitution between products with the product price ratios. Households—if they are maximizing their utilities subject to the constraints imposed by their incomes—equate the marginal rates of substitution between products with the product price ratios, the marginal rates of substitution between factors with the factor price ratios and the marginal rate of substitution between a factor and a product with the factor-product price ratio. This condition is not fulfilled, however, when there are imperfections—monopoly and monopsony, for example—in the economy. This does not mean that
monopoly in an economy is inferior to a perfectly competitive situation where the technology which can be utilized by the monopolist is sufficiently superior to the technology used by the competitors to make the product of the economy with the monopolist maximizing profits greater than the product of the economy under perfect competition. But it does suggest that welfare could be increased by inducing the monopolist—through price regulation, taxation or subsidization—to equate the product price with the marginal cost of the product. The monopolist could be compensated by consumers and resource owners for the reduction in profits which he would suffer, and consumers and resource owners would still gain.

Although modern welfare economics does not lend itself to telling us what the income distribution should be, it can aid us in appraising various methods for achieving any distribution of a given income. We might assume, for example, that Congress is accurately reflecting public opinion in trying to increase farm income. If we can determine what income the public thinks farmers should receive, we can evaluate various methods of achieving this income in terms of their impacts upon the welfare of the other members of the economy. Given the income which farmers should receive, the best method for providing this income is that which leaves the welfare of the rest of the economy at a maximum. That method, according to the criteria which have been set forth above, will be the one which interferes least with an allocation of resources most in line with consumer preferences—leisure being accepted as a product thereby permitting the level of employment as a policy consideration.

C. Appraisal of Various Changes in Marketing According to the Criteria of Welfare Economics

Of the five general classes of changes in the marketing structure which might be employed to increase farm income, one—the building up of farmers' monopoly power—obviously does not meet the conditions which have been set forth as representing a welfare maximum. Farmers could be made as well off by other means—direct income payments, for example—and the rest of the economy

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8 This is the approach taken by Professor T. W. Schultz in his analysis of agricultural policies. Note, for example, "Economic Effects of Agricultural Programs," *American Economic Review* (supplement) February 1941, 127-154.
would be better off than if farm income were increased by the monopoly device.

One class of changes—greater marketing efficiency—could fit our definition of an increase in welfare. Since the size of the total product would be increased, farmers could capture all of the benefits of the improvement and leave the rest of the economy as well off as before. The “best” method for transferring the gains to farmers—i.e., that method which maximizes the size of the transfer subject to the condition that the rest of the economy be left no worse off than before, or which maximizes the welfare of non-agriculture subject to a given size transfer to farmers—is not through the price mechanism. If farmers try to capture the gains of increased marketing efficiency through maintaining prices to consumers, the conditions for a welfare maximum set forth in the previous section cannot be met. Transferring income through income taxation and income payments would be a superior method.

Whether the three other types of changes mentioned would result in an improvement or reduction in welfare cannot be determined without further specification of the conditions under which these changes take place. Increasing the proportion of marketing services provided by farmers—if it increases the size of the total product and farmers compensate for the welfare losses of the displaced middlemen—would represent a welfare gain. If there was full employment of resources before and farmers performed the marketing services less efficiently than middlemen, the result is a decline in welfare. Providing fewer marketing services would increase welfare, if the resources released for other uses contributed more in these other uses than they did in marketing.

The destruction of the monopsony power of buyers of farm products would result in increased welfare providing that the output of farm products was increased, this increased output was sold in a “free” market and the monopsonist was compensated for his loss in welfare. This follows from the improvement in resource allocation, the consequent increase in total product and the resultant opportunity for compensation to the monopsonist with the compensators (farmers and consumers) still being better off than before. If, however, the breaking of monopsony power results only in a transfer of income from the monopsonist to farmers, consumers remaining no better off than before, farmers would not benefit after arrangements had been made for compensating the monopsonist.
No improvement in welfare would result. This conclusion must be modified if society believes that an income distribution with farmers getting more and the monopsonist less of a given product is preferable to a distribution in which farmers get less and the monopsonist more.

D. Marketing Research

Most of the implications of this analysis for marketing research are rather obvious. A given amount of funds are to be spent on marketing research—a situation resulting from the Agricultural Marketing Act of 1946. These funds will contribute most to the welfare of the economy as a whole if they are devoted to discovering means for improving marketing efficiency, determining the preferences of consumers for various amounts of marketing services and devising acceptable means for breaking the monopsony power of buyers. The funds will not be well spent if they are devoted to means for increasing the monopoly power of farmers.

Allocating resources for research, however, is an economic problem. Resources are best used when their contribution to the total product of the economy is at a maximum. The resources used for marketing research are frequently resources that could be used for other purposes. Although one cannot forecast accurately in advance the results of research, relevant factors in the assessment of any research project are (1) the probability of solving the problem and (2) the magnitude of the problem to be solved. The probability of solving the problem is the factor which cannot be known in advance.

The probability of obtaining reasonable solutions to many of the problems of agricultural marketing may be relatively large, provided that enough resources are directed toward solving these problems. The significance of solutions to the problems, however, may be relatively small in terms of the effects upon the welfare of either farmers or the economy as a whole. Farmers stand to gain from improvements in technology and improved resource allocation in sectors of the economy other than agriculture as well as in agriculture, and they also stand to gain from maintenance of full employment. Five million people involuntarily unemployed for one year means a reduction of as much as $10 billion in national product. Cutting agricultural marketing costs in half—preserving the same amount of marketing services as are now provided—would
not increase the national product by such a figure. And such a re-
duction in marketing costs is beyond the wildest dreams of those
who conceived the Agricultural Marketing Act of 1946.

It would have been well to have spent a bit more time in survey-
ing problem areas and arraying these problems according to rela-
tive importance before embarking upon such extensive researches
in the field of marketing. While it was not we as agricultural econ-
omists who made the decision to expand marketing research, it is
our function as economists to help Congress evaluate the impor-
tance of various problems which may be solved by additional
research. We need to continuously take stock of our research,
keeping in mind the probable importance of our contributions.
Perhaps we are determining our allocation of research resources
too much by what may have been significant when our field was
being developed and have failed to note the growth of new and
conceivably more significant problems.