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MARKETING COSTS AND EFFICIENCY STUDIES

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When I received an invitation to speak on the subject "Marketing Costs and Efficiency Studies" I replied to Charlie Merchant that I may end up saying a lot more about marketing costs than efficiency studies. It is much easier to generalize and even be prophetic about marketing costs than marketing efficiency.

Trends in Marketing Costs and Services

In reviewing the Journal of Farm Economics and Marketing Workshop reports, I found that during the early years of RMA many researchers were fearful that the success or failure of a greatly augmented marketing research program might be judged by the trend in marketing costs and the farmer's share of the consumer's dollar. Most of them were fairly sure that no matter how much money might be invested in marketing research marketing costs likely would continue to rise. These observers were correct in their predictions as to the trends in marketing costs. The total food marketing bill has risen steadily during the last decade. Average costs per unit of food marketed also have risen each year except 1950.

At the first Marketing Workshop in 1949 O. V. Wells in commenting on the first objective of the Research and Marketing Act--that of reducing marketing costs, preferably in such a way that the reduced costs would be reflected in terms of increased prices to farmers--noted that marketing costs are not likely to come down, "first, because marketing costs are compounded more than anything else of labor costs and I have no reason to believe that wages are going to go down in the near future...second, because many marketing costs are involved in supplying the services to satisfy the American housewife's wants... and that the ordinary American consumer or housewife is going to want at least as many and probably more services in the future as in the past."

The outlook for marketing costs is not much different today than it was a decade ago. To project a continued overall rise in marketing costs does not seem too hazardous a speculation. The economic forces that have propelled costs upward in recent years are still in operation despite a general business decline. Wage rates, utility rates, rents, taxes, and most other costs of marketing are more inflexible--on the downward side--then ever before. Housewives are likely to continue to buy more services with their food. To the extent that added services contribute to rising marketing costs (or keep them from going down) this also will keep an upward pressure on the total food marketing bill. Services are the more elastic part of the consumer demand for food.

As a part of the total economy the so-called agribusiness sector has stayed relatively constant and may continue to do so in the future. For example, food expenditures have been about 25 percent of disposable income in most years of the last several decades. But the business part of our agribusiness sector seems likely to increase relative to the agri-part. Trends in services that we have experienced in recent years and that are likely to

continue may be summed up as follows: (1) More services performed by processors and distributors of farm products relative to those of farmers; (2) more resources, labor and capital required in marketing relative to agriculture; and (3) a lesser share of the consumer's dollar spent for food and fiber going to agriculture.

At this point you may be wondering what all this has to do with a discussion of marketing costs and efficiency studies. Maybe not too much directly, but as a perspective for this or any other part of a marketing research program these trends toward higher costs and more services cannot be overlooked. Progress is not so easily demonstrated when exogeneous factors continually threaten to mask and cover up the positive results of research.

To look at the positive side for a minute, substantial progress has been made in improving the efficiency of the agricultural marketing system in specific sectors and overall. We should not be too modest to point out these gains. A measurement that our Branch uses to estimate aggregate changes in labor productivity is a comparison of an index of hourly earnings of food marketing workers with an index of labor costs per unit of product marketed. These indexes are derived by estimating the total labor bill of all workers in processing, wholesaling, and retailing of food products. The unit labor costs is a quotient of the indexes of this total cost and of the volume of food products marketed. Hourly earnings are estimated by dividing the total labor bill by total manhours.

These indexes show the following. In 1957 hourly earnings of food marketing workers were 56 percent higher than in the 1947-49 base period. Unit labor costs were 28 percent higher. While unit labor costs have increased, it is significant that they have increased by only one-half as much as the rise in average hourly earnings, thus reflecting a substantial gain in output per manhour. It is likely that because of larger capital investment per worker higher capital costs per unit of product marketed have offset a part of the gain realized in labor productivity. Such data as are available indicate this. However, the index that we use to represent output of marketing services likely underestimates the increase in services provided and thus imparts an upward bias to our measurement of unit labor costs.

An interesting comparison is obtained by separating the postwar period into two periods, 1946-51 and 1951-57, and comparing the different trends of these indexes during these two periods. Between 1946 and 1951 hourly earnings of food marketing workers increased by 47 percent; unit labor costs increased by a slightly larger amount, 50 percent. I do not put too much significance on the exact figures but they do suggest little, if any, gain in labor productivity during the early postwar period. From 1951 to 1957 the situation was strikingly different. Average hourly earnings went up by 31 percent in this period. But unit labor costs increased by 10 percent, only a third as much as hourly earnings. Fortunately, expenditures for marketing research show a positive correlation with these differential rates of productivity gains. I do not suggest, of course, that we ascribe all of the productivity increases to marketing research. Processors and distributors of farm products invested little in new plants and equipment during the war period. No doubt, the cumulative effects of the surge of postwar investments and related economies of scale achieved have been to increase worker productivity at a faster rate in recent years. On the other hand, we need not

disavow the correlation between accelerated investments in marketing research and efficiency gains as being an entirely spurious relationship. In fact, they may well have indicated appropriate places to most effectively expand capital inputs and increase scale of operations.

Four Phases of Cost and Efficiency Studies

Now for a closer look at marketing cost and efficiency studies. In developing this part of my discussion I used as an objective of research the following statement developed by a work group at the 1956 Marketing Workshop:

"The central objective of research in agricultural marketing is to develop improved information useful to individuals or groups in making decisions concerning marketing and in better understanding the forces operating and the changes taking place in the agricultural marketing sector of the economy. The groups referred to include commissions, legislative bodies and others concerned with public policies and regulations, as well as corporation, trade associations, and other private organizations involved, directly or indirectly, in marketing operations. The information to be developed and systematically organized may relate to economic changes and interrelationships, to problems falling within the physical sciences, or to any other subject matter field which can contribute to a better understanding of the present or prospective future developments in agricultural marketing."

With this central objective as a guide the overall development of marketing cost and efficiency studies can be divided into four integral steps or phases: (1) Measurement of spreads or margins between farm and retail prices of farm commodities; (2) measurement of cost and profit components of these spreads by marketing agency and/or function; (3) analysis of specific marketing operations to determine more efficient methods and procedures; and (4) provide technical assistance to marketing agencies and other groups to facilitate application of marketing research results. These phases are not necessarily separate and distinct in the development of these studies but they are essential parts of a successful program of research. These steps, all or in part, are not necessarily taken by marketing research economists. They may represent the coordinated efforts of statisticians, extension workers, engineers and other technicians, in addition to economists. The order of the four steps corresponds more or less to the chronological development of these studies.

Development of These Phases

The development of the first two phases is related most directly to this part of the central objective of marketing research--promoting a better understanding of forces operating and changes taking place in the agricultural marketing sector, especially by groups concerned with public policy. Marketing research emanated from questions relating to marketing costs raised by various groups over several decades. I have found topical quotations about price spreads from the early 1920's although the issue was by no means a new one at that time. Some measurements of spreads between farm and retail prices were made in the 1920's by the Department of Agriculture and by Warren and Pearson at Cornell. The first regular series published by the Department was

developed by Fred Waugh and others in the mid-1930's. Based on price data from secondary sources, the series gave objective data on spreads between farm and retail prices for comparable quantities of products. The publication of price spreads has been one of the continuing statistical services of the Department since that time.

It was soon evident to the Bureau of Agricultural Economics that measurement of these overall spreads did not answer even elementary informational needs. Questions were still to be answered about why spreads increased, what costs made up these spreads, and whether marketing agencies were making exorbitant profits. Furthermore, if any research in efficiency of marketing farm products was to be done, more information was needed about the costs and profits of various marketing agencies and for the various functions or jobs and services they performed in the marketing of farm products. With this objective in mind--providing more detailed information on costs including profits--the Bureau of Agricultural Economics in the early 1940's initiated a series of studies that resulted in reports for several major commodity groups, food and nonfood, giving detailed data for costs, margins, and channels mainly for the year 1939.

The Research and Marketing Act gave a further stimulus to similar cost studies. It also stimulated researchers to plunge more deeply into a third phase of cost and efficiency studies, the problem of increasing efficiency and reducing costs of marketing. These efficiency studies have been of various types and of various degrees of intensity. In these studies researchers have concerned themselves with the input-output relationships of specific marketing operations to devise ways by which the efficiency of these operations can be improved. Early efficiency studies by agricultural economists attempted to measure the level of industry costs and the factors associated with firm-to-firm variation. The procedure used in most cases was to determine average costs and volumes for each of a group of sample plants from accounting records of the firms. Later studies have looked to other fields, particularly industrial engineering, to develop detailed engineering data that could be combined with accounting data to estimate the relative cost of various work methods and to consider new technology. With economic-engineering data a synthetic method of cost analysis has been used to construct cost functions. In some studies model plants for varying size of output have been "constructed" from the least cost combination of various technologies.

One of the most comprehensive cost and efficiency studies is John Brewster's study of the operating efficiencies of cottonseed oil mills. Designs, specifications, operating requirements, and technical explanations were worked out by an engineering experiment station under a research contract with the U. S. Department of Agriculture. As suggested by the title of the report, "Comparative Economies of Different Types of Cottonseed Oil Mills and Their Effects on Oil Supplies, Prices, and Returns to Growers" (USDA Marketing Research Report No. 54, Feb. 1954), economic analysis was by no means a neglected aspect of this study.

The final and essential step in cost and efficiency studies is to make certain that the results of these studies are interpreted and disseminated in such a way that marketing firms and others are able to use them. Our Extension Service developed because there was a recognized need to bring the results of production research to the farmers in a way that they could understand and apply research results. We have not expected farmers to interpret

or understand the experimental design, analysis of variance, and other statistical tests of significance that might be involved in testing seed varieties. It is no more reasonable to expect that the operators of marketing firms are going to be able to interpret the long- and short-run cost curves and other economic theory and jargon that may be presented in our more technical reports. I shall not discuss the problems of how this fourth phase should be conducted. But if our research is to be of any value, the problem of dissemination and application of results must not be overlooked. Research workers cannot dismiss it simply because it may be the primary responsibility of others.

Current Status of Research

What is the current status and probable development of cost and efficiency studies? My perspective will of necessity be limited mainly to the Department's research program. The first phase, that of measuring overall farm-retail spreads on a continuing basis, is primarily an activity of the Department. It is a program that is carried on with a relatively small expenditure of funds because secondary data are used for the calculations. The accuracy and representativeness of these data are not what they should be but they are generally adequate for the purposes intended. The principal challenge of these data is not in their calculation but in their interpretation so that their dissemination will lead to an improved public understanding of the agricultural marketing system and the relationship between farm and retail prices. Various statistical series have been developed on the cost of inputs. What is needed most is a better measurement of the output of marketing services.

With regard to the second phase, there has been no shortage in the number of cost and margin studies in the last decade. But we still do not have a body of unified data on marketing costs, margins, and channels overall and by product groups similar to that for 1939. In part, this is because Census data are less complete for recent years and partly because of the rapid changes in marketing channels and practices. However, the added emphasis on costs, margins, and efficiency studies led us into a fragmentation of efforts which produced studies not comparable in time, location, or type of data. In a comprehensive price spread bulletin issued last fall (Miscellaneous Publication No. 741, "Farm-Retail Spreads for Food Products," Nov. 1957) we assembled data from these various reports, but this compilation is not adequate to satisfy the many requests. We included in this report an annotated bibliography of 374 studies of the USDA, State experiment stations, and non-governmental sources, mostly published in the last 10 years relating to marketing costs and spreads for food products. Some have breakdowns of the farm-retail spread by functions, agencies, or cost items. We hope that this bibliography will be a useful guide to those "searching" the literature.

Bennett White observed at the 1949 annual meeting of the AFEA that "Some groups are interested in having us carry on margins and costs studies as rapidly as possible along the broadest possible front because they expect the studies to show gross inefficiencies or exorbitant profits in the marketing of farm products. On the other hand, some middlemen and their representatives are urging that margins and costs work be expanded and speeded up for an entirely different reason. They obviously are expecting that our studies will indicate that marketing processes are not over-costly in relation to cost rates for the factors of production and methods and processes and that

profits are not unreasonably high." The second group probably have had their hopes and expectations realized to a fuller extent than the first group.

Cost and margin studies have had their ups and downs in the last decade. Originally, BAE embarked on some rather intensive studies. Because of the time lag in processing the data and publishing the reports, data from these studies were not useful in answering current questions on price spreads that grew out of changing demand-supply conditions for various perishable farm products. Nor did they provide enough information to answer questions on how costs might be reduced.

The decline in farm prices in the 1952-56 period without as large a decline in retail prices focused public attention on continued increases in marketing margins. Available cost and margin data did not meet the informational needs of this situation. A part of the funds appropriated for marketing research was earmarked for special studies of spreads between farm and retail prices of food products.

In the last several years we have attempted to reorient our cost and margin work to improve the effectiveness of that work and of our overall research program. We have instituted a continuing type of margins study for many food products by using the services of price collection agencies such as the Bureau of Labor Statistics and the Market News Branches of AMS to collect prices for as nearly comparable specifications as possible. For example, BLS now prices potatoes in a few large cities by type and State of origin. Other sources of data used are individual firms, industry cost accounting firms, trade association reports, and marketing cooperatives. Various cost items such as transportation charges and costs of various supplies and containers also are obtained from secondary sources. In some cases these continuing margin and cost studies are supplemented by periodic case studies that give additional detail on costs, profits, and services performed in marketing operations.

This program has some weaknesses but it has some decided advantages. It provides a current source of data to meet the informational needs of various groups and at less cost in resources. The resources saved can be used for more intensive cost and efficiency studies. Also, the price and cost data collected are extremely useful in giving us a better knowledge and understanding of the marketing system and thus providing us with guideposts for a more effective overall research program not only in cost and efficiency studies but in other areas.

Research results coming from studies of input-output relationships in the physical handling of farm products have been especially useful in marketing certain products, for particular marketing processes, and in specific geographic areas. Dairy plants, fruit and vegetable packinghouses, and oil mills are notable examples. For some activities like meatpacking, milling and baking, canning, vegetable oil processing, and practically all nonfood processing, few if any studies of operational efficiency have been made by public agencies. These industries account for a substantial part of the total marketing bill. The cooperation of business firms is essential to these studies. Many of the large firms have felt that technologies within a plant can be handled best by their own engineers and consultants. Some of the economic-engineering studies require rather large resources. If public research funds are used it is necessary that results from the research can

be carried over to other firms of similar character in the same locality or elsewhere. I believe there is a need for several types of efficiency studies, ranging from historical accounting studies to more detailed economic-engineering types. The criterion of their needs should be whether they will provide information that can be used by decision makers, whether they be managers of marketing firms or public policy groups.

Current developments suggest that marketing researchers will need to be concerned with the two aspects of efficiency, operational and pricing efficiency. They are not independent of each other. Improvements in operational efficiency cannot be finally evaluated without considering their effects upon pricing efficiency. Automatic controls and processes and other technological developments are finding growing application among agricultural marketing firms. Marketing firms are diversifying both function and commodity-wise to more effectively utilize overhead organization and distributive channels. These developments and others are causing significant changes in the organization and structure of the marketing system. The evaluation of these changes on pricing efficiency is a significant area of research for economists.