INCREASING DOMESTIC DEMAND FOR FARM PRODUCTS
BY ADVERTISING AND PROMOTION

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I. Two questions immediately are raised by the topic, "Increasing the Domestic Demand for Farm Products by Advertising and Promotion." The first question is, can demand be increased by promotional activities? The second, can such increase in demand, if any, be measured precisely?

On the basis of evidence now available, the answer to both questions is a qualified and partial yes. For single commodities, and for short-term promotional activities, as will be demonstrated later, a positive but fairly short-lived response can be shown. But little evidence is available on the effects of sustained promotional activity on the demand for farm products, either singly or in the aggregate.

One phase of the problem may be defined as that of shifting the demand curve to the right; that is, increasing demand, either for a short time or for a longer period through advertising and other promotion. Some economists have stated an alternative requirement -- making the demand for a product more inelastic, so that consumers will make repeat purchases almost without regard to the price and income situation. The latter requirement appears to have particular application to brand products where unique product differentiation is sought. But complete product differentiation is rarely achieved, except for very short periods.

A second phase of the problem is to determine the magnitude of costs in relationship to the benefits of advertising and other promotional activities. Even this phase is more complicated than it sounds. There is a real possibility that expenditures for advertising and other promotion may bring social gains in addition to gains in sales -- social gains measured not solely in terms of employment but in terms of improvement in living standards for society as a whole.

As a special case to the general requirement of inducing a shift in the demand curve to the right, we may have no apparent shift in the demand curve, or a negative one, where the force of advertising and other promotion for competing products may be as great as or greater than that for the product or product group being studied. Yet, even under these circumstances, the advertising and other promotion for product A, let's say, may have been quite successful.

for without it the demand curve for A might well have shifted to the left, even disastrously so. Our domestic society is highly competitive, and the special case may occur so frequently that it tends to become the general rule. This is primarily what makes the determination of advertising effectiveness so difficult. Either we must accept the benefits on faith, as most adherents do, or we must diligently seek out and measure all the demand factors and counterfactors operating in the domestic market on the product or product group with which we are concerned.

Let's pause for a moment to define what we mean when we talk about advertising and other promotional activities. We mean to include every phase of promotion. Thus we include paid advertising for newspapers, magazines, radio, television, billboards, car posters, direct mail, and so on. We also include public relations activities with handouts to such media as newspapers, radio and television, and the creation of newsworthy events. Further, we include the use of dealer-service agents to contact and assist retailers in pushing products or product groups; and the furnishing of in-store promotional materials such as display cards and banners, recipes, and shelf-talkers. Educational groups, such as agricultural extension agents, home economists, and human nutritionists, frequently are found in supporting roles, though not included in our definition of advertising and other promotion.

The development of new or improved products for introduction in the market is definitely a dynamic merchandising activity. The demand for citrus products, to cite an example, probably has been increased in the past several years, particularly during the 1940's, fully as much by the introduction of frozen concentrated orange juice, frozen concentrated lemonade, and other processed products as by all promotional activities combined. In fact, it would be almost impossible to segregate the effects of advertising and innovation.

For simplicity, let's refer to advertising and other promotion as "advertising," "promotion," or "promotional activities," including everything above except new-product introductions and strictly educational efforts.

II. So, we talk about "advertising" or "promotion." How important is it in the domestic economy? According to the magazine Printers' Ink1/, the total advertising bill in the United States was $10.3 billion in 1957, and in 1958 it was 1 to 2 percent less, or in round numbers about $10 billion.

These figures purport to cover all advertising expense, including the cost of advertising departments and point-of-purchase promotional materials, as well as amounts paid to agencies for advertising through newspapers.

magazines, farm publications, business or trade papers, radio, television, direct mail, outdoor signs, car posters, and other media. The figures apparently do not, however, include expenditures for dealer-service agents (not salesmen) or for public-relations activities. No firm estimates are available as to the total cost of dealer-service and public-relations activities, but, if an additional 10 percent can be accepted as a reasonable guess, another billion dollars would be added to the annual advertising bill.

Printers' Ink gives a breakdown of the approximately $10-billion advertising bill for 1957 (excluding dealer service and public relations) as follows: Newspapers, 32 percent; direct mail, 14 percent; television, 13 percent; national magazines, 8 percent; radio, 6 percent; business papers, 5 percent; and outdoor, 2 percent. An additional 20 percent is grouped under the heading, "miscellaneous." This evidently includes expenditures in some of the minor media and, more importantly, cost of advertising departments and point-of-purchase materials.

Significantly, no estimate is available of the cost of developing and introducing new consumer products into the market. This cost must run into several billion dollars annually.

Expenditures for promotion of agricultural products, including those by manufacturers, distributors, and farm groups, represent a substantial part of the total bill. Food and food products accounted for 21 percent of the total media expenditures by "millionaire advertisers" in 1957, according to Printers' Ink. Advertising firms or groups spending a million dollars a year or more probably are not completely representative of all advertisers, but in 1957 they did account for nearly two-thirds of total time and space costs in major media. Consequently, it may be said that total advertising expenditures for foods, food beverages, and confections in 1957 were in the neighborhood of $2 billion. Nonfood agricultural products, such as textiles, tobacco products, alcoholic beverages, and soaps, would boost this total by at least a billion dollars.

The bulk of agricultural-product advertising is sponsored by manufacturers and distributors. However, farmers themselves are taking an increasing interest in the advertising game. The Agricultural Marketing Service of USDA is now tabulating results of a survey covering 1958 advertising expenditures of farmer-sponsored groups, such as volunteer promotional associations, farmer cooperative marketing associations, and State advertising commissions and boards. Preliminary and unofficial returns at this time indicate a total advertising expenditure for all agricultural products by such groups of around 74 million dollars in 1958. Included in this total were sums spent by agricultural groups for dealer-service and public-relations activities, amounting in the aggregate to about 42 million dollars. These rough indications are based on returns from over 900
respondents, representing possibly 85 percent of total expenditures by farmer-supported groups. The final tabulations will include returns from some additional respondents, and the estimated expenditures may be revised somewhat in the official report from those given here.

Here, then, are the magnitudes of the advertising venture, expressed in dollars. Total advertising, as reported annually in Printers' Ink, has increased twice as rapidly as the Gross National Product since 1940. Advertising is an established institution in our economy.

III. Manufacturers and distributors of brand items obviously must continue to advertise if they are to survive. What is not obvious is the position of agricultural groups wishing to enter the advertising field. Can it be said, either on theoretical or on factual grounds, that product advertising on a broad scale, as for beef, lamb, apples, grapefruit, or potatoes—without brand-name differentiation—is necessary or desirable?

Advertising may be separated into two broad categories: brand-name and product. It is possible to measure the effects of brand-name advertising through such simple devices as the cash register (where the company keeps close watch of sales); through retail sales reports such as those furnished by the Nielsen service; and through consumer purchase reports. In the last two, it is possible to compare sales results for brand A, for example, with results for other leading brands of the same commodity. Ups and downs in brand A's share of the market can usually be measured and compared with advertising activity.

Product advertising, without brand or other major differentiation, is primarily what we are concerned with in this discussion. Not many studies have been made in this field, although two recent papers illustrate an awakening interest in it. One paper has to do with consumer attitudes toward food advertising, and the other is a mathematical treatment of the subject of sales response to advertising. In the latter, three concepts are used to build a mathematical model. These are (1) the sales decay constant, (2) the sales saturation level, and (3) the sales response constant. The authors state that test promotions, under specified conditions, give results that are significant and reproducible, though the degree of accuracy attainable, they state, is smaller than ordinarily considered acceptable in many other fields of research. This is an interesting report, but unfortunately it fails to give results of the experimental work described. Much additional work combining theoretical and statistical approaches would appear desirable.

The Market Development Branch of the Agricultural Marketing Service, USDA, is doing some work in this area. For purposes of discussion, that work is described in some detail below.

IV. Such work has been going on for three to four years. Yet the surface has barely been scratched. One could hardly expect broad principles to emerge in that time, particularly where many factors other than supply, price, income, advertising, and competitive forces must be considered. Such other factors might include the number, kind, and quantities of substitutable products available, the newness or oldness of the product, past and current trends in consumption, the effects of innovations (as changing the form of the product), retail merchandising practices, and variations in quality factors and their effects on consumer preferences.

Such surrounding, or ecological, factors often condition the effectiveness of advertising, and it is evident that a given advertising effort may have quite different results on different products or at different times. Trend, for example, can have an important influence. If consumption is trending upward, advertising may have more influence in shifting the demand curve to the right than if consumption is static or trending downward. It may not be possible, in general, to say why this is so; each case must be examined in detail before conclusions can be reached. So it is probable that a large number of cases must be studied before general principles will begin to emerge.

Five cases will be described. Three of these relate to advertising in connection with new agricultural-product introductions, and two relate to intensified advertising efforts for established products. In each case, the advertising is essentially a "one-shot deal," representing a single promotional effort without sustained followup. This is not to say that the agencies sponsoring the advertising did not conduct followup campaigns; in some cases they did. But the study effort, in each case, was cut off following the initial promotion. There is no doubt in the minds of those conducting the studies that evaluation of sustained programs is equally as important, if not more so, and as time goes on it should be possible to make such evaluations. One such followup study is now being undertaken. It must be remembered, however, that results will not come quickly, since observations covering many months and perhaps years will be needed.

Essentially the same study techniques were used in the three cases concerned with testing market acceptance of newforms of agricultural products. The study techniques combined retail-store audits of sales and prices of the new and closely associated products with followup homemaker interviews to determine the incidence of awareness, purchase, and repeat purchase of the new product as well as like-and-dislike attitudes toward it.
The introductory campaigns also were conducted essentially in the same way in each case. A city of 100,000 to 200,000 population was chosen; retail stores were "saturated" with the new product (that is, as many stores as possible were induced to carry it, usually representing 90 percent or more of the total retail food trade of the city); a fairly intensive advertising campaign of 4 weeks was carried out, using newspaper ads, radio announcements, television demonstrations, in-store promotional materials and displays, store demonstrators in a few of the test stores, and publicity materials for newspapers, radio, and television. The advertising and merchandising activities were the responsibility of the trade and not of the study group. Nevertheless, the advertising and merchandising efforts were coordinated with the study plan.

The new products studied were frozen grapefruit sections, canned precooked short-grain rice, and dehydrated potato flakes. The first of these products was developed by the citrus processing industry, and the last two by utilization researchers of the U. S. Department of Agriculture.

One result of the promotional campaign was clearly and abundantly demonstrated. And that was the phenomenal effect on sales of using in-store demonstrators. In every store where a demonstrator was present, even only one or two days a week, sales of the new products were several times higher than in other test stores. And the higher sales tended to persist in such stores in the post-promotional periods studied. The use of demonstrators, obviously, is expensive. But under certain circumstances, where high initial consumer acceptance is desired, at least in a limited number of markets, the extra cost may be justified.

There was no doubt that advertising aided in gaining consumer awareness of and initial acceptance of the new products. Sales of all 3 products shot up during the advertising period, but tapered off during succeeding weeks. Nevertheless sales were in "commercial quantities" during the post-promotional period studied.

By commercial quantities we mean sales per store equal to or better than the average of other frozen-food or grocery items. Sales of precooked rice in 22 nondemonstration stores, having no special in-store displays, for example, were about as large as sales of other grocery items over the 19-week study period, including the 4 weeks of citywide promotion. That is, sales averaged

about one-third case (of 24 cans) per store per week, which was nearly the same as the average sales reported by Progressive Grocer for over 4,000 items in 6 supermarkets in Super Valu stores in the North Central region in 1957. Average sales of the precooked rice in Fresno were almost identically equal to average sales for 11 dry-rice items in Super Valu stores in the North Central region.

In the case of potato flakes, the entire quantity available was sold out in the fifth week, 1 week following promotion.

The household surveys showed that consumer awareness of the product amounted to 50 percent in the case of frozen grapefruit sections, in Erie, Pa., in a period following the promotion campaign; 27 percent in the case of canned precooked rice in Fresno, Calif.; and 50 percent in the case of potato flakes in Binghamton-Endicott-Johnson City, N. Y.

At the time of the surveys, about 30 percent of the aware consumers had bought frozen grapefruit sections, and about 70 percent of those had made 1 or more repeat purchases. A third of the aware respondents had purchased precooked rice, and about 40 percent of those had made repeat purchases. And nearly 30 percent of the aware consumers had bought potato flakes, with a 60-percent repeat-purchase pattern. Potato flakes were on the market for only 5 weeks, whereas frozen grapefruit and precooked rice were available for considerably longer periods. Potato flakes were not available to consumers for a period of 3 weeks prior to interviewing. This probably explains the slightly lower incidence of purchases for potato flakes compared with the other 2 products.

The primary purpose of the advertising including the in-store demonstrations, was to make consumers quickly aware of the availability of the new product, so that the commercial feasibility might be evaluated in a comparatively short study period. About half of the householders were made aware of the new products in a period of 8 weeks from their introduction in the market, except for precooked rice, where only slightly more than a fourth were aware. This indicates that the advertising, generally speaking, was successfully used as a study tool.

In fact, one might say that advertising is an absolute essential in new product introductions. Retailers as a rule are reluctant to stock new products without assurance that the distributor will promote the products in an effective way.

It may be of interest to note that frozen grapefruit sections are now being produced and distributed commercially, in competition with hot-pack canned sections and with chilled sections. The precooked rice tested is not in

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commercial production; further work to improve the product is under way at the Western Utilization Research and Development Division of USDA. About 8 firms are producing potato flakes, using a number of varieties of raw potatoes. One firm is distributing the product -- a new form of instant, dehydrated mashed potatoes -- on a national basis. Another national distributor is making further market tests of the product.

Additional studies of the effect of advertising on demand for farm products have been conducted by USDA, on sour cream and on lamb. The so-called surplus of dairy products has been concentrated chiefly in butter, evaporated milk, and nonfat milk solids. As shown in the accompanying slide -- AMS 6506-58 (1) -- consumption per person of evaporated milk, cream, and butter declined significantly in a recent 10-year period. Consumption per person of cottage cheese, nonfat dry milk, cheese other than American, and condensed milk, on the other hand, increased by a third to three-quarters. Little change per person was shown in use of fresh whole milk, American cheese, and frozen desserts.

In cooperation with the American Dairy Association, the Milk Industry Foundation, and local dairies, a study of the effectiveness of special promotion in increasing sales of cultured sour cream was carried out in Des Moines, Iowa, in August 1957. As shown in the slide -- AMS 4713-57 (12) -- sales of sour cream attained a peak 59 percent higher than the base week in 1 of the 4 promotion weeks, and averaged perhaps 40 percent higher for the entire period. Subsequently, part of the gain was maintained, but it appears that much of this increase resulted from secular trend. After adjustment for trend effect, the net gain attributable to advertising in August 1957 was approximately 33 percent, and there apparently was a slight net gain in subsequent months.

We may conclude that special promotional efforts will move additional quantities of good-quality, cultured sour cream. But what is the cost? And what is the longer-term effect on consumer demand?

The dollar cost of the special promotion in the Des Moines metropolitan area in August 1957 apparently was between $5,000 and $6,000. On the other hand, the gross value of additional product sold was under $1,000. Therefore, if the promotional program is to be considered a financial success, it must be in terms of consumer education in developing new tastes and new ways of usage, and hence in terms of long-run effects. Unfortunately, measurement of the long-run effects is a difficult undertaking for which analytical tools are not yet perfected.
Considerable effort has been expended to date in evaluating the effectiveness of promotional programs for lamb and mutton, both in Sacramento  and in Cleveland. The promotional effort in Sacramento occurred at a time when lamb supplies were unexpectedly short -- both locally and nationally -- and prices of lamb were high in relation to prices of other meats. This is shown in the slide -- AMS 4380-57 (7). As a consequence sales of lamb declined. In the evaluation it was concluded that sales would have declined more than they did if it had not been for the promotion. This was based on an imputed price-elasticity of demand ranging from -4.0 to -2.0. As indicated in the slide -- AMS 4381-57 (7) -- sales might have been expected to decline around 60 percent, with an elasticity of demand for lamb of -4.0, attributed to Ezekiel in the late 1920's, or to decline around 30 percent, with an elasticity of demand of -2.0, attributed to Fox, 1953. Retail-store sales, as audited, actually declined about 20 percent during the promotion period from a pre-promotion benchmark. The promotion, therefore, was judged to be successful in shifting the demand curve for lamb.

We can still have doubts, however. New methods of statistical analysis, in particular the method of simultaneous equations, might well yield different elasticities of demand for lamb, which possibly is in the neighborhood of -1.0 rather than ranging from -2 to -4. Moreover, one cannot be sure that a measure of elasticity for the country as a whole can be applied without misgiving to a single community.

A different analytical technique was used in evaluating the special promotional campaign for lamb in Cleveland, carried out by the American Sheep Producers Council in July and August 1956. As in Sacramento, retail audits were made, as well as surveys of household consumers. These yielded interesting pieces of information. But the chief reliance was placed on a multiple correlation analysis based on 40 months of data covering the period before the special promotion. This analysis included wholesale sales of lamb in Cleveland as the dependent variable, and retail price of lamb, composite retail price of other meats and poultry, consumer earnings, seasonality, and retailers' newspaper advertising activities for lamb relative to all meats, as independent variables. The composite retail price of other meats and poultry was found not to contribute significantly to the results.

8/ Promotion of Lamb, Results of a Campaign in Cleveland, Ohio, AMS, MRR No. 292, Dec. 1958.
The equation was used to predict sales, as may be seen in the next slide -- AMS 8534-58 (9). Sales beyond the correlation period, those in May, June, July, August, September, and October, also were predicted.

Actual sales and predicted values were compared for May and June 1956, the pre-promotional months, with good results; and as indicated in the next slide, for the two promotional months, July and August, and the first two post-promotional months, September and October -- AMS 6525-58 (9).

The results were rather curious. July, the first full month of special promotional activities, showed no significant difference between estimated and actual sales, at the 95 percent confidence level. August, the second month of promotion, showed a significant increase of 14 percent of actual over estimated sales. In September, the first post-promotional month, an offsetting decrease in sales took place. But in October actual and estimated sales were again not significantly different. It was concluded that temporary large supplies of lamb might be disposed of profitably by an intensive promotional campaign. It is evident nevertheless that heavier-than-usual consumption, or purchasing, in one month was followed by lighter-than-usual consumption in the following month. Possibly this is a characteristic of the demand pattern for lamb, but the evidence is rather thin for even this conclusion.

It is possible that the effects of the special promotion were underestimated. This arises from the fact that the newspaper ads of retailers were considered in developing "estimated sales," on the assumption that such activity was normal and was not influenced by the special program. Retailer advertising was heavier than usual during the special promotional period, and this may in fact have been associated with the special program.

Today over 2 1/2 years later, the USDA is undertaking a followup study in the Cleveland market. It is planned to bring the monthly sales and related data up to date in an effort to appraise the longer-term effects of the special advertising efforts for lamb, which have been continued by the American Sheep Producers Council.

It is obvious that, in making studies of advertising effectiveness, the problem of method or technique is paramount. Before concluding, we might describe another technique which is presently under test.

The USDA, in cooperation with the Washington State Apple Commission, is carrying on an experimental study of the effectiveness of advertising in 6 midwestern cities. Three "treatments" are being tested, (a) a general health advertising theme, (b) an apple use advertising theme, and (c) no advertising. These three treatments are being tested in each of the 6 cities over 4-week periods, with an experimental rotational design in such manner that each city will receive each treatment at least once, and all 3 treatments
will be conducted simultaneously in 3 pairs of the 6 cities. It will be possible to analyze for significance of difference between treatments, and for carryover effects at least in the short run. For measurement purposes, audits of apple sales and prices, and related data including volume and prices of competing fruits and extent of competitive advertising efforts, are being made in 10 or 12 retail food stores in each of the 6 cities.

In conclusion, we refer again to the general theme of this seminar paper -- that, right now, it is difficult if not impossible to say what effect advertising and other promotional efforts may have on the demand for specific farm products, and for farm products as a whole. Further, it is necessary, in developing a body of general principles, or theory, to test out a fairly large number of specific advertising programs so as to develop a broad basis of factual information. Some studies have been described, but it is evident, at least to this writer, that much more work needs to be done before conclusive evidence may be set forth.