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## ECONOMICS, ADVERTISING AND WOOL

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Farmers are showing increasing interest in promotion and advertising. Public statements by various farm groups calling for increased expenditure on advertising are all characterized by the certainty with which a desirable return from advertising is anticipated. In view of this it seems opportune to consider some of the broader aspects involved in the successful advertising of primary products. The purpose of this discussion is not to attempt to prove or disprove the value of advertising, but rather to review the factors which may determine the success or failure of advertising a particular product; to indicate the nature of the information necessary to enable an evaluation of the return from different types of advertising; and to discuss possible techniques for estimating the desirable amount of advertising in various situations. The discussion is relevant to most agricultural products which may be advertised, but particular emphasis is given to wool in view of the large programme planned for that product. It is not intended to discuss the competition between wool and other fibres, except as it relates to the proposition to advertise wool. Also it is recognized that advertising cannot solve problems of price stability, though it may have some indirect effects on prices, and that this must remain a separate problem.

### **New Emphasis**

The advertising of agricultural products is not new. What is new is the increased emphasis upon advertising as a possible means of solving a supply-price problem for several products, including eggs, butter, milk, rice, pome fruit, and bananas. This is also true of the wool industry. It is tempting to suggest some possible reasons for this added emphasis. Firstly one might note the reluctance of primary producers to change their production enterprises unless all other means of solving the industry's problems have been tried first. Since advertising has seen spectacular successes in some instances, it must inevitably command the attention of any group which has to dispose of large surpluses. Secondly, only one industry need begin advertising to make it necessary for rival industries to advertise. So it may be that because synthetics manufacturers have begun advertising garments and softgoods made from synthetic fibres, wool producers must either advertise or risk having their product displaced by substitutes. In this regard woolgrowers may have no alternative but to press for increased advertising. And, thirdly, there is no doubt that producer groups become targets for the promotional efforts of the advertising industry itself. Having noted the suggestion that a "triple A" may well be the next slogan for United States farm groups<sup>1</sup>, it might seem that advertisers have reversed the slogan, to read "Agriculture is Advertising's Answer".

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<sup>1</sup> Sydney Hoos, "The Advertising and Promotion of Farm Products—Some Theoretical Issues", *Journal of Farm Economics*, Vol. 41, No. 2 (May, 1959), p. 349.

### Demand Effects of Advertising

The aim of a manufacturer or producer in advertising is to increase or strengthen demand for his product, demand being recognized as the willingness and ability to pay for a commodity. Aggregate demand is dependent upon population size and structure, the level of real income of the population, and consumer preferences. The latter are determined by a complex of social values and customs, and environmental and institutional conditions. Many commodities are confronted with different demand situations arising from differences in these factors.

On the one hand are the less developed economies, whose people still require more primary products to satisfy their basic needs. Experience has shown that their per caput real incomes rise slowly and thus we might expect this rise to be reflected in aggregate demand. Aggregate demand will also increase as their population grows. On the other hand we have the advanced economies where basic needs are not so pressing. In many of these countries per caput real income is already at a high level and changes in demand for primary goods arising from changes in real income will therefore be much less spectacular. However, this does not mean the propensity to consume will be less and aggregate demand will change with variations in population size and structure and with changes in social norms.

It has been suggested that in advanced economies where people "are so far removed from physical want that they do not know what they want, . . . wants can be synthesised by advertising".<sup>2</sup> In such a situation demand can no longer be related to consumer preference, and consumption can apparently be adjusted readily to production. Here advertising may be the main, if not the only, determinant of demand. However, it has been shown that this is clearly not true for every commodity; the success of advertising varies and is dependent on many factors, particularly the nature of the commodity.<sup>3</sup> Thus advertising cannot be as all powerful as suggested.

In theory, to increase demand for a commodity it is necessary to influence consumers so that they will buy more of the commodity at the same price, or the same amount at a higher price. This means altering the demand either by moving the demand curve to the right or changing the elasticity of the demand, making it more inelastic.

Raising the demand curve from  $D_0—D_0$  to  $D_1—D_1$  as in Fig. 1, means more will be bought at any particular price than was previously bought at that price. It is an increase in the volume of demand. Such a change could occur due to population growth, given a fixed demand per head, or by increasing the amount demanded per head.

Changing the elasticity as by moving the curve from  $D_0—D_0$  to  $D_2—D_2$ , means that the amount demanded will become less influenced by price change. Demand is more firm, so that the commodity will continue to be bought as the price rises, and also the increase in quantity demanded as

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<sup>2</sup> J. K. Galbraith, *The Affluent Society* (London: Hamish Hamilton, 1958), p. 123.

<sup>3</sup> Neil H. Borden, *The Economic Effects of Advertising* (Chicago: Richard D. Irwin, 1947), pp. 422-438. The literature in this field is restricted, the best overall coverage being that of Borden, who discusses many economic aspects of advertising by drawing conclusions from a large body of empirical data.

the price falls will be less spectacular. In this case real gain, in terms of increased amounts bought at higher prices, will be obtained only if the equilibrium price position is above the intersection of  $D_0-D_0$  and  $D_2-D_2$  curves in Fig. 1. Below this point less of the commodity would be bought than previously although the elasticity would be reduced.<sup>4</sup> However, it is hard to conceive of advertising having a negative effect on demand as this suggests. It seems more reasonable to suppose that as demand became more inelastic the curve would move from  $D_0-D_0$  to  $D_3-D_3$ .

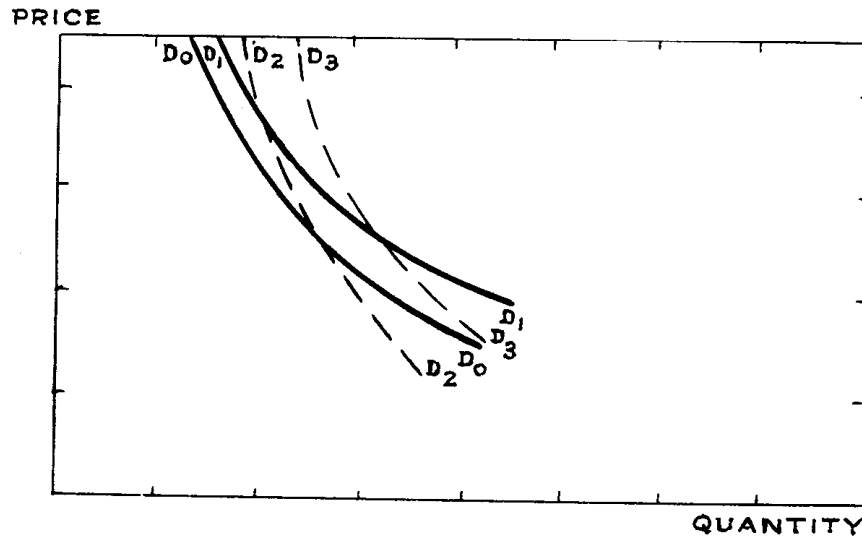


Fig. 1. Moving the Demand Curve.

It appears that it is beneficial to have an inelastic demand for a commodity if prices for that commodity are rising, and less beneficial if prices for the commodity are falling. However, though advertising might conceivably make the demand for some commodities less elastic by rendering the desire for the commodity so intense that consumers are not influenced by price changes, it would be possible for demand elasticity to increase as the desirability of the commodity became more widely known. The result for any particular commodity will depend on the inherent characteristics of that commodity.

**Advertising Primary Products**

It is possible to distinguish between two different levels of demand for a product. Hence we might discuss the effects of advertising on the demand curves for products as a whole, which Borden terms "primary demand", or the demand curve for individual firms called "selective demand"<sup>5</sup> Clearly in advertising primary products we are concerned mainly with the first situation. For although an individual manufacturer or retailer may advertise primary goods, his motive for doing so would be very different to that of primary producers selling raw materials. However, where manufacturers and retailers advertise agricultural goods, in preference to sub-

<sup>4</sup> Example by F. V. Waugh, "Needed Research on Effectiveness of Farm Products Promotions", *Journal of Farm Economics*, Vol. 41, No. 2 (May, 1959), p. 370.

<sup>5</sup> Borden, *op. cit.*, p. 422.

stitutes, their efforts do tend to influence overall demand. Thus encouragement to these groups in the form of prepared copy, and financial assistance is a recognized form of promotion for those concerned with primary demand.

Borden concludes that "advertising can and does increase the demand for the products of many individual firms, but the extent to which it does so varies widely", depending on the nature of the product and the related circumstances. With regard to the effect on primary demand, he concludes "that basic trends of demand for products, which are determined by underlying social and environmental conditions, are more significant in determining the expansion or contraction of primary demand than is the use or lack of use of advertising."<sup>6</sup> Thus the successful advertising of agricultural products may not be as easy as is sometimes suggested.

To be successful, i.e., to move the demand curve as prescribed in the previous section, advertising must do three things. Firstly, it must create an awareness of the commodity and a knowledge of its uses. Secondly, it must develop a liking or preference for the commodity. And thirdly, it must produce action—the acquisition of the commodity. These have been described as the functions of advertising.<sup>7</sup> Advertising aims to do this by (a) providing information on the commodity and its uses;<sup>8</sup> (b) differentiating the commodity making it distinct from its competitors, and apparently superior in some way; (c) emphasizing and promoting some inherent qualities which might make it superior; and (d) using psychological and emotive aspects to create appeal.<sup>9</sup> The extent to which advertising can do this depends on the nature and properties of the product involved.

### Effective Advertising for Wool

To what extent is successful advertising possible for wool? Firstly, the characteristics of wool are such that it lends itself to product differentiation, the development of latent qualities and the use of emotive appeal. Also there is a growing population, many of whom may not be familiar with wool. However, even assuming wool has all round superiority, it is often more expensive as compared with synthetic fibres which have been developed for specific uses. In the United States wool consumption per head per annum has declined during the last ten years by 25 per cent, i.e., from 4 lb. to 3 lb.<sup>10</sup> This has been due to: (a) replacement by other fibres, mainly non-cellulosic synthetics but also to some extent cotton, accounting for 75 per cent of the total decline, and, (b) a trend to lighter clothing, as a result of more informal attire, central heating, home entertainment, heated cars, and other factors.<sup>11</sup> This has caused a decline in the demand for warmer woollen garments without actual replacement by

<sup>6</sup> *Ibid*, pp. 433-444.

<sup>7</sup> Robert J. Lavidge and Gary A. Steiner, "A Model for Predictive Measurements of Advertising Effectiveness". *Journal of Marketing*, Vol. 25, No. 6, (October, 1961), p. 60.

<sup>8</sup> Much attention to the aspect has been given by George J. Stigler, "The Economics of Information", *Journal Political Economy*, vol. 69, No. 3 (June, 1961), p. 219.

<sup>9</sup> Borden, *op. cit.*, pp. 424-427.

<sup>10</sup> Bureau of Agricultural Economics, "Wool Consumption Trends in West Europe and the United States", *Wool Economics Research Report*, No. 3 (January, 1961).

<sup>11</sup> F. H. Gruen and A. M. Coutts, *An Analysis of Changes in U.S. Wool Consumption*, Canberra, Australian National University, Roneo.

synthetics. These data from the United States have been taken because the decline in usage presumably indicates future trends in other countries as they follow her in becoming increasingly wealthy. There are no data readily available for countries where wool use is increasing, but it is assumed that as less developed countries with temperate climates progress to higher standards of living their consumption of wool will increase. Information from Japan shows this increased usage, even replacing cotton in traditional dress. This is the general situation with which advertising has to deal. Borden says that "advertising serves not so much to increase demand for a product as to speed up the expansion of a demand . . . , or to retard adverse demand trends."<sup>12</sup> From this viewpoint advertising may be effective in influencing the demand for wool.

Secondly, the short run price elasticity of demand facing wool has been estimated to be between  $-0.4$  and  $-0.6$ .<sup>13</sup> This would seem to leave little scope for gain by reducing elasticity. But the cross elasticities between wool and improved synthetic fibres, and the price elasticity of wool at certain price levels appear to be very high. For instance McMillan postulates a wool demand curve where the price elasticity of demand is very high at certain levels.<sup>14</sup> His notion is that people in the trade believe that a woollen garment, say a man's suit, should be a certain price if it is to

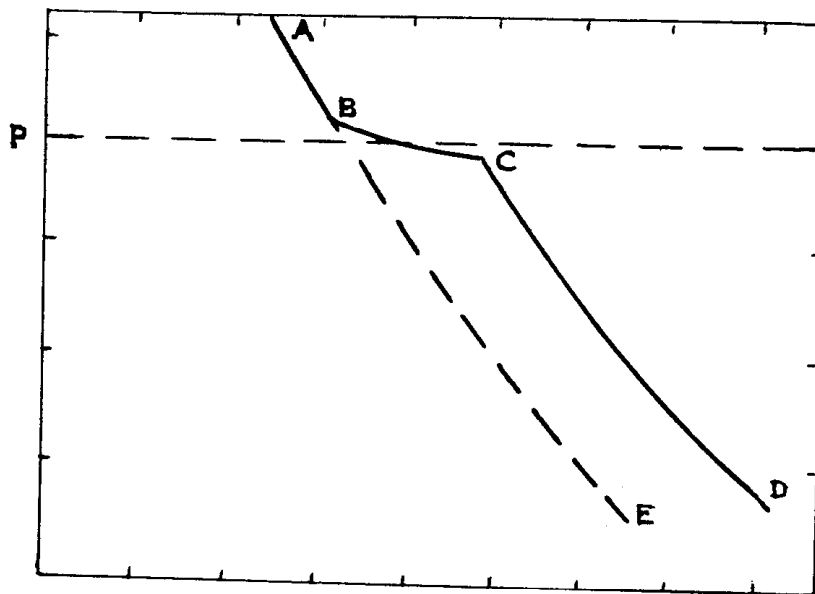


Fig. 2. Uneven Demand Curve for Wool.

<sup>12</sup> Borden, *op. cit.*, p. 843.

<sup>13</sup> Estimates by F. B. Horner, "Elasticity of Demand for the Exports of a Single Country", *Review of Economics and Statistics*, vol. 34, No. 4 (November, 1952), pp. 326-342, and B. P. Philpott, "Wool in the New Zealand Economy", *Economic Record*, vol. 33, No. 65 (August, 1957), pp. 216-233. See also Alan A. Powell, "Production and Income Uncertainty in the Wool Industry: An Aggregate Approach", *Australian Journal of Agricultural Economics*, vol. 4, No. 1 (July, 1960), pp. 86-96. Powell suggests that by virtue of the method used the estimates of Horner and Philpott indicate the level of short run elasticities rather than the long run elasticities.

<sup>14</sup> R. B. McMillan, "The Future of Wool in the Fibre Market", *Economic Papers No. 10*. Economic Society of Australia and New Zealand, 1955, p. 18.

sell. Thus, if the price of wool goes up either the amount of fabric in the garment is reduced, e.g., giving two piece instead of three piece suits, or cheaper synthetic fibres are substituted in sufficient quantity to keep the final price down to the required level. Such a demand curve would appear as in Figure 2 where the slope of the demand changes markedly between B and C, corresponding to the arbitrary price level P.

Although the two parts of the curve, AB and CD, are essentially not different demand curves, and it might be argued that having moved on to the curve AB during a price rise, the manufacturer and the consumer may both tend with an ensuing price fall to follow a new curve BE being a continuation of the curve AB. Whether McMillan's suggestion and this interpretation are very accurate or not is not very important. The point is that the demand curve for most woollen goods may be uneven due to factors such as the above example. These situations may lend themselves to advertising as a means of reducing the high level of elasticity which arises in such circumstances.

Thirdly, Australian wool has an estimated elasticity of demand of about  $-1.0$  to  $-2.2$ , by virtue of its share in the market.<sup>15</sup> Thus it might be advantageous to advertise Australian wool. However, it is unlikely that sufficient product differentiation would be possible between Australian and other wools, and since promotion is in the hands of an International Secretariat, the other members of which would lose by such a move, it is improbable even if possible. Although no specific estimates are available, the existing evidence of some increase in the use of wool, and the fact that wool occupies a position among the higher priced and superior quality fibres, where there is increasing demand and less competition from synthetics, suggests that the long run elasticity of demand for wool may be much higher than short run estimates might suggest. If this is so the prospects for advertising and selling woollen goods could be more favourable.

Fourthly, it seems that the use of blends of wool with synthetics, although a practical solution to the quality problems of synthetics and the price problems of wool, does not lend itself to advertising. However, if sufficient product differentiation could be developed for a particular blend then promotion by advertising may not be impossible. It would not seem logical to oppose the development of blends, and there would seem to be some gain from promoting them since they do have some qualities superior to wool, particularly where extra reinforcing is used to prevent wear. In this regard the careful use of synthetics might enhance what are essentially woollen goods.

Thus we might conclude that advertising may help to increase the overall demand for wool, and this brings us to the consideration of what the advertising expenditure in any situation should be.

### **Optimum Advertising for Wool**

The effectiveness of advertising in increasing demand is difficult to evaluate quantitatively for wool, as it is for any product. Data from empirical studies are essential before the optimum amount of advertising can be estimated.

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<sup>15</sup> Powell, *op. cit.*, p. 89.

Advertising may be regarded in the same way as any other factor used in the course of producing and marketing a product, and as such the optimum level of advertising will be determined by equating its marginal revenue and the marginal cost. It has been further suggested that a firm may maximize its profits by choosing an advertising budget and price such that the increase in gross revenue resulting from a unit increase in advertising expenditure, i.e., the marginal revenue of advertising, is equal to the elasticity of demand for the firm's product.<sup>16</sup> The theorem proposed by Dorfman and Steiner has been elaborated to show the optimal advertising expenditure to be where the marginal advertising intensity times the marginal sales effect of awareness equals the marginal cost of making consumers aware of the product.<sup>17</sup>

Another approach to this problem has been suggested by Rasmussen.<sup>18</sup> He relates advertising and demand in terms of an advertising-elasticity of demand, analogous to the more familiar price-elasticity of demand.

This elasticity tells us the percentage change in quantity demanded in response to a one per cent change in advertising. With some simplifying assumptions he shows that maximum profit is obtained by equating the expected advertising elasticity of demand with the ratio of total advertising expenditure to total gross revenue. But before either of these techniques could be used a large volume of work would be necessary to obtain the empirical data necessary to estimate the parameters for various price and advertising levels.

These parameters might be expected to vary according to, (i) the nature of the commodity, particularly the amount of product differentiation possible, (ii) the nature of the demand, particularly the degree to which the commodity is essential, and the amount already demanded, (iii) the amount of money already used in advertising this product, (iv) the activity and level of competition, and (v) the share of the market held by the commodity.

These factors may vary for different types of wool and for different situations. With wool there are many different users of the product, in many different locations, and there are many different advertising media which may be used, but these parameters could be determined under various circumstances by surveys of consumers.

The response to advertising is not instantaneous; its effects have been shown to take the form of a distributed lag. This is analogous to the "decay curve" of radioactivity of mineral isotopes, as shown in Figure 3.<sup>19</sup> Thus the effectiveness of an advertising campaign is determined not only by its current intensity but by the residual effects of previous efforts.

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<sup>16</sup> R. Dorfman and P. O. Steiner, "Optimal Advertising and Optimal Quality", *American Economic Review*, Vol. 44, No. 5 (December, 1954), p. 826.

<sup>17</sup> L. G. Telser, "How Much does It Pay Whom to Advertise?" *American Economic Review*, Vol. 60, No. 2 (May, 1961). Papers and Proceedings, p. 194.

<sup>18</sup> Arne Rasmussen, "The Determination of Advertising Expenditure", *Journal of Marketing*, Vol. 16, No. 4 (April, 1952), p. 439.

<sup>19</sup> Waugh, *op. cit.*, p. 364.



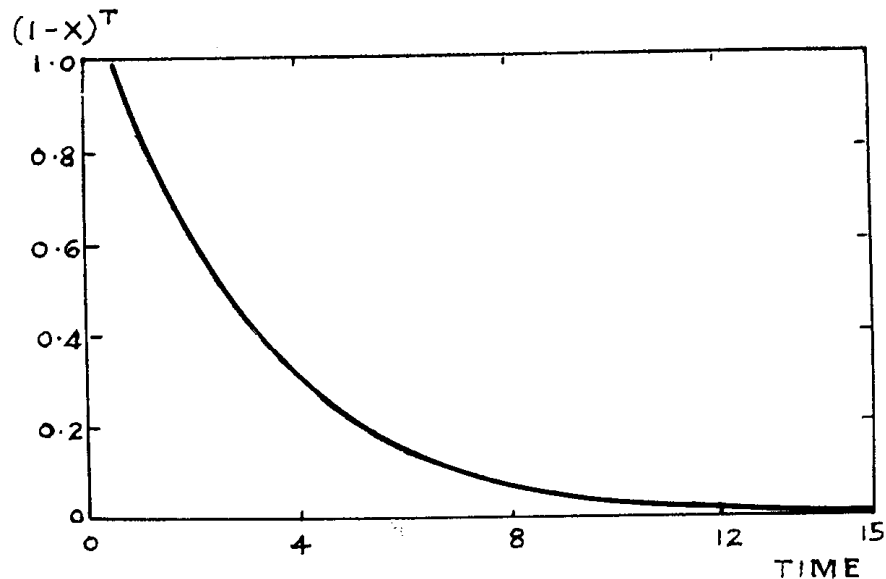


Fig. 3. Decay Curve

(The shape of this curve has been estimated as  $y = (1 - x)^t$  where  $x$  is the proportional loss in effectiveness from one period to the next. Here  $x = 0.3$ .)

With a range of advertising budgets over a period of time it is possible to estimate the revenue curves for various types of advertising in different areas.<sup>20</sup> It would be impossible to estimate the effectiveness of different types of promotion at once, as simultaneous use would mask individual effects. It will also be necessary to account for other changes such as changes in taste, and population size and structure.

### Conclusion

In considering the implications of this proposition to advertise wool, whether as part of an overall promotion scheme or not, it is obvious that there are a large number of unspecified variables involved. For instance, economists are uncertain of the structure of consumer preference, and knowledge of what factors affect the demand for various products is at best hazy. It is not known to what extent advertising could increase aggregate demand, or what effects it might have on secular changes in demand. Similarly, the extent to which price and income elasticity of demand could alter in the face of an advertising campaign, is not known. In fact, the effects of advertising in various competitive and price situations are very difficult to establish. As well as this the reaction to advertising can be delayed, and the effectiveness of copy and media varies.

The trend towards decreasing use of wool in wearing apparel and soft-goods may be inevitable if the demand for fibres is increasing at a greater rate than wool supply. However, it does seem that judicious advertising may favourably influence demand trends for wool. Until empirical studies indicate the nature of the relationship between advertising and demand for wool in different situations it is not possible to say whether the advertising of wool is effective, or if it is, to what extent it should be used in various locations.

<sup>20</sup> An approach to this problem is set out in A. P. Zentler and Dorothy Ryde, "An Optimum Geographical Distribution of Publicity Expenditure in a Private Organisation", *Management Science*, Vol. 2, No. 4 (July, 1956).