USING THE PRICE/QUANTITY MODEL TO INDICATE POWER IN MARKETING CHANNELS

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Abstract

The literature of vertical channel power reveals a noticeable neglect by academics of how pricing strategy evaluations can help to better understand vertical channel relationships. This paper builds a conceptual framework which helps visualize the effects of power on the marketing channels via pricing strategies.

Introduction

It is evident from the abundance of literature* that the concept of power has become a central issue to marketing channel theorists. Robert Dahl (1963) suggested that power can be thought of as the ability to make someone do something that he would have otherwise not done. Using this notion of power, El-Ansary and Stern (1972) operationally define the power of a channel member as, "...his ability to control the decision variables in the marketing strategy of another member in a given channel at a different level of distribution." Typically most studies on power have been concerned with:

a) viewing power as the cumulative magnitude of one's various sources (i.e., coercive, expert, referent, legitimate, reward) (Hunt and Nevin, 1974), (French and Raven, 1968);
b) the controversy as to whether power is a constructive or destructive force (Assael, 1969), (Mallen, 1967);
c) the countervailing forces in the marketing channels (Etgar, 1976) (Galbraith, 1967); or,
d) the quantifying and measurement of power - most viewing power as the dependence and/or control of one channel member on another channel member (Brown and Frazier, 1978), (El-Ansary and Stern, 1972), (Lusch, 1976), (Rosenberg and Stern, 1971).

Although these methods have gone through the full spectrum of analysis (from theory to calculus models), they still reveal too little in terms of understanding channel power, thus a new approach is necessary.

This study differs from most previous studies in its perspective of the importance of the various power bases. It is herein assumed that specific sources of power, however interesting to isolate and examine, are unimportant for the purpose of understanding the general mechanism, and assessing the effects of power on channel relationships. This assumption, of temporarily neglecting the nature of the power source, is practical when one considers the multitude of combinations of power sources that might have to be investigated. What is needed is a more general approach that explains the mechanism of power. This paper introduces a model which reveals a reliable and valid indicator of power. This indicator is found in the process that is part of all systems of exchange - that is, pricing strategies.

*An expanded version of this paper with more extensive bibliography is available from the authors upon request.

Conceptual Framework

Rationale for Economic Approach

Power in marketing channels has been studied from many different perspectives. From an economic perspective the actual exercise of that power, through the price/market mechanism can be explicitly portrayed. Only from a socio-economic perspective can we understand not only the effects of power on the major actors in the channel but its effects on society as a whole. Marketing, in most contexts, regards its inquiry as more realistic than economics, eschewing formal theory, very often, in favor of measurement and empirical verification. However, in the words of Bertrand Russel (1971),

"Economics as a separate science is unrealistic, and misleading if taken as a guide in practice. It is one element - a very important element, it is true - in a wider study, the science of power".

The marketing "channel of distribution" is often viewed as a "system of exchange". It is indeed unfortunate, however, that the vertical aspects of channels have been virtually left out of economic theory, except for static market structure price determination. This has been the case because economic analysis did not take into consideration the nature of the role of the middlemen. Economists have also labelled the effects of advertising, legal regulation, etc., as 'market externalities'. These two factors are precisely the grounds on which many marketers have dismissed the usefulness of economic analysis. Not only did economic analysis not include middlemen's actions, it also excluded the effects of marketing on imperfect markets.

Two points must be considered at this time. First, Hawkins (1967) has developed an economic approach which includes the middleman in the price/quantity model. With this approach, he introduces the concept of bargaining, which has been heretofore absent in economic literature (see Figure 1). The second point is the major justification of this paper. Economists have traditionally viewed a system of exchange as a relationship that exists between a buyer and a seller. The exchange was defined by the classical price/quantity model, and was ultimately determined (defined) by the conditions of supply and demand. However, since the concept of bargaining has been introduced, one must now consider a third condition which will ultimately determine price - that is power.

While economic theory is relatively uncomplicated, the real world is not. There are many types of relationships that may occur in an economic market, and it is therefore useful to classify market conditions based on the degree of horizontal competition any member in a vertical channel faces, at all the different levels. Mallen (1967) and Hawkins (1967) have cited many different possibilities, such as: a monopolistic competitive seller with purely competitive buyers; purely competitive sellers with a monopsonistic competitive buyer, which in essence is the scenario discussed in Galbraith's theory of countervailing power (1954).

Due to the growth of large retailing chains which were forced to respond to the power previously held alone by large manufacturers, many industries now have powerful countervailing forces on both ends of the channel. Since this is presently a common phenomenon, it will be used in part to explain and illustrate the model developed in this paper.

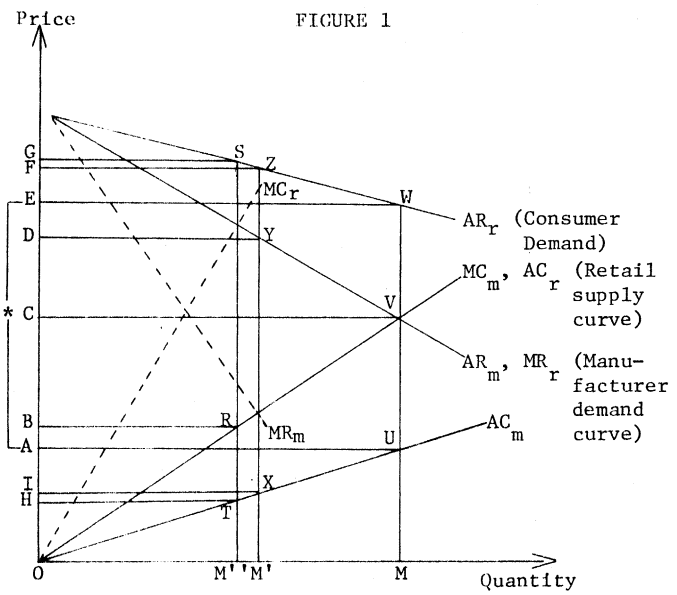
Generally speaking, when sellers are more powerful than buyers, they can sell their products at such a price that the latter's margins upon reselling would be minimal - the sellers reap all the 'pure' profits in the channel. Alternately, if the buyers are more powerful than the sellers, they can purchase the goods at the lowest price that just allows the manufacturer to remain in business - the buyers reap all the 'pure' profits in the channel. When both the seller and buyer have relatively equal strength, an interesting phenomenon occurs - the art of pricing.

This sets the stage for the present study, which is a conceptual, theoretically-based set of paradigms which examine the nature of "channel-of-distribution" power through the price/market mechanism. The authors examine the usefulness of the model using an empirical study of the relationship between small independent Canadian retailers and their suppliers.

The Model

In **Figure 1**, we see an economic illustration that explains a vertical channel relationship. For purposes of clarity it incorporates only one middleman, nevertheless, the analysis could easily be extended to any desired dimension. Figure 1 illustrates that manufacturer demand prices AR_m are established by the retailer's demand curve MR_r, whose demand prices AR_r will ultimately be established by consumer demand.

FIGURE 1



*Area of Bargaining

Source: Adapted from E.R. Hawkins, "Vertical Price Relationships" in "The Marketing Channel: A Conceptual Viewpoint", B. Mallen (ed.), New York: John Wiley and Sons, Inc., 1967.

It is evident from the model that under the conditions of countervailing power there is a minimum and a maximum price at which goods can be sold between channel members (i.e., exchange price). From **Figure 1**, one can see that the minimum price at which a manufacturer can sell quantity M (the jointly agreed quantity) to the retailer is price A, derived by the average cost curve of the manufacturer (AC_m). This price is just enough to keep him in business. The maximum price that a manufacturer could sell the goods to the retailer is price E, that price which is the most the consumer would be willing to pay. Since pricing at exactly E would effectively allow no margin to the retailer, one would intuitively ask the question, 'why use the retailer'? If the manufacturer attempted to bypass the retailer in order to sell directly to the consumer, he would have to assume all retailing costs as well as the manufacturing costs, which would change the AC_m. Therefore, in order to lend reasonableness to the model the manufacturer must sell the goods at a price marginally greater than A. However, there is a broad range of prices at which the exchange can take place, represented by the 'Area of Bargaining' between prices A and E.

From **Figure 1**, one can see how economic analysis can be useful in terms of understanding the effects of power on channel relationships. Quantity OM represents that quantity of goods at price E that maximizes the total revenue from the consumer, at the point of intersection of MC_m and MR_r (i.e., intersection of supply and demand curves). It is obvious that the manufacturer would prefer to sell quantity OM' at price D (equating MC_m to MR_m), which would maximize his profit. However, if the market situation is one of monopolistic competition/monopsonistic competition, both will realize that the optimal decision would be to maximize joint profits.

When price C is the exchange price, there is a balance in the channel - a power tradeoff. Price C is where both maximize joint profit, and neither has a decided advantage over his channel partner. In other words, neither is exerting power. When the exchange price is above or below price C, one of the channel members is exerting power. When the exchange price is in the range of C to E, the manufacturer would be considered as the more powerful actor (assuming that power is the ability to influence the marketing strategy of other actors in a vertical channel).

Price as an Indicator of Power

Much can be said concerning the exchange price in a vertical channel. The closer a manufacturer prices AC_m, the less is his influence on the channel. As the exchange price moves toward the final retail price, the stronger is the influence of the manufacturer. For the following analysis, in which there is only one middleman, when the manufacturer is said to be stronger, the implication is that the retailer is weaker (i.e., exerts less influence on the strategies in the channel) and vice versa. Weak and strong are viewed in terms of power, i.e., the ability to change the marketing strategy of another vertical channel member.

Illustration of the Model

To illustrate the many possible pricing strategies that can be employed in a vertical channel, we examine the case of the powerful manufacturer, the powerful retailer, and the case when both have relative equal strength. Although manufacturer and retail strategies are of obvious importance, one cannot exclude consumer demand if the analysis is to have any practical value. In addition to channel pricing strategies, two types of consumer demand will be illustrated: that of a down-

ward sloping curve, and the market condition where the retail price is fixed. Retail prices would be fixed at a certain or given level when the consumers of Product W, for example, do not believe that it is that much better or differentiated from other products, and would not be willing to pay higher prices for it (oligopolistic competition).

It must be understood at the outset that when a manufacturer raises his price to retailers, or when retailers lower the price they will pay to a manufacturer, one is witnessing more than simple bargaining. When a manufacturer raises prices to retailers, he is in fact lessening the steepness of his demand curve (AR_m) forcing it upwards. When a retailer can pay less than the price economics would dictate, he is lessening the steepness of his supply curve (AC_r), forcing it downwards. The effect of the manufacturer forcing up his demand curve is to allow him to charge higher prices to the retailer. The effect of the retailer pushing down his supply curve is to allow him to pay less for his purchases.

The key point is that price changes are the result of repositioned supply and demand curves. These curves do not just move, they are shifted, forced to a new position by the powerful actor(s) in the channel. Hence, when the channel exchange price rises or declines, one is witnessing an act of power. The greater the difference between the actual channel exchange price and price C, the greater is the power that is being exerted by one of the channel members.

Scenario 1: The Powerful Manufacturer.

When the manufacturer is strong enough (and knowledgeable) he will always attempt to equate marginal cost (MC_m) and marginal revenue (MR_m) to determine quantity and price. **Figure 1** shows the profit that would accrue to the manufacturer who equated MC_m and MR_m, when faced with a downward sloping demand curve, selling a differentiated product. Equating MC_m and MR_m offers him profit of I-X-Y-D. The profit that the retailer would obtain under these conditions is D-Y-Z-F. It is evident that the manufacturer is obtaining the lion's share of the profits.

If the manufacturer has extensively greater power, relative to the retailer, he could produce quantity OM' (equating MC_m to MR_m), but sell that quantity at a higher price to the retailer, actually forcing the retailer's marginal revenue curve to the right (upward). **Figure 2** illustrates the effect on both manufacturer and retail profit when the AR_m (MR_r) is forced upward. As the manufacturer raises the price (maintaining the same output) retail profits decline, until they are at a minimum. The manufacturer can continue to price in this manner as long as the retailer has no better business alternative. It is logical to assume that the manufacturer will allow the retailer certain profits in order to stay in business. If one conceptualizes the shaded areas as the measures of power (instead of profits), one can see that pricing strategies are good indicators of power. As the manufacturer forces AR_m to AR_m' and eventually AR_m'', the retailer is caught in the position of having to absorb the price increase himself. Thus, the retailer's power (and profit) is reduced as the manufacturer exerts his strength. In effect, retail power (and profit) is inversely related to the manufacturer's selling price.

Another course of action is open to the manufacturer when his product is not highly differentiated from other products, and the retail price to consumers is (in effect) fixed, due to competition (oligopolistic competition). Since the price is fixed at the 'market level', the manufacturer will produce that quantity which equates MC_m to MR_r since this will extract the greatest total revenue from the consumer. However, if the manufacturer is strong enough to shift the AR_m (MR_r) to the right, he will raise the price to the retailer without affecting the final price to the consumer. The effects of forcing the AR_m to AR_m' and eventually AR_m'' are shown in **Figure 3**. The smaller the shaded area in **Figure 3** becomes, the less power the retailer has. The higher the manufacturer raises the price, the more evident is his ability to change the marketing strategy (demand) of the retailer, and thus, the more evident is his power.

Scenario 2: The Powerful Retailer (Dominating Power).

As was the case of the manufacturer, the retailer will equate MC_r to MR_r when he has the knowledge and capability of doing so. Figure 1 illustrates the respective profits earned by the retailer and manufacturer when the retailer attempts to exploit the manufacturer, which are B-R-S-G and H-T-R-B respectively. This graph shows that the retailer prefers to buy quantity OM'', with a corresponding higher retail price of G. In this scenario, the retailer reaps most of the profits from the channel, leaving much less for the manufacturer. If the profit areas are once again conceptualized as measures of power, the retailer is now exerting more strength relative to this channel adversary.

When the retailer is much more powerful than the manufacturer, he can force the manufacturer to sell quantity OM'' at a lower price than B. **Figure 4** illustrates what happens to the profits and power of the manufacturer as the retailer forces the supply curve (MC_m, AC_r) downward, to the point where the average costs of the retailer is shifting MR_r to the left (downward) and MC_r to the right (downward), which lowers the AC_r. The accompanying slope of the MR_r (AR_m) is steepened, representing a more monopolistic demand situation.

The manufacturer will sell quantity OM'' to the retailer at a price marginally higher than that of his average cost, as long as he perceives no better business alternatives. Once again, it has been illustrated that the power of any vertical channel member is inversely related to the exchange price of the goods, and that power can be visualized as the profit area in a price/quantity model.

When the environment facing the retailer is one of oligopolistic competition, in which retail prices are very competitive, or even fixed, the retailer will want to purchase quantity OM (reasons are the same as in Scenario 1). However, if the manufacturer cannot extract price C (**Figure 1**) from the retailer, the latter can force the AC_r curve downward and buy the goods at lower prices, and still be able to resell them at the going market price.

Scenario 3: Manufacturer and Retailer (Countervailing Power).

"To begin with a broad and somewhat too dogmatically stated proposition, private economic power is held in check by the countervailing power of those who are subject to it. The first begets the second. The long trend towards concentration of individual enterprise in the hands of relatively few firms has brought into existence not only strong sellers, as economists have proposed, but also strong buyers as they have failed to see. The two develop together not in precise step but in such a manner that there can be no doubt that one is in response to the other". (Galbraith, 1954)

Galbraith (1954) introduced the concept that competition which is supposed to be the force behind the

FIGURE 2

DIMINISHING RETAIL POWER

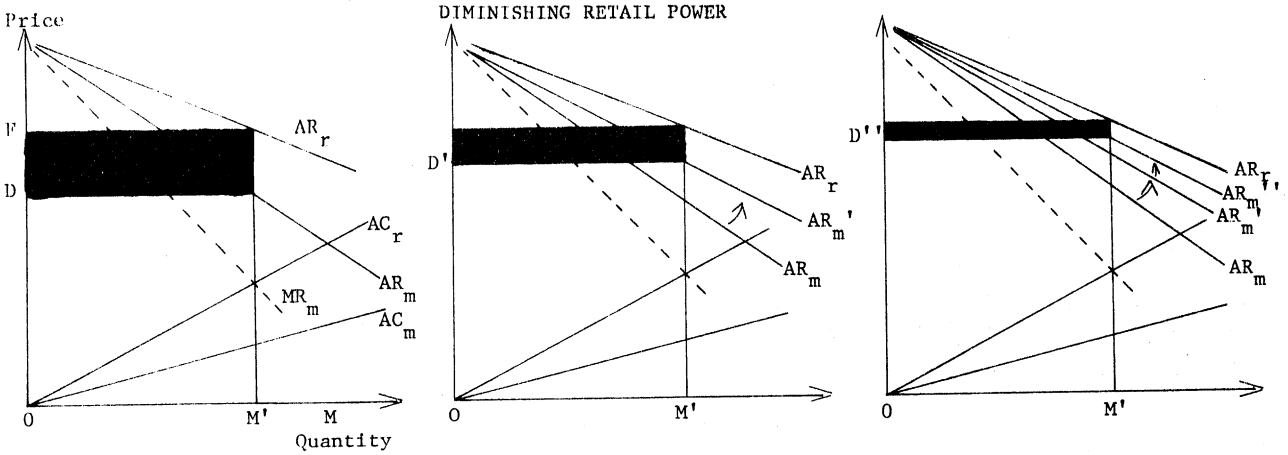


FIGURE 3

DIMINISHING RETAIL POWER (OLIGOPOLISTIC COMPETITION)

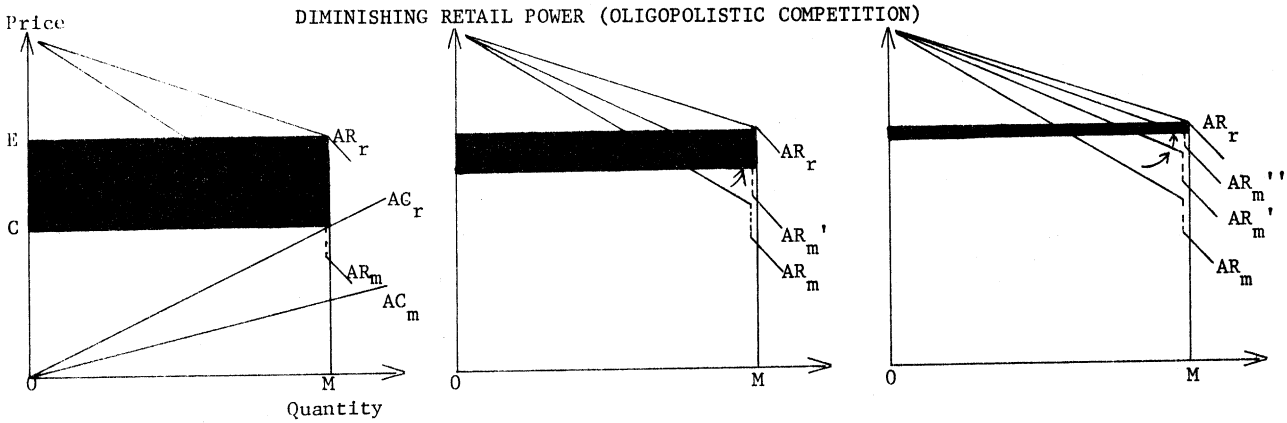


FIGURE 4

DIMINISHING MANUFACTURER POWER

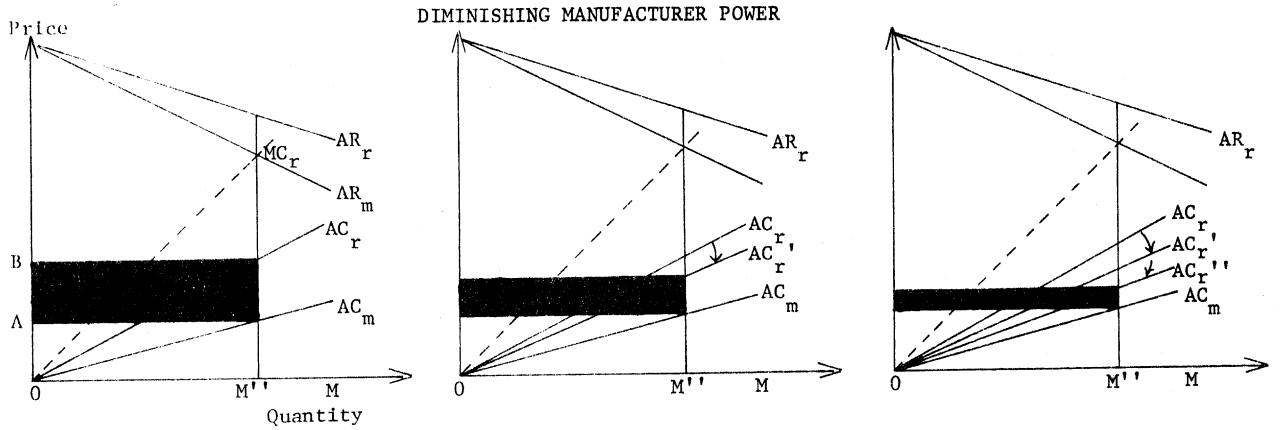
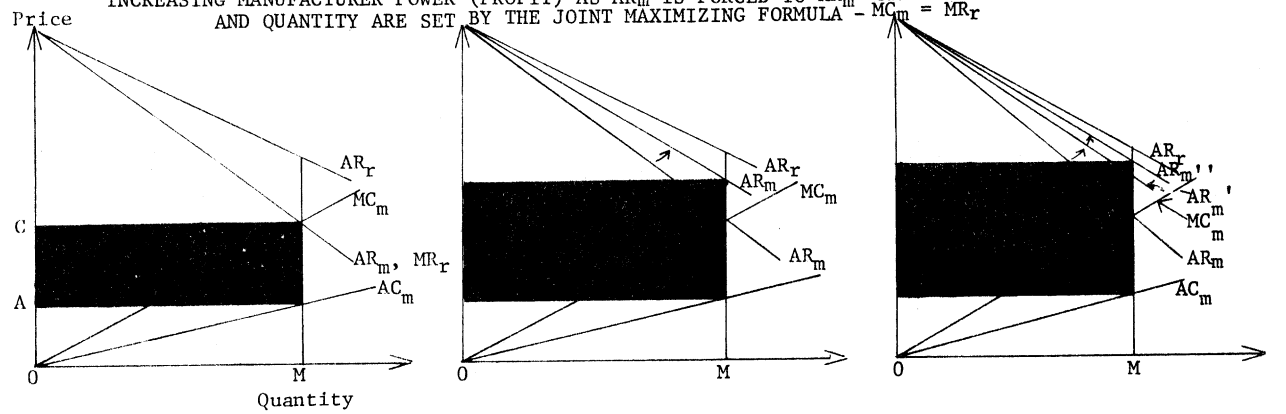


FIGURE 5

INCREASING MANUFACTURER POWER (PROFIT) AS AR_m IS FORCED TO AR_m' AND AR_m'' WHEN PRICE AND QUANTITY ARE SET BY THE JOINT MAXIMIZING FORMULA - $MC_m = MR_r$



'automatic regulator' in the market place, has in certain situations been replaced by the 'countervailing power' of large buyers. This concept actually extends beyond the mere study of distributive channels but also to the rise of powerful trade unions, big government, etc. In theory, it results in lower retail prices, an increase in general social welfare, and greater efficiency. This may not be true in its entirety. Several economists, notably Hunter (1971) have demonstrated that multiple line retailers tend to develop in size mainly in order to exploit economies of scale in organizational and merchandising techniques. Such scale economies certainly do include those of buying advantages which can begin to make the case for countervailing power. These retailers can negotiate prices and terms to the advantage of themselves vis-à-vis their competitors. Usually size of purchase makes the appropriate discount available which the small retailer prices. The variety chain store which has really developed since the early 1950's has a different orientation. These operations (e.g., Sears, Marks and Spencer, J.C. Penney, etc.) have channel integration and/or control as one of their strategic goals. These stores usually operate with a standardized, though wide, line of merchandise, standard layout and store style, a national catalogue or mail order operation as well as directly hierarchical organization, training and financing programs. These stores can and do exercise "countervailing" and sometimes "dominating" power.

Figure 1 shows the power (and profit) of both manufacturer and retailer when both perceive that they cannot affect, to any great extent, the marketing strategy of the other, which are A-U-V-C and C-V-W-E respectively. When this state is reached, the power as illustrated by the rectangular region A-U-W-E, is equally shared by both. However, as the manufacturer attempts to raise the exchange price (Figure 2), or as the retailer attempts to lower the exchange price (Figure 4), the power bases shift. As Figure 5 illustrates, as the manufacturer exercises his power, shifting AR_m to AR_m' and ultimately AR_m'', the shaded area gets larger, and the retailer pays the price, yielding his position of equality, or seeks new business opportunities.

An Empirical Study

This study was conducted in February 1980. Sixty-two manager/owners of small independent Canadian retail outlets furnished responses to a mail questionnaire asking for their opinions on a number of issues concerning the relationship between themselves and their suppliers. The retailers were asked to respond to statements concerning the power that a manufacturer derives from using specific 'brand names'. The study (Wieskopf, 1980) revealed strong agreement with the following propositions:

1) the retailer is willing to pay a premium price (10% more) for a brand name;
2) the retailer is more willing to pay a premium price when the manufacturer provides financial assistance;
3) the retailer considers quality, fit, price, total product mix, and other service variables as important as brand name;
4) as retailers use more brand name products, they expect more marketing services from the manufacturer, such as advertising, personal business advice, merchandising assistance, etc.; and,
5) as retailers use more brand name products they tend to rely on and expect better credit provisions from the manufacturer.

TABLE 1
MANUFACTURER POWER SOURCES

Power Variables	Literature Terminology
manufacturer stipulation of order size	legitimate
manufacturer stipulation of delivery	legitimate, coercive
manufacturer freedom to alter order composition	legitimate, coercive
manufacturer ability to dictate price	legitimate, coercive
manufacturer provision of business aid	expert
manufacturer provision of merchandising assistance	expert
manufacturer willingness to collect receivables	legitimate, reward
riskiness of changing suppliers	reward, identification

Implications

The results of the survey indicate that a majority of the retailers that responded exist in an environment depicted by our first scenario, i.e., the powerful manufacturer. The dominating characteristics of this scenario are that the manufacturer can stipulate order size (quantity), alter order composition and dictate price. Due to the extent of these manufacturers' power basis, one cannot conclude that brand name alone is the most important or relevant power source. Credit availability, financial assistance as well as the offering of other marketing mix variables are as important to the retailer as brand name. This gives substance to our position that to attempt to identify and quantify all power sources, especially in the scenario of a dominating channel member, would be a wieldy task. However, there is a set of variables that are cited as major power sources of the manufacturer which can be identified and quantified. These variables are the manufacturers' ability to dictate price as well as quantity. In our terminology (Figure 2), this is the ability of the manufacturer to choose to produce and sell quantity OM', at price D, or D' or even D'', depending on the degree of his strength. Moreover, the relative strength of the manufacturer in relation to the retailer can be measured using the actual exchange price and the corresponding profit areas as the indicator. In our study, the willingness of the retailer to pay a premium of 10% for a brand name product (which is the willingness to allow the manufacturer to control the decision variable 'acceptable price' - i.e., the shifting of AR_m to AR_m' to AR_m'') as well as the willingness of the retailer to allow the manufacturer to stipulate quantity without the usual corresponding alterations in price level, is a clear economic example of extreme dominating manufacturer power.

Conclusion

We have demonstrated that in a vertical marketing channel, the extent to which a channel member can shift the demand and supply curves of another member is a good measure of one's power. A good indicator of this power can be seen in pricing strategies of the classical price/quantity model. Hence, power can be viewed as the ability to reduce the rectangular profit area of another member, by forcing that member to alter his marketing strategy. As always, when one attempts to practically apply theory to the real world, many assumptions must be made. This analysis assumes that each firm has the ability to estimate cost, supply and demand curves, and that every actor in the system is a profit-maximizing firm.

Power is a direct consequence of the ability of a market actor to shift his demand or supply curves exogenously. Usually this benefit accrues to the particular actor himself. What we see, then, is that the relative ease of portraying economic events can perhaps lead to a different understanding of social relations. Thus we try to interpret social interactions between channel members by the economic impact of those actions. Admittedly we have ignored the possibility that the drive to power is possibly satisfied by economic means itself; thus completing the circle - power feeds power! Rather, this analysis was confined to a synthesis and review of the notion of the economic consequences of channel power.

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