EXPLAINING PRESTIGE PRICING: AN ALTERNATIVE TO BACK-BENDING DEMAND

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Backward bending demand is the standard explanation that marketing textbooks give for the pricing of prestige products like fine jewelry and luxury cars. This solely demand-side explanation overlooks two supply-side considerations that all marketing textbooks acknowledge as important: 1) product promotion and 2) the market power of the firms marketing prestige goods. Incorporating these two factors, this article offers marketing educators and other marketing professionals an alternative explanation of prestige pricing that does not require them to assert that the demand for prestige goods is backward bending. Our explanation shows how promotion, demand, output costs, and business profitability are intertwined within a firm’s marketing mix.

Prestige pricing, product promotion, and monopolistic competition are all standard topics in principles of marketing courses. Yet for the past forty years, the typical textbook’s analysis of prestige pricing takes into account neither promotional efforts nor monopoly power. To anyone with a modicum of training in marketing and economics, the idea of trying to explain a market’s prices without considering the relevant supply-side factors will seem inadequate. Yet this is precisely what is done by the typical marketing text when it comes to analyzing the pricing of prestige goods. In what follows we argue that this failure has led many marketing texts to prematurely conclude that prestige goods are exceptions to the economic law of downward sloping demand.

Looking at the constellation of views on prestige pricing found in marketing textbooks over many years, the most commonly held view is that the demand for prestige goods is backward bending; contrary to the law of demand it is upward sloping at low prices, and it is downward sloping only so long as price remains above some unspecified threshold level. A typical example, reproduced from William D. Perreault and E. Jerome McCarthy’s (1999, 13th ed.) Basic Marketing text, is shown in Figure 1; the backward bending curve, labeled DD’, is purported to be a demand curve.

This article offers marketing textbook authors, marketing educators and students, and other marketing professionals an alternative to using backward bending demand in understanding prestige pricing. Our explanation derives from both the demand and supply sides of the markets for prestige goods and it shows how promotion, demand, output costs, and business profitability are intertwined. The purpose of our article is to offer a vivid illustration of how important it is to incorporate the marketing mix concept into the prestige pricing analysis directly.

The Evolution of Prestige Pricing in the Principles of Marketing Course

Although they have offered no persuasive alternative, economists, who resent marketing’s applied economic approach, tend to speak condescendingly of marketing educators who make an exception to the law of (downward sloping) demand with their backward bending “demand” analysis of prestige pricing (Figure 1). Perhaps these economists would be more soft spoken if they knew that this analysis originated in an economics textbook authored by the distinguished trio of F.R. Fairchild, E.S. Furniss, and N.S. Buck in 1939.1 Citing these authors, Edward R. Hawkins (1954) introduced backward bending demand to professional marketing literature. Using the same geometry shown in Figure 1, Hawkins explained that the positively sloped segment slopes upward because consumers are suspicious of low prices—consumers buy less as price is reduced. E. Jerome McCarthy (1960, pp.640-41) seems to be the first author of


a marketing textbook to fully embrace Hawkins' backward bending demand theory to explain prestige pricing.\(^2\)

Since 1960, a host of marketing texts have used backward bending demand curves to explain prestige pricing. Examples include Perreault and McCarthy (1999, p.528); Berkowitz, Kerin, Hartley, and Rudelius (2000, p. 387-388); Pride and Ferrel (2000, p. 540); Evans and Berman (1995, p. 513); and Solomon and Stuart (1997, p. 410). A typical explanation of the backward bending demand curve asserts that

"...there is not always a negative relationship between cost and amount purchased. To the contrary, occasionally there are situations where (otherwise sane) people desire a product more as it increases in price! For prestige products ... an increase in price may actually result in an increase in the quantity demanded. Thus the demand curve actually slopes upward for prestige products. If the price is lowered the product is perceived to be less desirable and demand may decrease" [Reference to backward bending demand curve graph.] (Solomon and Stuart 1997, p. 410, parentheses and italics in the original).

With few exceptions (e.g., Kotler 2000), none of these texts integrate product promotion into their explanations of prestige pricing explicitly, although promotion efforts are an integral part of marketing such products. Interestingly, most marketing textbook authors emphasize else-where in their texts as an independent topic the importance of product promotion in stimulating consumer demand and shifting demand curves (Perreault and McCarthy 1999, p. 387; Berkowitz, Kerin, Hartley, and Rudelius 2000, p. 372; Pride and Ferrel 2000, p. 518 and p. 539).

Table 1 summarizes how the marketing textbooks referenced in this article approach prestige pricing. The bottom two rows of the table illustrate that not all marketing textbooks use backward bending demand curves nor do they completely divorce their discussions of promotion from their discussion of prestige pricing. A few authors wisely look beyond the demand side of prestige good markets for an explanation of pricing behavior. For instance, Bearden, Ingram and LaForge (1998, p. 281) discuss the association of price with quality, and emphasize the fact that price may be taken as a quality signal to reduce the perceived risk of purchase.

Most closely aligned with the alternative approach we will present is Kotler (2000), who emphasizes the importance of product information. Kotler explains the general notion that promotion, in general, and advertising, in particular, can present aspects of a product's quality and can have important effects on a product's price. This view is, of course, broadly supported by a large literature in professional marketing journals showing that promotion, advertising, and sales promotions (such as demonstrations or product sampling) are all

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Source: Perreault and McCarthy (1999)
Table 1
How Marketing Textbooks Explain Prestige Pricing

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Terminology Used</th>
<th>Explanation Given</th>
<th>Product Examples Listed</th>
<th>Is a Back-Bending Demand Approach Used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berkowitz, Kerin, Hartley, and Rudelius (2000) pp. 387-388</td>
<td>prestige pricing</td>
<td>setting a high price to attract status-conscious consumers</td>
<td>branded vodka, Rolls-Royce cars, diamonds, perfumes, fine china, Swiss watches, crystal</td>
<td>YES</td>
</tr>
<tr>
<td>Converse, Huegy, and Mitchell (1952)</td>
<td>judgement pricing</td>
<td>&quot;Customers...will actually buy more at a somewhat higher price than they would at a lower price.&quot;</td>
<td>NA</td>
<td>YES</td>
</tr>
<tr>
<td>Evans and Berman (1995) pp. 513-514</td>
<td>prestige pricing</td>
<td>price-quality association: consumers may not buy when a price is too low</td>
<td>unknown brands or non-branded products</td>
<td>YES</td>
</tr>
<tr>
<td>McCarthy (1960) pp. 640-641</td>
<td>prestige pricing</td>
<td>consumers are concerned about the quality of too inexpensive items and draw irrational conclusions</td>
<td>NA</td>
<td>YES</td>
</tr>
<tr>
<td>Perreault and McCarthy (1999) pp. 526, 528</td>
<td>prestige pricing</td>
<td>setting a high price to suggest high quality or high status</td>
<td>luxury products such as furs, jewelry, perfumes</td>
<td>YES</td>
</tr>
<tr>
<td>Pride and Ferrel (2000) p. 502</td>
<td>prestige pricing</td>
<td>prices are set at an artificially high level to provide prestige</td>
<td>prescription drugs, perfumes, cars, liquor, jewelry</td>
<td>YES</td>
</tr>
<tr>
<td>Solomon and Stuart (1997) p.410</td>
<td>demand for prestige products</td>
<td>higher price/higher demand</td>
<td>luxury cars, jewelry, country club memberships, accommodations at exclusive resorts</td>
<td>YES</td>
</tr>
<tr>
<td>Bearden, Ingram and LaForge (1998) p. 281</td>
<td>prestige pricing</td>
<td>association of price with quality</td>
<td>gold credit cards, expensive cars, professional services</td>
<td>NO</td>
</tr>
<tr>
<td>Kotler (2000) pp. 508-509</td>
<td>psychological pricing</td>
<td>image pricing: consumers use price as indicator of quality</td>
<td>gin, perfumes, expensive cars</td>
<td>NO</td>
</tr>
</tbody>
</table>

important factors that impact product price, quality perception, and the profitability of the firm (see, for example, Farris and Reibstein 1979; Kirmani 1990; Homer 1995). Additionally, in a book devoted entirely to pricing tactics, Nagle and Holden (1987) provide important insights into the link between pricing and consumer perception of a product's "prestige" that is potentially influenced by promotional strategies.

Building upon this literature and expanding upon Kotler's general direction of thought, we now present a model of prestige pricing that specifically integrates product promotion and market power. To make our model amenable for use in undergraduate classrooms, we explain all of our results in the context of a simple geometric framework and a numerical example.

Monopolistic Competition, Product Promotion, and Prestige Pricing

Prestige goods are typically sold by monopolists, oligopolists, or monopolistically competitive firms (firms with market power). Relative to a perfectly competitive
firm, a firm with market power has much greater discretion over the prices it charges and generally has much greater incentive to promote and advertise its product. Because virtually all marketing texts recognize that marketing activities are most relevant to a firm with market power, we analyze prestige pricing from this perspective (e.g., see Perreault and McCarthy 1999, p 652).

Consumer concerns about product quality can make it profitable for sellers of prestige goods to incur the costs of promoting and demonstrating or sampling the quality of their products on an individual basis. Although the marketing literature has long noted the positive impact that servicing customer needs has on firms’ profits (for a key reference see Zeithaml, Berry, and Parasuraman 1988), marketing texts have not often looked at prestige pricing from this broader perspective. In fact, the quality of fine jewelry and luxury automobiles, which marketing texts commonly hold out as goods with backward bending demand curves, are almost always promoted and demonstrated (or sampled) on an individual basis and in a variety of ways. Prospective auto purchasers are offered test drives and warranties. Likewise, diamond shoppers are offered money back guarantees and quality certificates, and are encouraged to inspect stones under a microscope.3

Individual product demonstrations such as these shift a firm’s demand and marginal cost curves, and hence its profit maximizing price and quantity levels.4 Using standard economic principles to analyze product promotions and demonstrations or product sampling provides an explanation for the existence of a backward bending price/quantity path that is a consequence of, rather than an exception to, the law of demand.5 Specifically, our explanation relies on the two most fundamental economic principles: 1) the law of diminishing marginal consumption value, i.e., the law of demand, and 2) the law of decreasing marginal returns.

Promotion Efforts and Product Demand

By educating consumers and allaying their uncertainties about product quality, product promotions, and demonstrations or product sampling can increase consumer demand.6 There is empirical evidence that consumers are generally willing to pay higher prices for known products than for unknown products (Farris
Figure 3
Demonstration Thoroughness and the Marginal Cost of Output

and Reibstein 1979). Furthermore, a more "thorough" or complete promotion effort such as higher frequency, a longer warranty or a money back guarantee that holds for a longer time period, will shift demand by a greater amount than a less "thorough" promotional activity. There is no economic principle that will tell us the exact sizes of the demand shifts induced by changes in the thoroughness of promotional efforts to advertise or otherwise present quality. But the law of demand, applied to promotion efforts, does provide a prediction about the relative sizes of shifts resulting from a series of equal changes in promotion efforts. That is, we assume that promotional efforts are subject to the law of demand.

Assuming "promotional efforts are subject to the law of demand" means that as promotional efforts become progressively more thorough, consumers become progressively less willing to pay for additional "levels" of these efforts. Figure 2 shows product demand shifting up from D₀ to D₁, and finally to D₂ as promotion thoroughness rises from level 0 to 1 to 2. To make the geometry more accessible to students, we assume throughout the article that demand curves are linear. This assumption does not alter the generality of our argument.

Notice that the demand for output shifts upward by successively smaller amounts: the vertical gap between D₁ and D₀ is $500 (= $1,700-$1,200) which is less than the $800 (= $1,200-$400) gap between D₁ and D₀. The reason, to repeat a previous point, is that we have applied the law of demand to the thoroughness of product quality promotion—increasing the thoroughness of demonstrations and other promotional efforts increases the amount the consumer is willing to pay for the product but at a diminishing marginal rate. Finally, beyond a certain level, she/he would stop buying the product.

Promotion Efforts and Output's Marginal Cost

Providing customers with individualized promotions of product quality is not a costless activity. It is an activity that raises the seller's marginal cost. There is no economic principle that will tell us the exact sizes of the marginal cost shifts created by changes in the thoroughness of such promotions. But a basic economic law, the law of diminishing marginal returns, allows us to anticipate the relative sizes of the marginal cost shifts resulting from ratcheting up the thoroughness "level" of these promotional efforts. According to this law, as promotions become progressively more thorough, the marginal cost of the firm's output will rise by progressively greater amounts.

Figure 3 shows how the firm's marginal cost for output shifts once the law of diminishing marginal returns is applied to the thoroughness of product quality promotions. In the figure the subscripts 0, 1, and 2 represent low, intermediate, and high levels of promotions of product quality. Importantly, the rising levels of thoroughness have caused the
marginal cost of output to shift upward by progressively larger amounts. As illustrated in the figure, the gap between $MC_2$ and $MC_1$ is $700 (=1,200-500)$ that exceeds the gap of $400 (=500-100)$ between $MC_1$ and $MC_0$.

**Promotion Efforts, and Optimal Price and Quantity Relationship**

Adding the relevant marginal revenue curves to Figure 2, and then superimposing the resulting geometry upon Figure 3, yields a diagram that can be used to identify the optimal price and quantity of output associated with each thoroughness level of product quality promotion. The overlaying of figures is presented in Figure 4. This figure is used to determine the optimal prices and quantities that correspond to different levels of product promotion over time. If promotion effort is low (level 0), the profit maximizing quantity is 600 at the intersection of the marginal revenue for low-level promotions, $MR_0$, and the marginal cost for low-level promotions, $MC_0$. By locating the demand price on $D_0$ above a quantity of 600 units, one finds that the profit maximizing price for the low level of promotion effort is $250. Analogously, at the intermediate level of promotion effort (level 1), the optimal quantity and price of output are 1,400 units and $850. Finally, at the high level of promotion effort (level 2), 1,000 units and $1,450 are optimal.

In Figure 4, the optimal price and quantity pairs ($250; 600), ($850; 1,400), and ($1,450; 1,000) are delineated as points A, B, and C. Connecting these points allows us to trace out the locus of points representing the firm's optimal price and quantity combinations that occur at the different promotions levels. Along the upward sloping portion of this curve (from A to B), any increases in the level of promotion lead to higher profits for the firm. Intuitively, the reason is that consumers value the increasing levels of promotion efforts by more than enough to offset the additional costs that such promotions entail.
Table 2
Demonstration Levels, Optimum Price/Quantity Combinations, and Firm Profitability

<table>
<thead>
<tr>
<th>Demonstration Levels</th>
<th>Optimal Price</th>
<th>Optimal Quantity</th>
<th>Total Revenue</th>
<th>Total Cost</th>
<th>Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$250</td>
<td>600</td>
<td>$150,000</td>
<td>$60,000</td>
<td>$90,000</td>
</tr>
<tr>
<td>1</td>
<td>$850</td>
<td>1,400</td>
<td>$1,190,000</td>
<td>$700,000</td>
<td>$490,000*</td>
</tr>
<tr>
<td>2</td>
<td>$1,450</td>
<td>1,000</td>
<td>$1,450,000</td>
<td>$1,200,000</td>
<td>$250,000</td>
</tr>
</tbody>
</table>

* Global maximum profit.

In other words, the output demand shifts induced by increasing thoroughness in the low to intermediate range are greater in magnitude than are the corresponding shifts in the marginal cost of output. On the other hand, along the downward sloping portion of this curve (from B to C) any increases in the thoroughness of promotions reduce the firm’s profit. In this range, increases in the promotion efforts lead to shifts in the marginal cost of output that are of greater magnitudes than the corresponding shifts in output demand. As we have constructed Figure 4, the global maximization of profits occurs at point B (where effort level is 1, price is $850, and quantity is 1,400).

The numerical example in Table 2 summarizes and further clarifies our analysis. It shows how the firm’s cost, revenue, and profit vary as the level of demonstration/promotion/warranty rises. Notice that profit is highest at the promotion level 1. This highest profit corresponds to point B on the locus shown on Figure 4. While these numerical values are specific to this particular example, this pattern of profits could be generated for a broad range of parameters.9

Notice that the locus connecting points A, B, and C in Figure 4 is similar in shape to the backward bending “demand” curve for prestige goods found in marketing textbooks. This locus is not, of course, a demand curve. Looking at this locus, one would expect that a firm experimenting with different levels of promotion efforts to move price and quantity in tandem at “low” prices and in opposite directions at “high” prices.10

These price and quantity adjustments do not represent an exception to the law of demand. They are a direct consequence of the laws of demand and diminishing marginal returns as they apply to product quality promotions.

Summary and Conclusion

Marketing texts wisely advise students to hold as a guiding principle the importance of reaching the right mix of the four Ps: product, price, promotion, and place. Yet the importance of the interaction between promotion and price of prestige goods has long been obscured by the narrow view that the demand for such goods is backward bending. However, our model and numerical example in this article illustrate how increasing promotional activities that are characteristic of prestige product marketing (for example, individual demonstrations, sampling, and warranties) can generate a backward bending locus of optimal price and quantity combinations. However, such a locus is not a demand curve and is not an exception to the law of demand or any other economic principle. Instead, it demonstrates the fact that the law of demand is applicable to the explanation of prestige pricing. Finally, our explanation shows how promotion, demand, output costs, and business profitability are intertwined within the marketing mix.

The compelling reason to teach this new approach to prestige pricing is the fact that it broadens the one-dimensional explanation of prestige pricing in the marketing textbooks. Marketing students will now be able to see the subtle interrelationships of marketing variables behind the prestige pricing concept. As explained, pricing can be based on consumer perceptions, and promotions play a major role in shaping perceptions. Our model exposes these interrelationships.

The opportunity to teach pricing from this broadened perspective helps marketing educators to be more analytical and shows students that pricing is part of a wider marketing policy mix. Teaching students to think lucidly about the marketing mix means more than requiring them to parrot the four Ps on an examination. If marketing educators want to expand students’ thinking about the marketing mix, it behooves us to broaden their thinking whenever it is possible. If backward bending demand continues to be the standard approach to teaching students about prestige pricing, we would have to say that a golden opportunity has been squandered.

References


Endnotes

1 These authors were full professors at Yale University. Fairchild was the Knox Professor of Economics, and Furniss was the Pelatit Peri Professor of Social Science. Furthermore, this textbook was a fourth edition published by the Macmillan Company.

2 Converse, Huey and Mitchell (1952) do express Hawkins' ideas in a marketing textbook, but do so briefly and without showing the geometry in Figure 1. They comment that "customers may fear that at the low price [merchandise] cannot be of good quality, and will actually buy more at a somewhat higher price than they would at a lower price."

3 There are many types of promotions within each industry as individual firms idiosyncratically mix different levels and varieties of promotional activities. As an anonymous referee pointed out, what Polo Ralph Lauren does is not exactly replicated by every firm in the polo shirt industry, nor are the promotional activities of Mercedes exactly replicated by all luxury auto makers. The purpose of this paper is not to provide a taxonomy of the exact activities undertaken by particular firms. Rather our purpose is to explain how such activities affect optimal pricing in general.

4 Many marketing activities do not shift both demand and marginal cost curves. General or institutional advertising, for example, can be analyzed just like a "fixed cost." Such advertising increases average cost and can, if successful, increase primary demand, but has no affect on marginal cost. Textbooks frequently discuss the economics of this type of marketing, but to our knowledge a discussion of marketing activities that shift marginal cost, the way that individual product promotions must, is not usually provided to students.

5 Standard price theory does admit the possibility of an upward sloping demand for a "Giffen good." For inferior goods, increases in income tend to boost amount demanded. However, a Giffen good is a special kind of inferior good. The Giffen paradox states that a change in price in one direction leads to a change in consumption in the same direction because the income effect is greater in magnitude than the substitution effect. One example that has sometimes been given to illustrate this phenomenon is the substitution of butter for margarine when real income increases. However, according to Browning and Zupan (1999; p. 93) there is little agreement among economists that there has ever been a real world example of a Giffen Good. According to Bannock, Baxter, and Davis (1998), it is "too much of a freak to be of anything except theoretical interest." Importantly, for our purposes note that prestige goods are most decidedly not "Giffen goods." Diamond jewelry and luxury automobiles are not even inferior goods (one of the preconditions of a Giffen Good); they are "superior goods" and are consumed in much larger quantities as incomes rise.

6 In this paper we focus on durable goods such as luxury cars and diamonds. Their durability obviously makes product quality concerns paramount to consumers. The explanation of non-durable prestige goods depends most importantly on the rarity of the good. Using such an approach, Coelho and McClure (1993) explain that the law of demand can be reconciled to fashion cycles that have often been misconstrued as indicative of the existence of backward bending demand. The explanation of prestige pricing for used goods would fall between these two cases.

7 The existence of an upper price threshold has been empirically shown in marketing, see, e.g., Monroe (1971); Gabor and Granger (1966); and Sowter, Gabor and Granger (1971) as documented by Lilien, Kotler and Moomy (1992, p. 203).

8 Assuming the marginal cost (of output) curves are horizontal simplifies the diagrams without fundamentally affecting conclusions.

9 To generate the numerical example in the text, the equation for D1 is P=400-(1/4)Q, the equation for D2 is P=1,200-(1/4)Q, and the equation for D3 is P=1,700-(1/4)Q. Of course,
this implies that: MR₂ = 400-(1/2)Q; MR₁ = 1,200-(1/2)Q; and MR₃ = 1,700-(1/2)Q. The numerical example and geometry in the text are based on the simplifying assumptions that demands are linear, and that marginal costs are linear and horizontal. These simplifications are solely for the purpose of making our results easily accessible to undergraduate students. It is important to note that the model's results are not fundamentally altered if these simplifications are dropped.

Such experimentation may be necessary so that firms with incomplete information can identify the optimal level of thoroughness with which to promote their products. Economic models often make the simplifying assumption that firms have, or behave as if they have, complete information. In such models, firms' choices quickly lead them to where global profits are maximized. But in the world of incomplete information in which we live, firms often experiment in order to iterate in the direction of higher profits.