

gin and volume requirements of the intermediaries in the channel of distribution.

- **Channel Cooperation.** **Channel cooperation** is dependent, in part, on the pricing decision (see GLOSSARY entry C.6). Channel member cooperation is encouraged by providing incentives, including various discounts and allowances. Each of these, however, is an expense. Prices must be set at a level that will make required channel member incentives affordable. This means that **discount structure determination** must sometimes be made before a final price is determined (see GLOSSARY entry C.11).

## SUGGESTIONS FOR FURTHER READING

- MONROE, KENT B. "Buyers Subjective Perceptions of Price." *Journal of Marketing Research* 10 (February 1973), pp. 70-80.
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# C.22 Pricing Methods

## APPLICATION OF PRICING METHODS TO THE PRICING DECISION

Price is a more complex variable than it may appear on the surface. One major pricing decision is to determine the list or base price for each product, but that is certainly not the end of the pricing decisions to be made. Based on the list price, the structure of discounts and allowances to be offered must be determined. Numerous pricing policies must also be established that define how the base price will be applied in a variety of situations. In addition, there are a number of subsidiary pricing problems, such as the relationship of prices in a line of products and the pricing of new products that are part of the pricing variable. In this complex of decisions, the subject of this entry, determining the base or list price, is central, since other decisions flow from it.

**Pricing Methods and the Pricing Process.** The process for setting product price is described in GLOSSARY entry C.23 as having three steps:

- **Pricing Objective.** The first step in pricing a product is to define a pricing objective. The pricing objective defines what the price decision is to accomplish such as maximizing profits, maximizing revenues, or maintaining

price stability in the market. The pricing objective also suggests how product price should relate to competitive prices. Setting the **pricing objective** is considered in GLOSSARY entry C.23.

- **Determinants of Price.** The second step in the pricing process is to seek and analyze information on the factors that must be considered in determining price. These determinants of price include factors related to demand for the product, the cost of the product, and the environment in which it competes. **Price determinants** are considered in GLOSSARY entry C.21.
- **Pricing Methods.** The third step in pricing a product is to select and apply a pricing method that will follow the direction of the pricing objective and utilize information from the pricing determinants to generate a product price. Alternative **pricing methods** are the subject of this GLOSSARY entry.

**What Are Pricing Methods?** Pricing methods are formulas, models, or processes used to develop a product price. Six pricing methods are described and evaluated in the next section. They are (1) the cost-plus method, (2) the target-return method, (3) the value-pricing method, (4) at-the-market pricing, (5) the marginal method, and (6) the multidimensional method.

The methods vary widely in approach. Some offer specific pricing formulas (cost

plus), while others are largely heuristic (multidimensional). Some methods are cost oriented (target return and cost plus), others are demand oriented (value pricing), while others consider both cost and demand (the marginal and multidimensional approaches). Choice of a method requires careful evaluation of the requirements of the pricing problem and the availability of data necessary for application of the method.

### ALTERNATIVE PRICING METHODS

Six pricing methods and their strengths and weaknesses are described below as a guide to selecting an appropriate method.

**Cost-Plus Pricing.** Under the **cost-plus method**, also termed the **full-cost method**, price is determined only by product cost. Simplicity is one of the attributes of the method. To apply it, the cost of the product, including allocated overhead, is determined and a markup is added to provide a profit. The markup, usually expressed as a percentage of cost, is often based on industry tradition or an estimate of what the market will accept.

**Markup pricing**, a variation of cost-plus pricing, is widely used by retailers and wholesalers. Under this method, a standard markup is added to the cost of the product, the markup varying with the type of product. In the markup pricing method, the markup is expressed as a percentage of the selling price, not the cost. Thus the markup becomes the gross margin on the product. The markups used are strongly influenced by the traditions of the particular field.

Cost-plus pricing methods are widely used, particularly in situations where demand is not known and would be too expensive to determine. Retailers with thousands of different items to price find the method practical as do producers of nonstandardized products and services. Pricing the product over cost seems to assure that there will not be a loss on sales made, but, as noted below, this may not be a safe assumption. If the markups used are standard throughout an industry, as is frequently the case, markup

pricing will tend to bring about competitive stability in pricing.

A major deficiency of cost-plus pricing is its inadequate consideration of demand. Because cost-plus pricing does not consider demand, it is not an optimizing method. Although it may lead to a satisfactory profit, it fails to explore demand and demand elasticity to determine whether a higher or lower price would lead to greater profits. Many turnover-oriented retailers, such as supermarkets, mass merchandisers, and discount stores, have abandoned traditional markup pricing in favor of pricing methods that consider the different demand elasticity of products. Instead of pricing to assure satisfactory unit profits, they price to improve turnover and enhance total profit.

The cost-plus method also fails to consider the true nature of product cost. In applying the cost-plus method, average product cost is usually derived from the previous year's volume and cost results and is assumed to remain the same regardless of the volume produced and sold. However, average product cost, by the law of diminishing returns, will vary with volume, and volume, or the quantity demanded, will depend on the price. (See GLOSSARY entry C.21 on product cost.) If the price developed through this pricing method results in lower than assumed quantity demanded, average product costs will be higher than assumed and significant losses occur. If sales volume is higher than assumed, the result can be the opposite, with large profits resulting. Figure C.22-1 illustrates the loss potential of this approach.

**Target-Return Pricing.** Like the cost-plus method, **target-return pricing** is a cost-oriented method. It is identified with the automobile industry, but is widely used in other industries as well. This method is sometimes referred to as the **breakeven method** because of the use of breakeven charts in its application.

Fixed and variable costs must first be determined and the behavior of variable costs with changes in output estimated. As shown in Figure C.22-2, variable and total cost will tend to show the decreasing and then in-

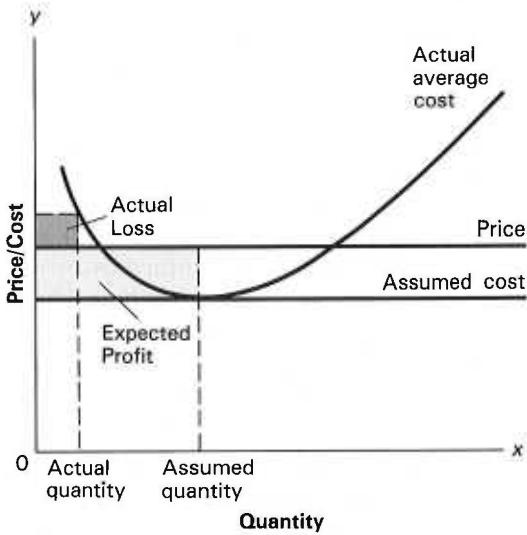


FIGURE C.22-1  
Cost-Plus Pricing

creasing rate of change dictated by the law of diminishing returns. Expected output ( $A_0$ ) must then be determined for the planning period, usually a year, and total cost at that output determined. A desired rate of return on cost is then added to the cost ( $A_1 - A_2$ ). Total cost plus profit ( $B_0$ ) is divided by units of output ( $A_0$ ) to determine price. The total revenue curve is shown extending from the

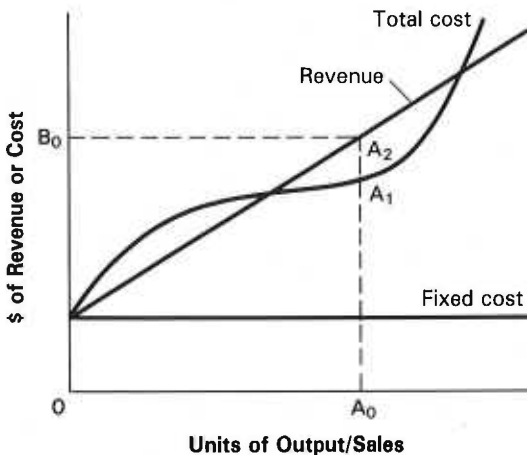


FIGURE C.22-2  
Target-Return Pricing

origin through the target-cost-plus-return point. The price can also be derived mathematically using the breakeven formula and solving for price (see GLOSSARY entry D.5 on breakeven).

The strengths and weaknesses of target-return pricing are much like those of the cost-plus approach that it resembles. Like the cost-plus method, target-return is easy to apply, largely because it does not require determination of demand. Treatment of cost in target-return is better than in cost-plus since fixed and variable costs are separated and the change in cost with volume changes is recognized. Like the cost-plus approach, the great weakness in the target-return method is the failure to consider demand. In order to determine price, output or sales volume must first be assumed. But price is a major factor in determining what the sales volume will be. Unless the market is very stable or price is an unimportant factor in consumer selection, the method is likely to give unreliable results with a danger of substantial lost profits.

One variation in the use of breakeven charts attempts to introduce demand into price determination. Costs are determined as before, and a target profit amount set. Rather than assuming a level of output, a range of trial prices are used to plot alternative revenue curves. These are shown in Figure C.22-3. For each price, it can then be determined what level of sales volume would be necessary to reach the target profit using either the breakeven graph or formula approach. Demand is introduced by gathering expert opinion or using historical data to determine the reasonableness of reaching the required sales level at the various assumed prices. In effect, by this indirect method, a demand curve is being derived. (See GLOSSARY entry C.21 on approaches to estimating demand.) If extended, this approach becomes comparable to the marginal approach explained below.

**Value-Pricing Methods.** Value pricing refers to a variety of pricing approaches that are based on demand or "charging what the market will bear." Value pricing is most applicable in situations where unique products

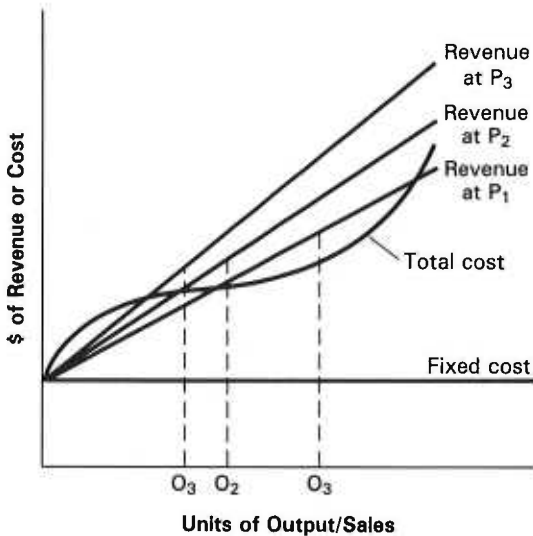


FIGURE C.22-3

**Target-Return Method with Alternative Prices**

offer benefits to customers that far exceed their production cost. Computer software, for example, is very inexpensive to reproduce, yet it may have great value to a customer. Some value-pricing methods require definition of the demand curve for the product (see GLOSSARY entry C.21), while others rely on benefits analysis or consumer perceptions of product value gathered by survey.

Marketers of established products sometimes make estimates of the demand curve for a brand as a guide to making price adjustments. Most often the demand estimate attempts to establish one or two points on the demand curve that are adjacent to the current price. This can be done by market testing or other techniques discussed in GLOSSARY entry C.21. If the price and volume range under consideration is narrow, average variable costs may be projected to remain the same. The decision on price change can then be based solely on the elasticity of demand for the proposed price change. If demand is inelastic, a price rise would increase revenues and profits and thus be desirable. Elastic demand would suggest a lower price. The method depends

upon the ability to estimate demand, a difficult problem. Realistically, there must also be some estimate of likely competitive response since it could have a major impact on brand demand elasticity.

Another value pricing method attempts to substitute consumer perceptions of the value of the product for demand. In its simplest form, consumer perceptions of the value of a product are determined by survey by asking samples of consumers their likelihood of buying the product at a variety of prices. The percentages of those intending to buy at each price level are then converted into demand figures, forming points on a demand curve. Price is determined following the procedure discussed in the previous paragraph. For complex products, such as industrial equipment, prospective customers might be asked their perceived value of each of the attributes, features, or benefits of the product. Product price would then be formulated by summing the value of the benefits of the product. The consumer perceptions approach is most often used for new product pricing.

A third value-pricing method attempts to analyze the monetary benefits that a customer would receive from the product.<sup>1</sup> The marketer attempts to do a cost-benefit analysis as the purchaser would. The analysis begins by breaking down a product into its benefit components and estimating the financial value of each attribute to the customer. Costs of the product other than its price must then be determined. These would include such things as installation cost, operating costs, and training costs. Financial benefits less nonprice costs represent the most that a customer would be willing to pay for the product. Before accepting this as a price, the marketer must also compare results with prices of competitive products just

<sup>1</sup>See Benson P. Shapiro and Barbara B. Jackson, "Industrial Pricing to Meet Consumer Needs," *Harvard Business Review* (November-December 1978), pp. 119-27, and Ely S. Lurin, "Make Sure Product's Price Reflects Its True Value," *Marketing News* (May 8, 1987), p. 8.

as a prospective customer would do. In addition, comparisons of the demand derived price must be made with the marketer's projected product costs to determine profitability. This approach, used mainly by industrial marketers, is very complex in practice. However it does attempt to introduce demand into the pricing decision.

**At-the-Market Pricing.** When a marketer bases product price on the going competitive price, it is termed **at-the-market, going-rate,** or **competitive pricing.** In many markets, there is not a single price to which all competitors adhere. Rather, there is a band of prices, perhaps 10 percent on either side of the average. In such cases, pricing at-the-market means being within the band with an additional decision required to determine pricing within the band. (See GLOSSARY entry C.21 on competitive prices as a pricing determinant.)

At-the-market pricing provides a starting point for many price-setting decisions, with further modification and adjustment of the price based on other determinants. For example, the marketer with a differentiated product or a product tailored to a segment of the market may start with the market price and then adjust upward based on the perceived value of the differentiating features of the product.

The at-the-market approach is particularly applicable when competing in pure competition or oligopoly. In conditions approaching pure competition, marketers have little choice but to accept the going-market price, since they can sell all the product they wish at the market price, but not at a price above the market. In oligopoly, marketers frequently adopt the market price or follow the price leader in order to maintain pricing stability in the market. This is based on the belief that if one marketer raises price above the market level, competitors will not raise their prices, but will retain the lower price in order to gain market share from the higher priced product. If, on the other hand, one marketer cuts price, competitors will retaliate with an equal or greater price cut to forestall market share losses. The result could be

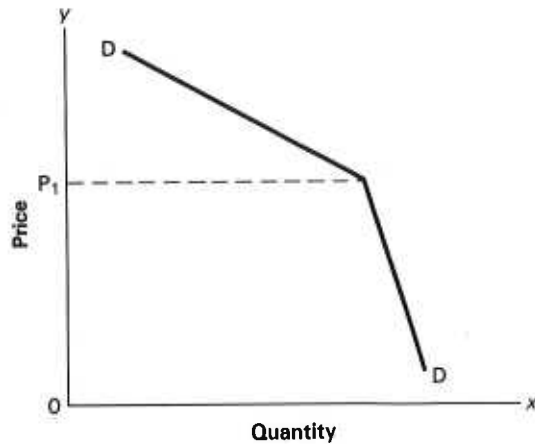


FIGURE C.22-4

**Kinked Demand Curve**

a price war. Individual oligopolists perceive their demand curve to be "kinked," as shown in Figure C.22-4, with the market price at the kink. (GLOSSARY entry A.1 describes **competitive market structures.**)

**Sealed-bid pricing,** used on construction projects or government contracts, utilizes a combination of cost and competitive determinants. Under sealed-bid pricing, a firm must offer a price for the job or product without knowing what competitive prices (bids) will be. Sealed-bid pricing generally begins by estimating costs for the project. Since most bid projects are unique and complex, cost determination is difficult. The profit margin added to cost must take competitive actions into account. Adding a smaller profit margin to costs improves the probability of winning the project over competition, but reduces the profit. Companies regularly engaged in bid pricing keep careful records of their own and competitive bids, using them to estimate the probability of winning bids at various profit levels.<sup>2</sup>

**The Marginal Method.** The marginal approach of microeconomics represents the

<sup>2</sup>For details on a statistical approach to bid pricing, see Arleigh W. Walker, "How to Price Industrial Products," *Harvard Business Review* (September-October 1967), pp. 125-32.

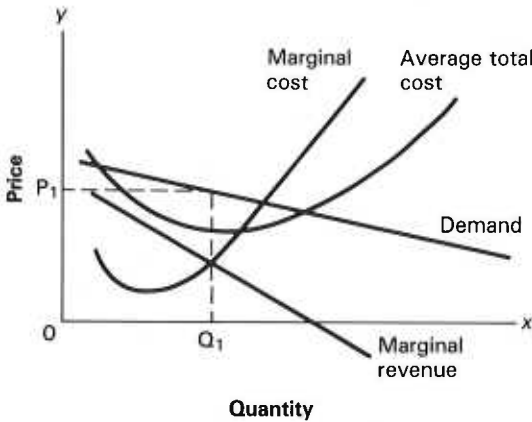


FIGURE C.22-5  
Marginal Approach to Pricing

theoretically ideal pricing method. It combines demand with a correct use of cost to derive an optimal rather than simply satisfactory price. It is usable for any competitive market structure.

The application of the marginal approach is illustrated in Figure C.22-5. A demand schedule for the brand must be determined. Demand is shown plotted in Figure C.22-5, together with the marginal revenue curve. **Marginal revenue** is the increase in revenue realized by selling one more unit. It is determined from the demand schedule by determining the change in revenue realized for each change in price and dividing by the change in number of units sold. Average total cost per unit must then be determined for each level of output. **Marginal cost**, or the cost of producing each additional unit, can be calculated from the total cost schedule. These two cost curves are also plotted on Figure C.22-5.

Ideal output is at the point where marginal cost equals marginal revenue. It is shown in Figure C.22-5 at the intersection of the marginal cost and marginal revenue curves. To increase output beyond this point would mean that the cost of the next unit would be greater than the revenue derived from that next unit and profits would decrease. To produce one less unit would be to give up potential profits. The price is deter-

mined by going from the marginal cost-marginal revenue intersection upward to the demand curve that indicates how much people would be willing to pay for the product at that volume level. Profit per unit will be the difference between the average cost and the price, and total profit will be average profit per unit times the number of units demanded. No other solution will yield a greater total profit.

The marginal approach can also be illustrated and calculated on an aggregate basis using the breakeven-style presentation. This is shown in Figure C.22-6. The total revenue curve is calculated from the demand schedule by multiplying price times quantity. It represents an aggregate demand curve, the total revenue realized at various prices. Fixed costs and total variable costs at various levels of output are also determined, plotted, and summed to give total costs. Optimal output is at the point where the difference between total revenue and total cost is greatest (and positive). Price is determined by dividing the revenue at that point by the output. The solution provided is the same as that from the unit cost presentation in Figure C.22-5. Incidentally, if fixed cost is plotted above variable cost, a solution can be developed to maximize contribution.

The virtues of the marginal approach are

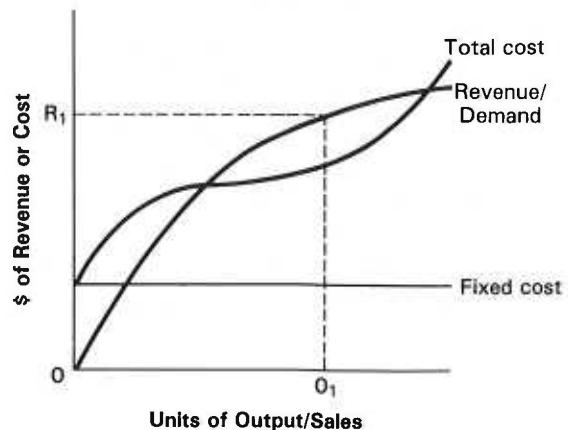


FIGURE C.22-6  
Aggregate Approach to Optimal Pricing

obvious. It correctly uses both cost and **demand**, combining them to provide an optimal price and output. In spite of this, the approach is rarely used in practice, largely because of the difficulty in determining the appropriate costs and the difficulty in accurately determining demand (see GLOSSARY entry C.21). In addition, this model makes the unrealistic assumption that all environmental conditions can be held constant. Most damaging of these is the assumption that competitors will not respond to pricing actions by changing their prices or other elements of their marketing mixes. Despite these limitations, the marginal approach is important because it represents a theoretical ideal against which other methods can be compared.

**Multidimensional Method.** The pricing methods described above probably represent only a small fraction of the total pricing decisions made by marketers. Pricing is a complex problem. Many factors must be considered (see GLOSSARY C.21) and only a few of them enter into any one pricing method. Information on any of the determinants is typically incomplete and of uncertain accuracy. In such situations, marketers tend to become intuitive, use rules of thumb, and break the decision into simpler steps. These pricing approaches might be called **multidimensional pricing methods**.<sup>3</sup>

Most multidimensional methods **have** three steps, described below.

- **Set a Base Price.** Most multidimensional approaches begin by establishing a base price to which adjustments can be applied. There are two commonly used bases. For an established product, the base is often the current price of the product. The pricing problem is to deter-

mine what change should be made in the current price. For other products, the base selected is sometimes the competitive or going market price. Here the problem becomes: How should our price relate to competitive prices? Other base prices are also possible.

- **Make Adjustments to the Base Price.** With the base price set, price adjustments are next made by considering, one at a time, the other determinants of price. (See GLOSSARY entry C.21 for a description of the determinants of price.) First among these determinants is the **pricing objective** that was defined as the first step in the pricing process. This determinant usually suggests an adjustment of price relative to competitive prices. Although information on many of the other determinants will be imprecise, each one should be examined to determine whether it indicates that the base price is too high or too low and adjustments made accordingly.
- **Research the Price Change.** If the result of the adjustment process indicates a need to change price, there is great value in testing the price change before it is implemented. Price changes can have major impact on product success. Considering the uncertainty of the information on which price changes are based, testing price changes is prudent. Many companies, anticipating the need to adjust price in subsequent years, make pricing tests a normal part of their research effort annually.

## SUGGESTIONS FOR FURTHER READING

- LURIN, ELY S. "Make Sure Product's Price Reflects Its True Value." *Marketing News* (May 8, 1987), p. 8.
- OXENFELDT, ALFRED R. "The Differential Method of Pricing." *European Journal of Marketing* 13 (1979), pp. 199-212.
- SHAPIRO, BENSON P., and BARBARA B. JACKSON. "Industrial Pricing to Meet Consumer Needs." *Harvard Business Review* (November-December 1978), pp. 119-27.
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<sup>3</sup>For a description of a multidimensional pricing approach, see Alfred R. Oxenfeldt, "The Differential Method of Pricing," *European Journal of Marketing* 13 (1979), pp. 199-212.



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August 16, 2010