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## Some Recent Experiments in Creative Pricing Strategies

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**Unless** government intervenes in private markets to influence prices (price supports for farmers, rent controls for low income housing, tariffs on foreign steel imports, etc.), prices are generally determined by the market forces of supply and demand. Over the past few years, however, some genuinely innovative pricing strategies have emerged in selected industries and in state government regulation of public utilities. This article surveys five recent efforts to set prices by using traditional economic principles in new and challenging environments.

### **Price Discrimination and Professional Sports**

In 2003, some major league baseball teams began charging higher ticket prices when archrivals and star studded opponents come to town (Fatsis, 2002). The New York Mets were the first to announce that fans would pay more to see the cross-town Yankees and the Barry Bonds-led San Francisco Giants. Other teams quickly followed suit. Actually, the Ottawa Senators and Pittsburgh Penguins had actually pioneered the practice during the previous hockey season.

Euphemistically labeled “variable pricing,” the strategy is actually a variant of third degree price discrimination, which is the practice of selling in more than one market and charging different prices to different groups of buyers (Clerides, 2004). Recognizing that fans are less responsive to price (consumer demand curves are less elastic) when

hated rivals and future hall-of-famers visit home ballparks, team owners have priced accordingly, and total revenues have risen. The new pricing strategy was initiated in an effort to offset astronomical player salaries, rising debt payments tied to stadium construction, and declining attendance due to a stagnant economy and growing fan disgruntlement (Long, 2005). Of course, various forms of price discrimination have been practiced by professional sports teams for some time (Sanderson & Siegfried, 2003; Zimbalist, 2003). Season ticket holders pay less per game than those who buy single-game tickets, box seats sell for more than bleacher seats, and weekend/holiday games are often more expensive than those played during the week. The biggest risk in the new strategy of valuing opponents differently is that those values will frequently change based on individual team success. Early results on fan response in both baseball and hockey have been mixed. While many teams are clearly desperate for revenue, misestimating consumer response (either in two different markets or for two different groups of opponents) can be a potentially dangerous error. In addition, when a team like the world champion Chicago White Sox fills its stadium, it is not easy to determine whether this is due to the presence of opposing stars or the success of its own team. In either case, however, management reaps the benefit of higher revenues which innovative price discrimination makes possible.

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## Electronic Commerce

Creative pricing schemes are increasingly evident in internet sales. In 1995, a northern California software engineer named Pierre Omidyar set up a Web site to help his girlfriend, who was a collector of Pez dispensers, buy and sell her collectibles. Originally called Auction Web, the quickly expanding small business was soon renamed eBay, the “e” standing for electronic and “bay” for the Bay Area of San Francisco where Pierre lived. In a few short years, eBay and other similar e-commerce outlets have transformed the way many people shop (Collier, Woerner, & Becker, 2002). eBay sells nothing but acts as a host that creates an environment where buyers and sellers worldwide can interact. Members can buy and sell just about anything in categories ranging from antiques to houses to automobiles to collectibles to toys to a category called “everything else.” Buyers pay nothing while sellers pay a modest fee depending on final selling price of the item. Auctions on eBay usually last between three and nine days, and no one knows the final price until the last second of the auction. Sellers specify a minimum bid where bidding starts as well as a reserve price which protects them from having to sell an item for less than they want for it. Throughout the auction, eBay computers monitor what is happening, but after collecting its fee from the seller at the close of the auction, eBay’s role is basically over. Buyer and seller then deal directly with each other via email to complete the sale. Many sellers accept online payments either through an eBay subsidiary called Paypal or other online money transfer services. Other sellers require either money orders or cashiers checks. eBay has a “feedback” feature where both buyers and sellers can officially record their individual experiences as either positive, neutral, or negative as well as leave comments. Such feedback becomes part of an eBay user’s “eBay rating” which alerts future buyers and sellers to the image a user has before dealing with that person (Melnik & Aim, 2002). The entire eBay market experience is a classic example of what economists call imperfect or monopolistic competition, a market structure used to describe the world of the typical small to medium sized business (Bajari & Hortacsu, 2004). There are a huge number of sellers and an even larger number of buyers. There is clearly ease of entry since all seller or buyer needs is a computer, internet access, an email address, although the seller also needs a digital camera to photograph items for sale. Sellers have some control over price with both the reserve price they set and the quality of the item they are selling. Advertising, through the item description and photograph(s), directly reaches those people who are

interested in the product for sale. Since each seller writes his or her own item description, those unique features which are emphasized (such as age, condition, scarcity, etc.) are up to the individual seller. Product differentiation is readily apparent. A prospective buyer can use the eBay search engine to look for a rather specific item, say, a 1933 Babe Ruth baseball card. eBay will instantly identify the number of these classics currently for sale. By consulting an individual seller’s item listings, the potential buyer can then compare condition, quality of picture or color, etc. and bid accordingly. From an economist’s point of view, perhaps the most interesting thing to observe on eBay is the movement toward a long run equilibrium price. Price guides exist for most collectible items like antiques, and sports cards, but the true price is the one that buyers and sellers actually agree on in an auction. A perusal of action on eBay indicates that when an item is scarce (few sellers are currently offering it), final selling prices may often end up much higher than those listed in price guides. Such high prices and (apparent) profits can attract new entry, and the market is temporarily flooded with listings of the item. These later auctions, however, usually result in final prices which are lower than previously and surprisingly close to the prices shown in price guides.

Another illustration of a familiar economic principle may be seen in the “Dutch auction.” This occurs when a seller lists multiple, identical items, say ten, and sells them to the ten highest bidders. This is a classic case of first-degree price discrimination (the practice of charging the highest price any consumer will pay for each unit of a good sold). The reserve price is the lowest price the seller will accept. If 10 buyers bid above the reserve price, each has revealed what he or she is willing to pay, and the seller has captured added revenue.

Electronic commerce is changing the way people do business and the way the economy operates (Anderson, Chatterjee, & Lakshmanan, 2003). While online sales still account for only a small fraction of total retail sales, over \$22 billion in merchandise was sold on eBay in 2004, much of it from private homes (Pluta, 2006). Even if one does not actually buy online auction items, learning about their prices can be a valuable piece of information to consumers.

## Dominant Firm Price Leadership and Fringe Firms

Price leadership is a practice under which a dominant firm sets prices that smaller firms in the industry then follow. While many examples exist, historically three of

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the most significant cases have been U.S. Steel, General Motors, and IBM. Fringe firms voluntarily follow the lead of the dominant firm because charging a price above that of the price leader would mean no sales. The dominant firm and its quality product are better known to consumers, and a claim by a smaller fringe firm that its product is superior to that of the dominant firm and, therefore, commands a higher price may be a rather difficult case to prove. Charging a price below that of the price leader may be equally dangerous to a fringe firm for two reasons. First, such a move might be a sign to consumers that its product is of lower quality which, even if true, is not something a firm wishes to announce publicly. Secondly, the larger firm generally has more ammunition for price war than a fringe firm.

The dominant firm price leadership model combines features of both the purely competitive and monopoly models (Pluta, 2006). Like a monopoly, the dominant firm faces a standard looking downward sloping demand curve (price and quantity demanded are inversely related) even though, in this case, it is not identical to the industry demand. Like a monopoly, the dominant firm sets price without worrying about how rivals will respond. While the monopoly had no rivals at all, the dominant firm has relatively minor rivals who are unlikely to challenge its price setting strategy. Like pure competitors, firms, which make up the competitive fringe are price takers with no incentive to set price on their own. Fringe firms face a perfectly elastic demand at the price set by the price leader. In a sense, both the dominant firm and the smaller fringe firms find their leader-follower relationship to be mutually beneficial. The price leader, faced with relatively high costs, is able to set a price that at least covers its opportunity costs and probably allows it to receive an economic profit as well. The smaller fringe firms sell as much output as they can, and, when their costs are lower, presumably receive higher rates of return than the dominant firm receives.

Further, if the dominant firm were to take steps to put some of the smaller firms out of business (through either price cutting strategies or merger), it would be moving dangerously close to monopoly and in violation of the antitrust laws (Gowrisankaran & Holmes, 2004). None of the firms in such an industry, therefore, would benefit more from competition than from this subtle form of collusion. Price leadership arrangement affects consumers, since prices are clearly above marginal costs and probably above average costs. Therefore, neither allocative nor technical efficiency is present, since resources are not allocated in the most efficient manner and the physical use of resources

is not minimized. The dominant firm oligopoly case falls far short of the efficiency standards set by the competitive ideal. More seriously, the dominant firm has little incentive to innovate, at least until its high cost plant becomes grossly obsolete. Fringe firms have an incentive to innovate but may have difficulty finding the resources to do so. The American steel industry and its (former) dominant firm, for example, have been very slow to adopt new technology over the past half century. This explains, at least in part, its relatively uncompetitive position in recent decades in international steel markets. As a result, smaller minimills, both domestic and foreign, have been able to gain market share at the expense of older, more established firms.

The U.S. automobile industry and its (former) dominant firm have also been slow to innovate. Technologically, American made automobiles today are not substantially different than they were in the 1950s. Air-conditioning, the major improvement, was developed outside the auto industry. The greater fuel efficiency and longer durability features of car engines today were pioneered by Japanese and European manufacturers. Just as monopoly often does not last forever, dominant firms, due to their own lethargy, often suffer a similar fate. Dominant firm pricing policies were no more innovative than the policy on technological change. In the steel, automobile, and (to a lesser extent) computer industries, therefore, reliance on a traditional method of setting prices has been damaging to leading firms. GM, U.S. Steel, and IBM might have suffered less disastrous fates had more innovation in pricing been pursued. In other industries in which a single large firm possesses a dominant market share, pricing strategies have shown greater respect for fringe firm potential. Results have been beneficial when firms have chosen not to practice price leadership (Pluta, 1984). For years, Gillette has dominated the razor industry while Eastman Kodak has similarly dominated the film industry. Anheuser-Busch now dominates in the brewing industry, Nike dominates in athletic shoes, and Phillip Morris dominates in tobacco. Xerox and Boeing have dominated in copy machines and aircraft manufacturing, respectively. Despite the introduction of more competitors, American Telephone and Telegraph (AT&T) is still the leading firm in the long distance telephone industry. With two-thirds of the market, Ocean Spray is the largest producer of cranberry juice. Except for Boeing which is heavily supported by government contracts, all of these dominant firms have pursued competitive pricing and resisted potentially dangerous price leadership strategies. Unlike GM, U.S. Steel (USX Corporation), and IBM

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all have done a far better job of maintaining their market shares.

### **Public Utility Regulation and Technical Efficiency**

Public utility commissions often set price equal to average total cost in order to achieve technical efficiency (Bjork & Connors, 2005; Kwoka, 2005). Several problems make the attainment of technical efficiency fairly challenging in practice. First, firms and utility commissions are dealing with estimated costs and revenues. No one can predict the future with 100 percent accuracy. There is, however, a natural incentive for the firm to estimate its costs high and its revenues low. If price is to be set equal to average total cost, it is better for the firm to err on the high side when estimating its unit costs.

Secondly, utility commissions must exercise some judgments in deciding what costs to allow. Monopoly firms are concerned about their image in the community and generally seek to be good citizens. One way to do this is through corporate philanthropy (Capaldi, 2005). If the goal is to lower rates to consumers as much as possible, a case can be made that corporate philanthropy should be zero. Such a commission decision, however, could unduly penalize local educational institutions and not-for-profit organizations. Executive perks like liberal expense accounts and company cars are also issues. Fewer perks would lower costs, and, ultimately, price to the consumer. Firm management, however, is likely to argue that executive perks are necessary to attract high quality executive talent that can use its skills to benefit consumers even further. Accounting matters may also be critical. Capital intensive firms need to write off depreciation of their equipment as a cost. There are several ways to calculate depreciation; each would produce a different current cost figure. Which method the utility commission should allow as well as what the allowable fair rate of return should be are other issues. All of these make the achieving of technical efficiency fairly complex in practice.

An example of the tendency to overstate costs was documented during the early 1990s. Nynex Corporation, the parent company of both New York Telephone and New England Telephone, created both subsidiary companies for the purpose of buying supplies to accrue quantity discounts that would lower costs that could be reflected in lower (regulated) telephone rates. The problem was that Nynex had an incentive to inflate the prices of this equipment to its regulated subsidiaries. The Federal Communications Commission (FCC) estimated that about \$1 20 million

of extra cost was tacked on by Nynex (Pluta, 2006). The extra costs, once accepted by the regulatory commission, became a part of each subsidiary's (New York Telephone and New England Telephone) cost base against which "fair rate of return" was allowed. Thus, even when regulators set price equal to average total cost, consumers may end up "overpaying" for telephone services. In recent years, public utility commissions have tended to be more flexible in setting prices. Needs for capital expansion and modernization as well as opportunities to pass various fees on to consumers are increasingly being taken into account. Pricing according to allocative efficiency (marginal cost pricing) and technical efficiency (average cost pricing) have tended to become guidelines and starting points for negotiation rather than hard and fast pricing rules.

### **Cross Price Elasticity and Brand Prices**

St. Louis-based Anheuser-Busch, the nation's leading brewer for decades, produces several brands of beer including Budweiser, Bud Light, Busch, Michelob, and others. In an effort to compete with other firms, Anheuser might consider lowering the price of one of its products, say, Budweiser. Such a price cut, however, might attract some customers who previously drank Michelob or Busch. How can the firm determine whether lowering the price of one of its brands will hurt sales of its other brands? The answer depends on the cross elasticity of demand (the percentage change in the quantity demanded of one good divided by the percentage change in the price of another good). If the cross elasticity between Bud and Michelob is high (+2.0, for example), then a 10 percent drop in the price of Bud would cause sales of Michelob to fall by 20 percent. On the other hand, if the cross elasticity between Bud and Michelob is relatively low (say +0.3), then a 10 percent drop in the price of Bud would only cause a 3 percent fall in the quantity of Michelob demanded. The increased sales of Budweiser would probably more than make up for the slight drop in the sales of Michelob. Knowledge of the cross elasticity value before tampering with price is often critical to a firm's future.

Another possibility, of course, is that a competitor such as the Pabst Brewing Co. might lower the price of one of its brands, Schlitz. What effect will this move have on the demand for beer produced by Anheuser-Busch? Since Schlitz is a popularly priced beer, a drop in its price is unlikely to affect the demand for premium beer Budweiser, light beer Bud Light, or super premium Michelob (Pluta, 1989). It may hurt sales of popularly priced Busch depending on the cross elasticity of demand.

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If the cross elasticity between Schlitz and Busch is high, the products are strong substitutes, then sales of Busch would drop appreciably. If the cross elasticity is low, then Anheuser-Busch would be relatively unconcerned about the Pabst pricing strategy. Estimates of cross elasticity have undoubtedly played a role in recent price cuts of Pabst's Schlitz, and the frequent sales prices offered by Coors on its light beer, as well as price drops in the specialized brews of selected mini-breweries (Arvidsson, 2005; Murray, 2005; Pinske & Slade, 2004). More expensive imported beers are also pricing more cautiously in order to compete more effectively in the American market.

The actual cross elasticity between various brands of currently consumed beers is as closely guarded a secret as the brewing formula for some beers. For individual sellers, problems have recently been increasing. Few merger possibilities remain in an industry that is highly

concentrated. As a result, in an effort to gain market share, more competitive pricing schemes have emerged even though a single firm has been dominant. Identifying specific market segments (premium, super premium, light, popularly priced, etc.) and quantifying the cross elasticity has taken on added importance in the setting of price by management.

### **Conclusion**

Markets still drive consumer and producer behavior while longstanding economic principles remain valuable guides to that behavior. Modifications of the traditional pricing practices are increasingly becoming part of the pricing strategies used by modern management. As long as they prove to be successful, continued innovation can be expected.

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## Biography

Joseph E. Pluta is the author or co-author of 12 books and over 40 articles in professional journals. He has worked as a consultant to small businesses, corporations, and foreign governments. He is the former editor of *Texas Business Review* magazine and was host of a weekly radio program. He has a BA and MA from the University of Notre Dame and a PhD from the University of Texas at Austin. He has taught at several universities and is presently professor of Economics and chair of the Department of Economics in the School of Management and Business at St. Edward's University. He has received the Ayres-Montgomery Award for Gifted Teaching, the Sears Roebuck Foundation Teaching Excellence Award, and the School of Business Outstanding Teaching Award. His current research interests include applied microeconomics and the history of economic ideas. He hopes one day to own his own business called Joe's Train Store.