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PRICE DISCRIMINATION LAW AND ECONOMIC EFFICIENCY

*Edward H. Cooper**

The Clayton Act, as amended by the Robinson-Patman Act (15 U.S.C. § 13), undertakes to outlaw price "discrimination" upon proof of threatened injury to competition, and subject to specified defenses. Lawyers often bewail the fact that administration of this statute frequently fails to conform to an economist's notion of discrimination. For the most part, the complaints are addressed to the clear fact that, as drafted and interpreted, the statute wreaks unnecessary damage. In the name of protecting competition, competition and economic efficiency are often curtailed.

To some uncertain extent, the economic losses encountered in the administration of a price discrimination law may be accepted in the pursuit of social or political goals. In the perennial ebb and flow of proposals to abolish or to amend the statute, however, arguments are continually made that it serves economic goals as well. Such arguments commonly fail to recognize the enormous difficulties that confront any statutory attempt to improve the pursuit of economic efficiency by regulating price discrimination. These difficulties are so great that a price discrimination statute is apt to serve economic efficiency only incidentally and accidentally, if at all. These difficulties do not arise from any supposed fact that price differences in real transactions must always rest upon foundations of economic efficiency. Often they do not. Instead, the difficulties arise from two quite different limitations on economic theory and our ability to apply economic theory in practice.

The first limitation arises from the fact that price discrimination is not a single phenomenon, but a wide variety of often complex phenomena, some of which may prove more desirable than nondiscriminatory pricing. Unambiguous demonstration that a given set of pricing transactions involves price discrimination does not by itself answer the question whether it is desirable discrimination. The first

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part of this essay is a brief and almost allusive reminder of the difficulties that must be encountered in attempting to determine whether a particular instance of price discrimination is intrinsically desirable.

The second limitation arises from the difficulties of determining whether a particular set of pricing transactions in fact involves price discrimination. These difficulties arise primarily from the complex variety of considerations that must be taken into account, and the inadequacy of available measuring devices to account for them. In some part, these difficulties also reflect unresolved problems in achieving a suitable abstract definition of price discrimination. In combination, these sources of difficulty pose great problems for the administration of any statute that might be drafted in an attempt to minimize interference with desirable competition and economic efficiency, whether the ultimate purpose is to improve economic performance or to pursue noneconomic goals. The second part of this essay is an exploration of these problems, illustrated in large part by familiar issues that have emerged in administering the present statute. There will be enough shift in perspective, however, to warrant omission of the obvious citations in order to present an abstract statement of the general problem.

Any reevaluation of present price discrimination law must account for these limitations of discrimination doctrine, both in theory and in practical application. The conclusion offered here is that, even with substantial changes in present law, economic efficiency is more apt to be restrained than furthered by any effort at legal control. If discrimination is to be outlawed, justification must be found in the pursuit of social and political goals, or in the belief that long-run economic values may be purchased only at some sacrifice of short-run efficiency.

I. THE DESIRABILITY OF PRICE DISCRIMINATION

In economic theory, price discrimination means only that the same product is sold to different customers at prices that are not related to differences in the costs of dealing with them. The clearest illustration of such discrimination is the charging by a seller of different prices even though all costs are equal. Despite the tendency of a modern ear to hear overtones of unjustifiable differentiation in the very term "price discrimination," economists do not mean to imply that all discrimination is undesirable. Matters are much more complex than that. There are many phenomena of price discrimi-

nation, some of which are often desirable. A blanket prohibition of price discrimination, accordingly, would often produce undesirable results. The complexity of these phenomena is sketched in this section, on the assumption that price discrimination is clearly involved. A discussion of the difficulty of identifying price discrimination is deferred to section II.

A. *Monopoly Price Discrimination*

A comparison of the results of uniform pricing by a "monopolist" with the results of price discrimination by a monopolist provides the simplest example of the complex results of discrimination. Assuming that the cost of serving all customers is equal, a competitive market would ensure equal prices to all customers. Different prices could be charged different customers only by a firm that has market power coupled with the ability to prevent low-price customers from reselling to high-price customers. The gains to such a seller from charging different prices to different customers result from variations in the intensity of their demand. Suppose, for example, that it costs \$49 to produce and deliver one fergustrol to any customer, and that there is one customer who would pay \$100 for a fergustrol, four who would pay \$90 for one each, and three more who would pay \$50 for one each. If the seller were to price individually, it would sell eight fergustrols for \$610, incur costs of \$392 (assuming there were no costs in identifying the different purchasers' distinctive demands and preventing arbitrage among them) and realize a pure profit of \$218. If the seller were forced to charge a profit-maximizing single price, it would charge \$90, sell five fergustrols for \$450, and realize a pure profit of \$205. At a uniform price of \$100, it would make one sale and realize total revenues of \$100 and a profit of only \$51, and at a uniform price of \$50, it would make eight sales, and realize total revenues of \$400 and a profit of only \$8.

The seller may not be the only one to benefit from the practice of substituting price discrimination for a profit-maximizing single price. In the example just given, the profit-maximizing single price would reduce output from eight units—the level that would be reached by competitive sellers—to five. In the real world as well, price discrimination can bring the allocation of productive resources and output closer to that which would occur in a competitive market, and it can make the product available to customers who otherwise would not enjoy it. The major obstacle to achieving this result lies in the difficulty and the cost of obtaining sufficient information about

the demand intensities of different customers. Ordinarily, customers are apt to be lumped into groups for purposes of discriminatory pricing. The result is likely to be reduced output as to the higher-priced groups of customers, and increased output as to the lower-priced groups. It may be that generally circumstances are such that on balance output will be increased as compared to that produced at the profit-maximizing single price. Even if it is not, however, the product will be made available to some customers who would not have enjoyed it at the profit-maximizing single price. In more extreme circumstances, it is possible to show that with plausible assumptions about declining costs, price discrimination can result in lower prices to all purchasers, or even in the production of a product that could not be produced at all if sales were required to be made at a single price.

The fact that price discrimination by a firm with market power may bring the allocation of resources closer to that which would be achieved in a competitive market does not lead to an easy conclusion that the law should allow such discrimination. Initially, it must be recognized that it may often be very difficult to determine the actual impact of discrimination on resource use. In addition, an expansion of output in one imperfect market may have been purchased only at the cost of attracting resources away from another imperfect market in which they were better employed. Finally, even if price discrimination brings the allocation of productive resources closer to the allocation that would result from competition, it is attended by income effects quite different from those that would be achieved by competition.

The income transfers that attend price discrimination are easily illustrated. Using the figures employed above, the discriminating seller who charges \$100 to the fergustrol customer with the most intense demand has extracted the \$51 "surplus" that the customer would have enjoyed at the competitive price of \$49. Despite a possible intuitive reaction that it would be better to allow customers to retain and enjoy the surplus generated by the intensity of their own desires, the income transfer itself may be desirable. One common example is the small-town doctor, whose income from discriminating against high-income patients results in locating an office where no doctor would serve if fees were forced down to a single level that could be paid by all patients. The high-income patients benefit by enjoying a service that would not otherwise be made available. Even if medical services would otherwise be provided, it may be reasonable to assume that many doctors

seek to attain a satisfactory income rather than a maximum income, and that the higher charges to rich patients "support" lower charges to poorer patients. The resulting transfer from the rich to the poor might well be approved. On a more general level, however, it may be difficult to establish useful criteria for appraising the desirability of enabling some customers to enjoy discriminatory prices below a profit-maximizing single price at the expense of income transfers from higher-price customers to the supplier.

Price discrimination, in short, is possible only because of market power. If competition were possible, it might generally be preferred. But once the requisite market power is present, whatever its sources, price discrimination may have either desirable or undesirable effects on resource allocation and income distribution, and it may be astonishingly difficult to identify and appraise such effects in individual cases.

B. *Discrimination and Price Competition*

Oligopoly markets present some of the most complex phenomena of price discrimination. Systematized price discrimination may provide a helpful or even essential means of stifling the temptation of individual firms to engage in price competition that proves costly for all. Sporadic price discrimination, on the other hand, may serve initially as the only source of price competition in a market in which none dare to cut prices across the board. Over time, it may proliferate into generalized competitive pricing, or at least lead the way to oligopoly stability at a lower price level. Prohibition of systematized price discrimination in such a setting could easily have desirable results, but prohibition of all price discrimination could prove very costly.

The multiple basing-point pricing system once practiced by cement producers may serve to illustrate the potentiality for adverse effects from price discrimination in an oligopoly setting. Under the system, many producing points became "basing points," while some were not. Prices to all customers were determined by calculating the cheapest total of a basing-point price plus rail-freight charges from the basing point. The irrationality of the system is most dramatically shown by considering the pricing practices of a nonbasing-point seller. Suppose that the price at the nearest basing point was \$1.45 a barrel, and that rail freight to the seller's location was twenty-five cents. The nonbasing-point seller would charge \$1.70 to a next-door customer who took delivery at the seller's own loading

dock, \$1.45 to a customer at the basing point despite freight costs of twenty-five cents, and \$1.70 to a customer who was located at a twenty-five cent rail-freight cost in the opposite direction from the basing point. Net receipts on the respective sales would be \$1.70, \$1.20, and \$1.20.

The aggregate cost to the cement industry of maintaining the basing-point system must have been staggering in terms of cross-hauling and increased selling costs. Yet the cement producers bore these costs; indeed, there was overwhelming evidence that the system originated in overt collusion and was maintained by overtly collusive behavior. The reasons for colluding to maintain such a costly system lie in its contribution to oligopoly price calculation. These reasons make it clear that the system was properly held unlawful even apart from the collusion. Cement is a homogeneous product, and small price differences can easily shift customers from one supplier to another. The demand of end-users is highly price-inelastic, however, so that even substantial price reductions would not substantially increase total use. During periods of vast excess producing capacity and high fixed costs, the pressure on cement producers to seek additional business by shading prices closer to marginal costs was very strong. Each producer, absent the basing-point system, would have been left virtually helpless to avoid price competition, even if every producer had adopted a well-publicized f.o.b. price. Individual customers could have claimed unverifiable advantages in arranging f.o.b. delivery from different suppliers, or in arranging nonrail transportation. A supplier would have been left uncertain as to the price that would exactly match those of its rivals. Each supplier, moreover, would be aware that his competitors faced the same pricing uncertainty and the same temptation to shade prices to win increased business. The pressure to anticipate price competition from others—whether deliberate or inadvertent—by a bit of preventive price competition would have been very strong. Added to these pressures would be the pressure resulting from the fact that over time demand would be apt to fluctuate much more in the territories of natural freight advantage peculiar to each supplier than over areas that embrace many suppliers. Given the will to avoid price competition, the basing-point system made it possible to avoid all of these dangers. With such a system, each firm knew exactly what price would be charged by its competitors and that differences in delivery arrangements would not have significant price effects. Thus, price competition was successfully avoided, even during the Great De-

pression. It is almost incredible to suppose that this result could have been achieved without the basing-point system.

Other pricing systems as well may facilitate oligopoly price calculation and the avoidance of price competition. The basing-point system, however, suffers peculiar additional disadvantages. To the extent that it is successful, it may interfere with long-range adjustments in productive capacity, and in times of declining demand it may facilitate survival of the financially strong rather than the efficient. Customers who purchase products sold on a basing-point system may tend to locate near basing points rather than nonbasing point producers, although in the cement industry it seems very unlikely that many cement users would base their own locational decisions on basing-point locations. If the system is maintained long enough, it is possible that new production capacity may locate near the basing points by the self-reinforcing attraction of customers' locational decisions.

In contrast to the impact of systematized price discrimination, sporadic price discrimination may have highly beneficial effects in upsetting oligopoly price calculation. The other side of the picture just painted for the effects of the basing-point system is that individual sellers, faced with excess capacity, may often believe that it is worthwhile to engage in hidden price competition. Discriminatorily favorable prices to particularly desirable or fickle customers may be the most likely form of such competition, in the hope that they may pass completely undetected, or that if detected they may be ignored or met with comparably limited competition, or that if detected and met with generalized price competition the delay in detection will yield sufficient profit to repay the gamble. Alternatively some firms may feel compelled to initiate such discrimination and competition by the fear that others have started already, or may soon start.

These contrasting aspects of price discrimination in an oligopoly setting suggest that it would be more useful to focus directly on the problems of oligopoly pricing systems than on the fact that one or more individual sellers are engaging in discrimination. It is possible to urge that the effect of reducing price competition is a desirable means of avoiding excessive rivalry that could lead to wasteful fluctuations in capacity over the general economic cycle. This argument has not been accepted with respect to explicit price-fixing, and it probably should not be accepted with respect to a systematized method of price computation adhered to by individual oligopolists without explicit collusion. Present conspiracy doctrine could easily be expanded to prohibit undesirable oligopoly pricing

systems without requiring proof of some traditional form of "agreement." If such an approach proves inadequate, however, it would be better to seek a remedy in new legislation addressed to the problem of oligopoly behavior rather than to rely on concepts of price discrimination as such.

C. *Statutory Concerns*

Present price discrimination law focuses largely on two forms of injury. One is the injury that results from predatory or disciplinary pricing designed to destroy rivals of the seller or to deter them from competing. The other is the injury to competition that exists between firms that purchase from the same seller through low-priced and high-priced channels of distribution. These two forms of injury pose quite different challenges to price discrimination law.

Discrimination is a curious companion of predatory or disciplinary pricing. It is clear that the immediate source of concern is that low prices may be used for bad purposes; the immediate cause of injury is the low price, not the discrimination. There is ample cause to believe that predatory pricing is very rare and to wonder whether disciplinary pricing is much more frequent. In any event, discrimination contributes to the process only if it somehow supports the lower prices. The only argument in favor of such support is that firms are more likely to engage in undesirable low pricing if it can be supported out of profits realized from other sales of the same product than if it must be supported out of an equal amount of other funds. The business psychology assumed by this argument is not entirely fanciful. In addition, it is possible to make the prophylactic argument that a statutory policy of single pricing would discourage predatory and disciplinary pricing by increasing the cost. Finally, the very fact of discrimination may be of some slight value in measuring the desirability of the low price. These concerns cannot be rejected out of hand. Nonetheless, they must confront both the danger that what appears to be disciplinary pricing may reflect desirable competition and the difficulty of measuring accurately the existence of price discrimination.

Injury to competition between customers of the discriminating seller is easily understood. Customers who pay higher prices than their competitors pay are hampered in their competitive efforts. The major difficulty with building price discrimination law around this concern lies in the difficulty of determining whether price differences involve discrimination or a desirable response to competition and considerations of efficiency.

In summary, then, conduct that clearly involves price discrimination may have desirable or undesirable consequences. The nature of the questions that must be resolved in evaluating the consequences is such that evaluation is often very difficult. No one has yet suggested how to define understandable statutory categories of desirable and undesirable discrimination, or how to administer a statute that would simply prohibit undesirable discrimination.

These problems are encountered even on the assumption that price discrimination has been clearly shown. As is demonstrated in the next section, however, enormous difficulties are also encountered in any attempt to determine whether a given set of pricing transactions in fact involves discrimination.

II. IDENTIFYING PRICE DISCRIMINATION

The difficulties of identifying price discrimination in actual transactions present challenges to statutory regulation quite distinct from the difficulties of distinguishing between desirable and undesirable discrimination. The difficulties begin with the problems of identifying and adjusting for differences in measurable costs, and are exacerbated by differences in the time periods of various transactions, the full range of appropriate responses to competitive pressures, arrangements that reduce uncertainty, and compensation for services performed by buyers. These difficulties are explored below. Separately or together, they often raise high barriers to the task of administering a rule against discrimination without interfering with economic efficiency and competition.

A. *Cost Variations*

As soon as different costs are incurred in providing substantially the same product to different customers, difficulties emerge in measuring and adjusting to the differences, even with respect to the tangible "hard" costs of production and distribution.

An initial difficulty of measurement arises from the nature of cost accounting. In many circumstances, it is simply not possible either to create an abstract model or to generate the data needed to establish an absolute cost figure. The most that can be done is to adopt a reasonably plausible system that will provide consistent figures over time that are useful for some internal management purposes. Because of these difficulties, it would be foolhardy to legislate a requirement that all prices be varied to maintain a uniform relation to the costs of each transaction, and fortunately no such requirement has ever been attempted. Single pricing is accepted without regard to possible cost differences.

A closely related difficulty shows the need to confine even a theoretical model of price discrimination. It may often be so expensive to determine the costs of different transactions, and to adjust prices accordingly, that the cost and price of the lowest-cost transactions would be increased above the single price that would prevail in the absence of such an adjustment. In such circumstances there is no sensible economic model that would suggest that sellers should undertake the burden of adjusting all prices to relative costs. Alternatively, a seller may be able to group customers according to a readily identifiable characteristic or group of characteristics roughly corresponding to the different costs incurred in dealing with them. The result may be a more rational relationship of prices to costs than would result from single pricing, and it may not be feasible to achieve more refined differentiations. Here too, there is no sensible model of economic efficiency that would suggest that such grouping should be prohibited in favor of single pricing.

Even if all costs could be determined accurately and at negligible cost, there is substantial difficulty in creating a model to define the appropriate method of relating prices to cost differences. Again, using simple figures, suppose it was determined that all of the directly measurable costs of dealing with one customer total \$60, and that all of the directly measurable costs of dealing with another customer total \$80. If the price to the high-cost customer is \$100, what price is appropriate for the low-cost customer? Is it \$80, reflecting only the absolute amount of cost savings? Or is it \$75, reflecting the same proportion between price and measurable costs as the price charged the high-cost customer? Distressing as it may seem, either answer may be clearly right in some circumstances, and each may be highly questionable in most circumstances.

Absolute cost differences are probably the appropriate measure of price differences if they rest on payments that are entirely external to the firm and that do not reflect any of the myriad economic functions undertaken by it. If, for instance, the seller incurred common carrier charges of \$5 in delivering to one customer, and \$25 in delivering to the other, there is a strong argument that cost justification appears only to the extent of the \$20 difference.

Final prices should probably be proportional to measurable costs in situations in which all measurable cost differences reflect costs that are internal to the firm. The clearest situation is presented by a firm that can measure and allocate some, but not all, of its internal costs. If it can measure costs of \$60 in dealing with one customer and costs of \$80 in dealing with another, it seems appropriate to allo-

cate the unmeasurable costs in the same proportion as the measurable costs. The unmeasurable costs are internal to the firm, and reflect risks undertaken by it that deserve to be compensated. The same conclusion seems justified if the firm can superficially allocate "all" of its historic internal costs. If it can secure a price of \$80 in selling to a \$60 cost customer, the opportunity costs, rents, returns to risk, or pure profit that it is earning should be charged in the same proportion to higher-cost customers.

Unfortunately, these conclusions seem weaker with obvious variations of the underlying assumptions. Suppose, for instance, the firm maintains its own fleet of delivery trucks and can demonstrate a highly rational \$20 savings in the cost of delivery, including a reasonable return to the investment and risk incurred in the delivery system. Should the \$20 cost difference "justify" a \$25 price difference on the ground that the high delivery-cost consumer should bear a greater share of the president's salary and the investment and risk in machine tools? It is difficult to find any clear answer.

The assumption of constant costs in dealing with all customers, in short, makes it relatively easy to define and identify noncost pricing. Once the assumption is discarded, however, it becomes more difficult to identify or define noncost pricing, even if attention is directed only to the obvious "out-of-pocket" costs of production and distribution. If there were no other reason to question the assertion that every customer should bear an appropriate share of nonallocable "overhead" costs, differences in measurable hard costs make it difficult to define the appropriate share. These problems pale to near insignificance, however, when they are compared to the allocation problems that arise from the more intangible costs of risk, uncertainty, and services incurred or avoided by the buyer.

B. *Time Variables*

Two different perspectives suggest the major ways in which differences in time complicate the relationships between prices and costs. First, cyclical fluctuations in demand must be taken into account. Second, transactions concluded at the same moment may involve different future time periods. Each of these perspectives introduces elements that cannot be neatly captured and translated into appropriate variations in the price-cost relationship.

Cyclical fluctuations in demand that affect all sellers of the same basic product have an obvious impact on prices. Such fluctuations may occur irregularly as a result of the overall health of the eco-

nomy. They may also occur predictably, following regular patterns peculiar to a specific industry. It is clear that transactions undertaken at different stages of such cycles cannot be compared. Customers who purchase in seasonal slack periods and incur storage costs, for instance, obviously should not be required to pay the same price as customers who defer purchases until the hectic peak period. Even customers who purchase for immediate use in the slack period may rightly assert that they should not be required to share the cost of facilities maintained solely to satisfy peak demand. More generally, it is accepted that in periods of general excess capacity in an industry prices should tend toward the short-term variable costs of production, while in periods of inadequate capacity prices should exceed the full costs of production.

General industry cycles do not afford any basis for measuring and assessing an appropriate degree of change in cost-price relationships. They do provide, however, a useful basis for determining that transactions undertaken in one phase of a general cycle cannot be compared to transactions in another phase. In addition, they provide a provocative analogy by which to frame the question whether periodic changes in the demand perceived by a single firm warrant similar price changes in the absence of any change in overall market conditions. It is plausible to argue that whenever a firm believes that it will not be able to operate at full capacity at the price of its most recent transactions, it should be able to lower the price to all customers until it believes that capacity operations are ensured. The difficulty with this argument is that it suggests that a seller should be able to charge whatever price it thinks it can obtain from each of its customers in order to remain as close to continual full capacity operation as possible. Prices would respond to the bargaining power and ability of sellers and buyers. Although there is no self-evident reason why bargain-determined prices are less efficient than those determined by more impersonal market forces, there is no need to reach a firm conclusion on this point. It is sufficient to note that there is an unresolved difficulty.

Transactions covering different time periods provide easier tests. Whenever the buyer or seller undertakes a legally binding commitment for the future, the transaction ceases to be comparable to spot-market transactions or transactions covering commitments for different periods in the future. Risks are assumed that demand compensation. There is no reason, for example, why the price for a carload of potatoes delivered three months from today should be the same as the price for present delivery plus the cost of storage,

even if both carloads have already been harvested and put in storage. Nor is there any means of measuring a "reasonable" risk factor to adjust the relationship between price and the physical costs of production. Even in organized futures markets, the relationship between prices is based on the conflicting judgments of many traders, drawing from predictions of both demand and cost. Potatoes to be delivered in three months, in short, are not the same product as potatoes delivered on the spot.

Apart from the risk and product-definition factors, it is reasonable to argue that prices in different time periods should not be compared whenever time differences permit different degrees of variation in tangible costs. The longer the time period the greater the number of cost elements that can be varied. There is no apparent reason to demand an identical relationship between prices and costs that include different variable and fixed components. Suppose two separate contracts were made on January 1, 1975, and January 1, 1976, each calling for the delivery of an identical quantity of the same product on January 1, 1977. If more inputs could be varied over the two-year period than over the one-year period, there is no reason to insist on a uniform price even though all output might be produced in December 1976, at an apparently uniform cost.

The time dimension, in short, means that a comparison of cost-price relationships is clearly justified only as to transactions that are undertaken at substantially the same time and involve performances over substantially the same period. It may be possible to draw upon recognized patterns of commercial significance to expand the comparable periods to some extent, particularly if there are well-established market periods and the selling firm operates at a constant relation to capacity and cannot show any reason to expect a change. At a very early point, however, it will become impossible to assume comparability. Appropriate adjustments for incomparability would be hazardous, and often capricious. It might be possible to respond to this difficulty by asserting that sellers are free to set different prices for different future periods, but that they must allow free access by all customers to purchases on the same terms for any future period. This response will not do, for future commitments by the seller, in reliance on the commitment of the customer, are a form of credit that should not be subject to legal tests of discrimination.

C. *Meeting Competition*

As a practical matter, the most formidable obstacle to legal regulation of cost-price relationships arises from the fact that many sales

are made with little or no regard to cost. Market constraints limit the seller's freedom, even if they do not determine a unique single price. Any sale that covers variable costs and represents the most favorable opportunity available to the seller is good business. The available opportunities are in turn shaped by competition, both from close substitute products and from quite different customer expenditures or investments. The need to meet competition means that sellers often cannot consider the full long-range costs of each sale. More importantly, it means that sellers are apt to adjust prices according to estimates of the opportunities left open by competition: better prices are likely to be available to marginal customers simply because of the danger that they will go elsewhere. The pressure to adjust prices to meet alternative competitive opportunities open to buyers is so strong that attempts at regulation face immense practical obstacles. The Robinson-Patman Act is violated almost as often as highway speed laws. Despite the practical problems of enforcement, speed laws make sense both because they have a very pervasive practical impact and because there are sound reasons for controlling automobile speed. The practical problems of enforcing price discrimination laws, on the other hand, reflect deeper theoretical problems. For a host of reasons, business firms should indeed be left free to respond to many of the pressures that force them to compete in the short run.

One of the most commonly stated theoretical reasons for favoring competitive variations in price-cost relationships arises from the nature of oligopoly pricing. At a minimum, a firm with substantial pricing freedom often lacks clear market information on the most appropriate price. Selected price variations may provide the most efficient method of gathering information about demand and thereby improve the opportunities for price competition. Beyond the information function, firms in an oligopoly market may employ selective price cuts, often secretly, in an attempt to secure sales that might otherwise be made elsewhere, as was described in section I. Enforced price uniformity might well remove the most probable opportunity for price competition in important oligopoly markets.

Price discrimination may also be adopted as one of the most efficient means of competitive promotion. Price reductions may be offered in selected markets or to selected customers for the purpose of inducing experimentation and future sales at nondiscriminatory prices. The result may better enhance competition and better serve customers than would alternative forms of advertising and promotion.

Variations in cost between different firms provide quite different reasons for favoring prices that respond to competitive opportunities rather than to individual firm costs. Even single-product firms that employ the same technology and the same tangible inputs may experience differences in the total costs of serving different customers. There is every reason to allow each customer to enjoy a price that corresponds to the costs of the firm that can serve it most efficiently, and to subject that firm to competitive pressure from other firms. And there is no reason to deny any rival supplier the right to meet the efficient firm's price if the sale would be the rival's best opportunity.

The same point holds true, in much more complex fashion, in situations in which different firms produce differentiated products, in different overall product mixes, employing different technologies. Initially, it is clear that there is no reason why any firm should be compelled to maintain a constant relationship between the prices and costs of its different products. Each product is sold in a different market, facing different supply and demand conditions (often at different points in individual market cycles), and must be treated as a distinctive pricing problem. Even with respect to a single product, all customers may benefit from a flexible response to differences in demand that result from variations in the attractiveness of substitute products to different users. Increased output of one product in the firm's product mix may provide the benefits of noncost pricing not only to other customers for the same product, but also to customers who purchase different products from the same firm. It is, moreover, possible that response to market opportunities may provide a more rational range of relationships between prices and costs than would emerge from self-conscious attempts at regulation, given the fact that none of the firms is apt to have any clear picture of the allocation of its own costs among its different products, nor any means or sound business reason for developing a clear picture.

The meeting competition arguments also provide a new perspective on the capacity utilization concerns explored earlier. Meeting competition arguments suggest that a firm with excess capacity should be able to utilize its capacity by pricing down to the most favorable opportunity it can seize. Allowing such behavior, without requiring reduction of prices for all transactions, may achieve the best utilization of total industry capacity and provide individual customers with the most favorable combination of price and product variety. The assumption that each customer should bear the same aliquot share of fixed costs, built into present price discrimination laws,

may injure both sellers and buyers. If all prices must be reduced to capture the marginal buyer, the seller may find it better to forgo the marginal sale, thereby passing up its contribution toward overhead. Over time, this pattern could result in less efficient investment in plant, technology, and product mix to the harm of all concerned.

The argument based on capacity utilization can be illustrated with figures drawn from a closely related argument based on the advantages of capacity expansion. This argument also shows that the competition to be met includes the competition from potential entry, including potential vertical integration by present customers into the seller's market. Suppose that the largest current plant for producing thingbobs has an annual capacity of 10,000 units, at a full cost of \$1 each. Developments in technology have made it possible to produce at a cost of \$1 in plants having an annual capacity of 2,000 units, and to produce at a cost of 85¢ in plants having an annual capacity of 20,000 units. Recapture of an investment in plant expansion is doubtful, however, since there is already some excess capacity, and it seems probable that, given competitive response and the relative inelasticity of demand, the largest firm could not sell more than 14,000 units at a price of 85¢. At the same time, several large customers have been exploring the possibility of building 2,000-unit plants in order to avoid reliance on the market. Discussions with some of them have shown that the advantages of internal production, even at a unit cost of \$1, are great enough to justify internal expansion unless a market price of 80¢ is available. The large firm has concluded that if it expanded to a 20,000-unit capacity, it should be able to sell 12,000 units at a price of 95¢ and 8,000 additional units at a price of 80¢ to four large customers. All customers would then be better off. Although competitive relationships between the small and large customers would be altered, internal production by the large customers would alter the relationship as well, giving the large customers advantages they value highly. The supplier should be allowed to adopt its proposed program.

The risk reduction perspective provides another useful view of the meeting competition concern. An individual seller can never know the highest price that will secure a marginal sale, thereby "meeting" competition. This difficulty is particularly acute when product differentiation requires calculation of appropriate price differences, and when there is room to calculate the value to the customer of the advantages of continuing an established relationship or the disadvantages of establishing a new relationship. The only rational behavior is to

offer the price that best balances added revenue against the risk of losing the sale. Any attempt to measure the appropriateness of this price as simply meeting rather than "beating" competition is doomed to failure.

So long as price competition is thought desirable, in short, it must be a short-run phenomenon that forces disparities in the relations between costs and prices. Only a thorough substitution of regulation for market transactions could alter the results.

D. *Reduction of Uncertainty*

The most complex arguments confounding the relationship between prices and costs arise from the intangible and unmeasurable costs imposed by uncertainty. Two illustrations will be provided to demonstrate that at times considerations of uncertainty may justify different prices despite identity in all of the measurable costs of production and distribution. A third illustration will be used to show that at other times considerations of uncertainty may not justify different prices. The conclusion to be drawn from these illustrations should become apparent: since there often is no practicable way of measuring the appropriate price adjustment to compensate for reductions of uncertainty, no regulation of pricing could avoid prohibiting highly desirable behavior.

The first illustration parallels an example already used in a different context. Shortly before the start of a year, one customer enters into a binding contract to take delivery of 10,000 units at the first of each month in the following year at the seller's prevailing price. A second customer, without making any such commitment, in fact orders 10,000 units for spot delivery on the first of each month during the same year. Analysis of the provable costs of dealing with each customer shows that all costs are the same. Nonetheless, there is no reason to deny the right of the firm-commitment customer to a price reduction that reflects the commitment assumed in the contract. Indeed, this commitment may have reduced the seller's uncertainty as to the probable ranges of output during the year, facilitated the ordering of variable inputs, conduced to improved production flow, and thereby reduced the costs of dealing with all customers. Apart from such tangible savings, increased certainty may well permit lower returns to capital. The very same phenomena can occur without a contractual commitment. The seller, for example, could adopt a price schedule that provides retroactive rebates based upon the cumulative purchases of each customer during the year. Experience with the market might enable the seller to judge the effects of the discount

schedule, to reduce uncertainty, and to reduce overall costs of the operation in ways that cannot be measured or even demonstrated. Even though all customers purchase in spot delivery transactions and there is no difference in measurable costs, the regularity induced by the retroactive rebate may reduce costs in all transactions.

The second illustration is simply a variation on the first. In many markets there may be some buyers that regularly purchase large quantities and that customarily prefer to deal with an unchanging small group of suppliers. Lower prices to these buyers may be justified in part by the meeting competition concerns already explored; to a large extent, the fact that they enjoy a greater range of competitive alternatives may reflect nothing more than cost savings enjoyed by one seller or another at various times and in various ways. In addition to these considerations, however, lower prices may also be justified on grounds parallel to those identified with the cumulative volume of purchases discount. The actual experience of the sellers, both individually and collectively, is that a consistent price advantage results in markedly steadier purchasing patterns, reducing uncertainty and facilitating planning. Once again, the net result could be that all buyers benefit.

The third illustration runs counter to the second. Special prices to large buyers may result from nothing more than the desire of each firm to reduce the danger that it will lose a particularly attractive customer. Among sellers collectively, the result may be that, in an imperfect market, price competition works effectively as to large buyers, but not as to small buyers. It is even possible that the profit pressure resulting from competition for large customers enables the oligopolists to maintain higher prices for small transactions than would result if uniform prices were adopted for all transactions. Bizarre as it may seem, it is not impossible that lower prices to some customers could thus "cause" an increase in other prices. It is very difficult to find any model of economic efficiency to justify this result, and very easy to fear the impact on competition between large and small customers that otherwise are equally efficient.

The uncertainty factor thus complicates the price picture still further. It is hard to find a practical measure of the cost savings that result from reduced uncertainty. It might be tempting to argue that whatever price has been set must be an accurate reflection of all the factors of meeting competition and reduced uncertainty, since the price has been made by a firm that at least is trying to make the best of its own expert market judgment. Unfortunately, the market may work more efficiently with respect to some transactions

than others. But if the market cannot be relied upon to achieve model-perfect results in all transactions, it may nonetheless work far better than any nonmarket attempt to sort out and weigh all of the confused and potentially conflicting elements.

E. *Customer-Performed Services*

Customers engaged in distributing a manufacturer's product may perform a wide variety of services that benefit both supplier and ultimate buyers. The market in which these intermediate distributors operate may function so as to reimburse the costs of such services, but that is not always so. It may often be entirely appropriate to allow the seller to reduce its prices to support customer services in reselling the product, even though there is no difference in the costs of dealing with customers who perform services and those who do not.

An example of customer-provided services that has become familiar in the context of various vertical restraints is the demonstration of stereo equipment. Some stereo stores make substantial investments in providing demonstration facilities that enable customers to compare different equipment, while other stereo stores do not. It may prove very difficult to prevent buyers from shopping in the higher-priced demonstrator store and buying at a lower-priced store that has not incurred the costs of demonstration facilities. One possible way to prevent this may be for the supplier to provide a discount to stores that meet specified standards of demonstration performance. The discount enables the stores to provide the demonstration facility, thereby enhancing the sales of the equipment from all outlets, and at the same time to remain competitive in price with the other stores. It may be much more efficient for the manufacturer to purchase this service by a price discount than to provide the service directly, particularly since most efficient retail distribution may require sale of many lines of equipment. The price discount, further, may restrict competition among dealers less than such an alternative means of protection as an exclusive distributorship.

It is not an answer to say that the manufacturer should allow all customers access to the form of distribution subsidized by a lower price. In many market settings, efficient distribution may require a limit on the number of distributors that provide the service. A familiar illustration is the "stocking jobber." A manufacturer may find that sales of its products are greatly enhanced if all end users have prompt access to replacement parts or additional units out

of a local distributor's inventory. At the same time, most sales may be made more efficiently by order for delivery direct from the manufacturer to the customer. It may make excellent sense to provide a price discount to enable a single distributor in each market area to provide the inventory-stocking service and to limit all other distributors to the function of securing orders for delivery from the manufacturer.

Functional discounts may be justified by the same arguments. Although there may be identical costs in dealing both with wholesalers who redistribute to small retailers and with large, direct-buying retailers, it may be entirely proper to allow lower prices to the wholesalers.

If there is to be any limit imposed on the price advantages given to customers on account of distribution services performed by them, it is plain that it cannot be based on costs incurred by their supplier. Instead, the limit must be defined with respect to the costs and risks incurred by the distributors. Even then, the task of regulation seems almost hopeless. A large and very well-known retailer, for instance, may incur costs of overall operation that cannot possibly be identified to any single product it carries. By simply carrying a particular product, such a retailer may provide substantial benefits both to the manufacturer and to other distributors who carry the same product, because of the quality and prestige associated with all products handled by that retailer. Any attempt to identify such effects, or to measure the compensation appropriate for them, would be rash. It may be that there is no such effect when the nation's largest grocery chain carries the nation's best-selling brand of corn flakes, but if that judgment is sound, there are few judgments that could claim even the same shaky degree of confidence.

III. SUMMARY

Enough has been said to demonstrate the two basic propositions urged at the outset. Even when it is clear that price discrimination has occurred, it remains a complex task to sort through the many different phenomena of discrimination and to evaluate their desirability. In addition, the appropriate relationship between prices and costs is extraordinarily complex. Not only is cost accounting imperfect, but prices should and do respond to a great number of factors that cannot enter into any accounting of investments made or external obligations incurred. In many situations, a firm may not only increase its own profits but also promote economic efficiency by set-

ting different prices to respond to differences in the demand for its product presented by different customers. In light of the inadequacy of the diagnostic tools available to judicial or administrative tribunals, or to the business firms they might be charged to regulate, it would be unwise to pursue the task of regulating price discrimination for the purpose of promoting the values of competition and economic efficiency. If regulation is to be justified for other purposes, it must be justified in terms that acknowledge that it will often impair economic efficiency.

The most likely goal to be pursued by regulation would be the protection of small firms. Regulation of price discrimination by their suppliers will sometimes protect small firms against economically undesirable pricing. More often, it will protect them against destruction by their own economic inefficiency. Immediate social and political values might nonetheless warrant the effort. If regulation is to continue, however, substantial changes should be made in present law to raise the threshold of injury, to recognize the full range of cost-justification complexities, to understand the nature of meeting general market competition, to reflect the importance of reducing risk and uncertainty, and to accommodate the need to recognize customer-performed services. No better judgment seems possible than that a much-improved law would still be widely ignored and would still lead to condemnation of many price differences that in fact promote economic efficiency. Only a legislative body can reach the final judgment whether these losses are justified in the service of social and political ends that may occasionally, often by chance, improve economic efficiency as well.