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PREDATORY PRICING THEORY APPLIED: THE CASE OF SUPERMARKETS VS. WAREHOUSE STORES

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Many theories developed to analyze predatory pricing have tried to develop legal standards that would apply to all industries. The authors of this Article reject that approach and focus on detecting predatory pricing in one particular industry—the retail food industry. The issue of predatory pricing has taken on added importance in the retail food industry as conventional supermarkets face pricing decisions upon the entrance into the market of low-cost warehouse stores.

The Article begins by analyzing a conventional store's competitive response to entry into the market of a warehouse store. The authors then discuss cost-based standards for detecting predatory pricing in the retail food industry, and conclude that predatory pricing should not be an antitrust concern in this industry.

INTRODUCTION

LITTLE REMAINS TO be said about predatory pricing as a general issue. The recent avalanche of legal and economic writings

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on predation has more than adequately covered our present knowledge of the subject.¹

One of the hallmarks of this extensive literature, though, is that it is almost all addressed to predatory pricing *as a general issue*. Most of the recent writings have focused on developing a legal standard that could be applied to every predatory pricing case.² With the issue framed so broadly, it is not surprising that the literature has not produced a consensus as to an appropriate legal rule. As most commentators now recognize, any single legal standard, especially a standard sufficiently simple to be manageable by courts and juries, is almost certain to be too restrictive in some contexts and too permissive in others.³ The desirability of any particular legal rule thus depends on the relative frequency of each kind of error, a judgment that is difficult to make in the absence of dispositive empirical evidence. For example, authors who view predatory pricing as being extremely rare take a very different view from those who believe it to be a more common problem.⁴

This Article takes a much narrower approach to the predatory pricing issue. Rather than trying to decide what rule would best fit all predatory pricing cases, our goal is to suggest a rule that would best fit one particular class of cases. As Professors Brodley and Hay recently stated, "the best way to understand the impact of the various economic theories and rules is to examine their application in a specific factual setting."⁵

1. For the leading articles in the development of this literature see McGee, *Predatory Price Cutting: The Standard Oil (N.J.) Case*, 1 J.L. & ECON. 137 (1958); Areeda & Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975). Other writings on the subject, too numerous to mention here, will be cited where appropriate. For a thorough review of the literature see Calvani & Lynch, *Predatory Pricing Under the Robinson-Patman and Sherman Acts: An Introduction*, 51 ANTITRUST L.J. 375 (1982).

2. The principal exception, which is closest in purpose to the present article, is Schmalensee, *On the Use of Economic Models in Antitrust: The Realemon Case*, 127 U. PA. L. REV. 994 (1979).

3. Schmalensee, *On the Use of Economic Models in Antitrust: The Realemon Case*, 127 U. PA. L. REV. 994, 1028 (1979) ("we do not possess any simple yet universally applicable rules for predatory pricing"). For more detailed discussions of this problem see Joskow & Klevorick, *A Framework for Analyzing Predatory Pricing*, 89 YALE L.J. 213 (1979); Brodley & Hay, *Predatory Pricing: Competing Economic Theories and the Evolution of Legal Standards*, 66 CORNELL L. REV. 738 (1981).

4. Compare, Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263 (1981) (viewing predatory pricing as rare or nonexistent) with Zerbe & Cooper, *An Empirical and Theoretical Comparison of Alternative Predation Rules*, 61 TEX. L. REV. 655 (1982) (viewing predatory pricing as more plausible and therefore proposing more stringent prohibitions).

5. Brodley & Hay, *supra* note 3, at 772. This article responds to those authors' call for

The class of cases considered here involves price cuts by conventional supermarkets in response to the entry of lower-priced warehouse stores. As warehouse stores have appeared in more markets, price wars between supermarkets and warehouse stores have become increasingly common, leading to a number of private antitrust suits.⁶ These price wars have also led to the introduction of protective legislation in Congress and demands for government antitrust agencies to intervene.⁷ Governmental restrictions on supermarket price-cutting have also been supported by some economists.⁸ However, the only governmental action to date has been the termination of a 1957 consent decree barring Safeway from using "below cost" or "unreasonably low" prices.⁹

Section I of this Article briefly surveys the various legal standards proposed in the predatory pricing literature and provides some background information about the retail grocery industry.¹⁰

an inductive or common law approach, with a "renewed emphasis on the values and insights" of case-by-case adjudication. *Id.* at 794.

6. See *Handy Andy Sues H.E.B. In "Predatory Pricing" Case*, SUPERMARKET NEWS, June 21, 1982, at 1; *Zone Pricing Prompts "Predator" Charge*, CHAIN STORE AGE/SUPERMARKETS, March 1982, at 16; *Two Colo. Rivals Move War to Court*, SUPERMARKET NEWS, Dec. 12, 1983, at 8. Predatory pricing charges have also arisen between competing conventional supermarkets. See *Lorimar Inc. v. Kroger Co.*, 1979-1 Trade Cas. (CCH) ¶ 62,498 (S.D. Ohio 1979).

7. H.R. REP. NO. 5237, 98th Cong., 2d Sess. (1984) (introduced by Rep. Markey); *Bill Seeks to Strengthen Law on Predatory Pricing*, SUPERMARKET NEWS, April 9, 1984, at 1; *Predatory Pricing Charges Hold NGA Parley Spotlight*, SUPERMARKET NEWS, Jan. 30, 1984, at 2; *FTC Held to be Abandoning Small Retailer, Wholesaler*, SUPERMARKET NEWS, March 7, 1983, at 1; *NGA Voices Concern Over Safeway Price Decree End*, SUPERMARKET NEWS, Nov. 21, 1983, at 1; Remarks by Ronald A. Bloch entitled, "Predatory Pricing in the Retail Grocery Industry," before the Conference on Warehouse Retailing, Atlanta, Georgia (Dec. 16, 1981).

8. B. MARION, W. MUELLER, R. COTTERILL, F. GEITHMAN & J. SCHMELZER, THE FOOD RETAILING INDUSTRY: MARKET STRUCTURE, PROFITS, AND PRICES 143-44 (1979) [hereinafter cited as MARION]; F. Allvine, Report on Chain Store Pricing Practices for the Greater Atlanta Area Carried Out for the Week Ending 3/29/81 (unpublished manuscript) [hereinafter cited as Allvine]. The Allvine study is directly concerned with price cuts by conventional supermarkets in response to the entry of warehouse stores. The MARION study was written before the growth of warehouse stores, and therefore focused on price cuts in response to the entry of conventional supermarkets.

9. *United States v. Safeway Stores, Inc.*, 1957 Trade Cas. (CCH) ¶ 68,871 (N.D. Tex. 1957). The Justice Department's decision and the court's subsequent termination of the consent decree are reported in 45 ANTITRUST & TRADE REG. REP. (BNA) 973 (Dec. 15, 1983). For some industry views see *NGA Voices Concern Over Safeway Price Decree End*, SUPERMARKET NEWS, Sept. 12, 1983, at 1. The Federal Trade Commission recently held a series of public hearings on this issue as an alternative to prosecuting alleged instances of predation by supermarkets. See *FTC Will Hold Hearings on Retailer Competition*, SUPERMARKET NEWS, Apr. 2, 1984, at 1; *FTC Will Investigate Effect of No-Frills Grocery Stores on Retail Pricing Activity*, 45 ANTITRUST & TRADE REG. REP. (BNA) 1234 (June 28, 1984).

10. See *infra* notes 16-37 and accompanying text.

Section II develops an economic theory of how nonpredatory supermarkets would respond to the entry of a warehouse store.¹¹ Section III examines the difficulties of designing a legal standard that would prohibit predation without deterring these nonpredatory price cuts.¹² Section IV reviews economic theories that explain why supermarkets might engage in injurious, predatory price cuts, and argues that such tactics are likely to be infrequent.¹³

In light of the slim chance of injurious predation, and the high risk of deterring competitive price cuts, we conclude that price wars in the retail grocery business should not give rise to antitrust violations regardless of how low prices fall.¹⁴ Our analysis thus supports either a blanket rule of per se legality for all price-cutting or the Joskow-Klevorick proposal for per se legality in markets whose structure is not conducive to monopolization.¹⁵ Obviously, one case study cannot establish that either of these rules is appropriate in any other market, much less that they should be adopted as a universal standard for all predation cases. Our aim is to stimulate enough case studies of other industries, so that we will eventually build-up enough knowledge about the possible legal rules to be able to answer these larger questions.

I. BACKGROUND

A. *The Predatory Pricing Literature*

Predatory pricing is usually said to involve price cuts adopted in order to drive a competitor out of business in the hope of earning higher profits after the competitor has been eliminated.¹⁶ However, there is no consensus as to the exact definition of predatory pricing, and at least five kinds of legal standards have been proposed.¹⁷

The first group consists of proposals that price cuts should be

11. See *infra* notes 38-71 and accompanying text.

12. See *infra* notes 72-98 and accompanying text.

13. See *infra* notes 99-130 and accompanying text.

14. See *infra* notes 131-36 and accompanying text.

15. See Joskow & Klevorick, *supra* note 3. A blanket rule of per se legality for all price cuts and the Joskow & Klevorick proposal differ only in their treatment of markets whose structure is conducive to monopolization by predatory price-cutting. This Article concludes that the retail grocery industry does not fit that description, our analysis provides no basis for choosing between these two rules.

16. See Areeda & Turner, *supra* note 1, at 697; Zerbe & Cooper, *supra* note 4, at 657-58; Yamey, *Predatory Price Cutting: Notes & Comments*, 15 J.L. & ECON. 129, 129 (1972).

17. A sixth category consists of authors who urge stricter enforcement against predatory pricing, but do not attempt to define any standard for distinguishing predatory price cuts from competitive ones. The study by MARION falls into this category. MARION, *supra* note 8.

illegal only if they result in a price below some measure of the defendant's costs. The most famous proposal, that of Professors Areeda and Turner, would prohibit pricing below the defendant's average variable costs.¹⁸ This proposal has gained widespread acceptance in federal courts, although most courts treat the variable cost threshold as establishing a presumption of guilt or innocence rather than as an absolute rule.¹⁹ Other commentators have proposed standards based on some other measure of costs, such as average total costs²⁰ or long-run incremental costs.²¹

The second group consists of proposals that predatory pricing should never be an antitrust violation.²² While this view has not been adopted by any court, commentators supporting this position urge a rule of per se legality for all price cuts.

The third proposal combines aspects of the first two categories. Professors Joskow and Klevorick recommend a "two-tier" approach in which courts examine the market's structural characteristics, such as barriers to entry and concentration levels, in order to determine whether long-term market power is a serious possibility.²³ If not, the case would be dismissed. If so, the court would proceed to judge the price cuts under some form of price-cost comparison.²⁴ While this approach has not been explicitly adopted by any court, several courts have replicated its most important feature, avoiding price-cost comparisons in markets not conducive to monopolization by dismissing attempted monopolization charges when

18. Areeda & Turner, *supra* note 1. The authors' subsequent modifications and defenses of this standard are found in 3 P. AREEDA & D. TURNER, *ANTITRUST LAW* ¶¶ 711-21 (1976). See also Areeda & Turner, *Scherer on Predatory Pricing: A Reply*, 89 HARV. L. REV. 891 (1976); Areeda & Turner, *Williamson on Predatory Pricing*, 87 YALE L.J. 1337 (1978); Areeda & Turner, *Predatory Pricing: A Rejoinder*, 88 YALE L.J. 1641 (1979); P. AREEDA, *ANTITRUST LAW* 114-61 (Supp. 1982).

19. For a thorough survey of the recent case law as it relates to the theoretical literature see Hurwitz & Kovacic, *Judicial Analysis of Predation: The Emerging Trends*, 35 VAND. L. REV. 63 (1982).

20. Joskow & Klevorick, *supra* note 3; Zerbe & Cooper, *supra* note 4 (endorsing total cost standards in certain markets). See also Ordovery & Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 YALE L.J. 8 (1981) (proposing various cost-based standards).

21. R. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 184-96 (1976). The difference between these various kinds of costs is analyzed in Sections II and III of this Article.

22. Easterbrook, *supra* note 4; R. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 144-60 (1978); McGee, *Predatory Pricing Revisited*, 23 J.L. & ECON. 289 (1980).

23. Joskow & Klevorick, *supra* note 3.

24. See also Ordovery & Willig, *supra* note 20, at 12 n.17 (who also support a two-tiered approach).

the defendant lacks a "dangerous probability of success."²⁵

The fourth category of proposals consists of dynamic standards which focus on the way the defendant's conduct changes in response to entry. For example, Professor Williamson has suggested that defendants not be allowed to increase output in response to entry,²⁶ while Professor Baumol proposes that defendants be allowed to reduce prices if they do not raise them for a period of several years after an entrant exits the market.²⁷ Neither of these proposals has been adopted by any court.

The final category consists of proposals that courts adopt a "rule of reason" approach, examining all relevant factors that bear on the long-run efficiency of the defendant's pricing behavior.²⁸ While this approach was endorsed by Professor Scherer, it too has not been adopted by any court.

B. *The Retail Grocery Market*

The retail food industry is currently in a state of flux. The decline in population growth has affected the number of consumers shopping for food. Other economic changes have affected the way in which consumers shop, including an increase in the business done by fast food restaurants and the extent to which consumers are concerned about prices as opposed to other aspects of service.²⁹ Grocery retailers have responded to these changes with major structural shifts, including an increased use of formats ranging from giant "superstores" to limited-assortment "7-Eleven" operations to the no-frills "box" or "warehouse" stores.

Warehouse stores are a relatively new, but rapidly growing phenomenon.³⁰ They offer virtually no services or amenities and only a

25. *E.g.*, *Lektro-Vend Corp. v. Vendo Co.*, 660 F.2d 255, 270-72 (7th Cir. 1981); *Cliff Food Stores, Inc. v. Kroger, Inc.*, 417 F.2d 203, 206-08 (5th Cir. 1969); *In re General Foods Corp.*, 103 F.T.C. 204, 322-25 (1984).

26. Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 YALE L.J. 248 (1977); Williamson, *Williamson on Predatory Pricing II*, 88 YALE L.J. 1183 (1979).

27. Baumol, *Quasi-Permanence of Price Reductions: A Policy for Prevention of Predatory Pricing*, 89 YALE L.J. 1 (1979). See Joskow & Klevorick, *supra* note 3, at 255 (who also would take the permanence of the price cut into account if the market structure was conducive to monopolization).

28. Scherer, *Predatory Pricing and the Sherman Act: A Comment*, 89 HARV. L. REV. 869 (1976); Scherer, *Some Last Words on Predatory Pricing*, 89 HARV. L. REV. 901 (1976).

29. See Bloom, *The Future of the Retail Food Industry: Another View*, 54 J. RETAILING 3 (Winter 1976); Williams, *A Policy-Oriented Typology of Grocery Shoppers*, 54 J. RETAILING 27 (Spring 1978).

30. A 1980 study estimated that warehouse stores accounted for only one-half of one percent of the nation's grocery sales. *Markets React with Vigor to Box Store Competition*,

limited range of products. Items are often displayed in their original shipping crates, and customers often must bag their own items.³¹ The resulting savings are passed on to consumers in the form of prices that are about ten percent lower than prices of conventional supermarkets.³² Many warehouse stores are run by small, independent firms, but large retail chains such as Jewel and Food Giant have also established warehouse outlets.³³

Antitrust concerns arise from the response of conventional supermarkets to the entry of warehouse stores. While some supermarkets have responded by increasing the quality of their services, the most common response has been to reduce prices. Supermarket chains often cut prices only in the stores closest to the new warehouse store, a response known as "zone pricing."³⁴ In some markets the warehouse stores continued to grow anyway. In Green Bay, warehouse stores captured thirty-three percent of the market within six months of their entry,³⁵ and in Kansas City their market share is estimated at over fifty percent.³⁶ In other markets, however, the supermarket price wars have forced the warehouse stores out of business or have caused the warehouse stores to abandon plans for expansion into neighboring markets. As a result, warehouse stores have attacked the price cuts by conventional supermarkets as being predatory. Private antitrust suits have been filed in

SUPERMARKET NEWS, April 28, 1980, at 4. The total number of warehouse stores has grown from an estimated 150 in 1978 to 1,600 in 1981, 2,200 in 1982, 3,000 in 1984, and a projected 4,000 by the end of 1985. *Inventory of Formats: Capsule Report Updates Status of Grocery Stores From Box to Super*, ADVERTISING AGE, Apr. 27, 1981, at S-2; *Success is Seen Limiting Super Warehouse Stores*, SUPERMARKET NEWS, May 16, 1983, at 1; *Upgrading is Predicted for Warehouse Store Format*, SUPERMARKET NEWS, Mar. 12, 1984, at 28.

31. For a description of some of the specific cost-saving technologies used by warehouse stores see Bishop & Murphy, *Warehouse Markets*, 14 J. FOOD DISTRIBUTION 45 (Feb. 1983).

32. See *Inventory of Formats: Capsule Reports Update Status of Grocery Stores from Box to Super*, ADVERTISING AGE, Apr. 27, 1981, at S-2.

33. *Study Finds Execs Gloomy About Everything but Profits*, SUPERMARKET NEWS, Feb. 4, 1980, at 16. In addition, at least one chain of "super warehouse stores" has already been formed. These stores are larger than the usual warehouse store, they draw buyers from a much larger area, and they carry some products, such as bakery goods, not usually found in warehouse stores. *Success is Seen Limiting the Growth of Super Warehouse Stores*, SUPERMARKET NEWS, May 16, 1983, at 1.

34. See, e.g., Allvine, *supra* note 8; *Competing for Shoppers*, Washington Post, July 17, 1980, at E1, col. 1.

35. *Depot Stores Gaining but Conventional Stores Still Viable*, SUPERMARKET NEWS, July 25, 1983, at 1.

36. *Two Super Depot Stores Open Doors in Kansas City*, SUPERMARKET NEWS, Aug. 29, 1983, at 26; *Supermarkets, Depot Units Battle in K.C.*, SUPERMARKET NEWS, Jan. 17, 1983, at 4.

several markets.³⁷

II. COMPETITIVE RESPONSES TO ENTRY

Theoretical reasons why supermarkets might want to engage in predatory pricing are discussed in Section IV. However, the theory that the supermarkets' price cuts are predatory is only one possible explanation. The major alternative that must be considered is the possibility that the price cuts are normal competitive behavior. This Section will set forth more precisely what the phrase "normal competitive behavior" should mean, and what might be observed if the supermarkets' pricing is in fact competitive.

This issue is often given short shrift in the predation literature. Most analysts begin by assuming the existence of a monopolist, or at least a dominant firm, and attempt to devise tests to distinguish between legitimate and predatory tactics by the monopolist.³⁸ In the real world, though, monopolists are not labeled this clearly. Even a highly concentrated retail grocery market, such as one with four firms accounting for eighty percent of sales,³⁹ is not so concentrated that competitive behavior can be ruled out *a priori*. Thus, any legal standard will have to distinguish cases of predatory pricing not merely from the legitimate pricing responses of a firm with market power, but also from the legitimate pricing responses of competitive firms.

A. *The Competitive Response To Entry*

Consider a market which is served by a handful of conventional supermarkets behaving competitively in the sense that each takes the others' price and output decisions as given. In economic theory, competitive markets are either perfectly competitive or monopolistically competitive.⁴⁰ Perfect competition exists when each store is identical and can sell as much as it wants at the prevailing market price, but will sell nothing if it charges even slightly above that price. Under monopolistic competition, stores cannot sell an unlimited quantity at any price, and as they raise their price their sales

37. See *supra* notes 6-7.

38. See, e.g., Scherer, *supra* note 21, at 869; Williamson, *supra* note 19, at 286; Baumol, *supra* note 18, at 4 n.11.

39. According to a 1977 census of business data, only six metropolitan areas in the country had a concentration ratio this high. In 1972, only two metropolitan areas were this concentrated. MARION, *supra* note 8, at 212-20.

40. See generally F. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 14-24 (2d ed. 1980).

decline but do not fall to zero. These stores cannot use this power over price to earn supracompetitive profits, however, because under monopolistic competition free entry will cause the number of stores to increase until each store makes only enough sales to cover its costs (including a normal competitive profit).⁴¹

The monopolistic competition model seems to describe retail grocery markets more accurately. Nonprice differences among supermarkets, such as different locations, make it unlikely that any single supermarket can make unlimited sales by charging prices only slightly below its rivals, or that its sales would fall to zero with only a slight increase in price.⁴² Thus, if retail grocery markets behave competitively, they probably behave more like monopolistic competitors than perfect competitors. At any rate, our conclusions are stronger if a retail grocery market is instead perfectly competitive,⁴³ so we will adopt the less favorable assumption of monopolistic competition.

Assuming monopolistic competition, the equilibrium position for a representative store will be that shown in Figure 1. The store will sell a quantity Q_1 at the price P_1 .⁴⁴ At that price, the store will earn just enough to cover the average total costs (ATC) associated with that level of operation, and therefore will not earn any excess profits. If the store's demand curve (the line marked D) were farther to the right, so that the store could charge a price above its total costs at some levels of operation, the resulting profits would eventually attract new stores into the market. The increased number of stores would automatically reduce the sales the existing

41. As used hereafter, the term "costs" will include a normal competitive rate of return on capital.

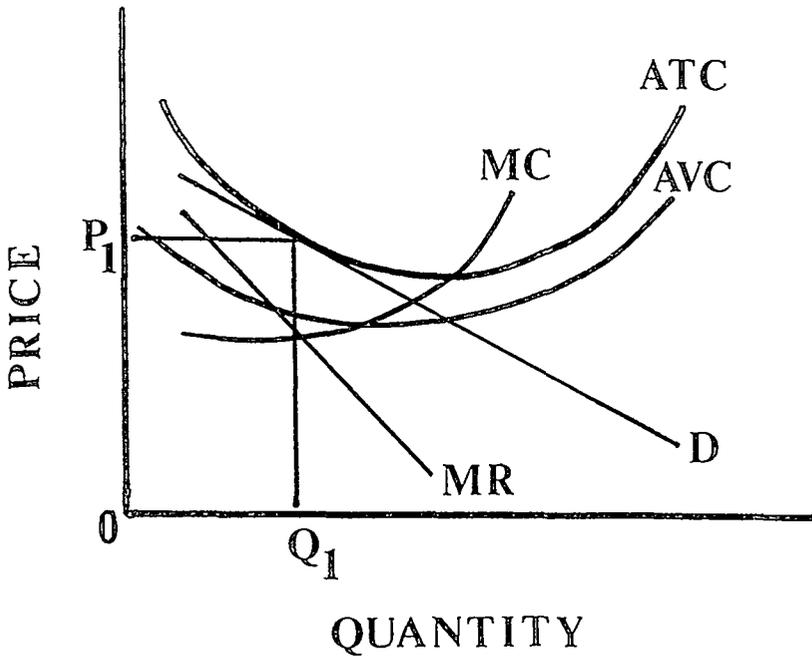
42. Grocery markets might also be monopolistically competitive because of the difficulties buyers face in attempting to compare overall price levels at competing supermarkets. See generally Salop & Stiglitz, *Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion*, 44 REV. ECON. STUD. 493 (1977); Schwartz & Wilde, *Imperfect Information, Monopolistic Competition, and Public Policy*, 72 AM. ECON. REV. 18 (May 1982) (papers and proceedings) (all analyzing the conditions under which imperfect information can lead to monopolistic competition).

For studies of consumer information about prices at competing supermarkets see Devine & Marion, *The Influence of Consumer Information on Retail Pricing and Consumer Behavior*, 61 AM. J. AGRICULTURAL ECON. 228 (1979); McCracken, Boynton & Blake, *The Impact of Comparative Food Price Information on Consumers and Grocery Retailers: Some Preliminary Findings of a Field Experiment*, 16 J. CONSUMER AFFAIRS 224 (1982).

43. See *infra* notes 62-64, 92.

44. Both graphs have been drawn and the discussion in this Section will proceed on the assumption that the store is only selling a single product at a single price. This is obviously a gross oversimplification. As a result, the major focus of Section III is the extension of this analysis to a multiproduct retail operation.

FIGURE 1



stores could make and thus shift the demand curves of existing stores to the left. When the demand curve reaches the position shown in Figure 1, existing stores would no longer earn excess profits, so the inducement for entry disappears and the market would be in equilibrium.⁴⁵

Before proceeding, we should point out that the market being considered here is the local neighborhood or zone in which the retail grocery stores compete. This market may not be an appropriate market for measuring a dominant store's market power because grocery store chains operating elsewhere in a metropolitan area often can easily expand into neighborhoods they do not currently serve. However, our concern here has nothing to do with making an assessment of market power. Our goal in this Section is to examine the pricing decisions of hypothetical competitive stores, so it

45. Figure 1 depicts the position of a marginal store that barely finds it profitable to operate in this market. A store that for some reason has either lower costs or higher demand than the marginal entrant might earn greater profits, which would represent a return on its unique cost or demand advantage.

is appropriate to focus on the neighborhood where prices are actually affected by the warehouse store.⁴⁶

1. *The Initial Price Cut*

Assume now that a new warehouse store is opened in the neighborhood. If the existing supermarkets were of just the right size to serve this neighborhood, the addition of the warehouse store will create a condition of excess capacity.⁴⁷ For example, if the amount of groceries sold before entry had been just enough to support four efficient-sized conventional supermarkets earning a normal competitive rate of return, the market probably will not be large enough to support the same four supermarkets plus a new, efficient-sized warehouse store. The total demand for groceries in the market is more or less fixed, and it is extremely unlikely that the stores will be able to stimulate enough new demand to fill the new capacity.

Consequently, the entrance of the warehouse store will leave the conventional store with fewer sales at any given price. If the conventional store continues to charge the pre-entry price P_1 it will lose business, and if it does less business then its average costs will rise. As Figure 1 shows, the pre-entry price P_1 will not be enough to cover the store's average total costs at any quantity less than Q_1 , so the conventional store will be operating at a loss if it continues to charge P_1 .

How would a competitive supermarket react to this loss of business? In the short-run, while capacity is fixed,⁴⁸ a competitive store should select the price which minimizes its total losses, taking its competitors' prices as given. Thus, it should not try to raise prices because if it does, and its competitors' prices remain the same, it

46. An outside supermarket will never enter this local market as long as the local market remains competitive, because the occasion for such entry will never arise. The ability of consumers within the local area to shop at outside stores must be considered, but this is simply one of the factors that determines the slope of the demand curve for groceries within this local neighborhood.

47. The term "excess capacity" is used here to mean more stores than the market can sustain in a long-run equilibrium, with each store earning a competitive rate of return. In a different sense of the term, monopolistically competitive markets always entail excess capacity because no firm makes enough sales to permit it to operate at the lowest point on its average total cost curve. See Figures 1 and 2. However, this form of "excess capacity" does not destroy the stability of the monopolistically competitive equilibrium, nor does it indicate that society would necessarily be better off if that "excess" were eliminated by removing some of the firms from the market. See *infra* notes 62-64 and accompanying text.

48. The short-run is usually defined as the period of time in which the stores cannot easily adjust capacity by laying off some employees, by moving to a smaller building, or even by closing an entire store. Possible adjustments to capacity which the stores might make over the longer-run are the subject of subsection 2.

will lose even more sales and suffer even greater losses. Instead, a store attempting to minimize its losses should lower prices to *increase* its sales until the marginal cost (MC) of an additional sale equals the marginal revenues (MR) the store receives from that sale.

The only exception to this principle is that a competitive store should stop selling if the price falls so low that it would be more profitable to close the store entirely. This "shut down price" is usually considered to be the firm's average variable costs (AVC).⁴⁹ Even in the short-run, a firm can usually save at least some of its costs by closing its doors entirely. If the costs that could be saved by closing down are greater than the revenues that could be earned by staying open, then a competitive loss-minimizing store should close down.

Thus, the initial reaction of a competitive supermarket upon the entry of a warehouse store should either be to reduce its prices to the point where marginal cost equals the marginal revenue associated with the new demand curve (D2) or to cease operations entirely. Figure 2 shows an equilibrium in which prices have been driven down to the store's average variable costs curve. The pre-entry equilibrium of Figure 1 is represented by dotted lines. Prices will not be driven below that level, because if they were, one or more of the established stores would find it more profitable to shut down, thereby increasing the sales available to the remaining stores.⁵⁰

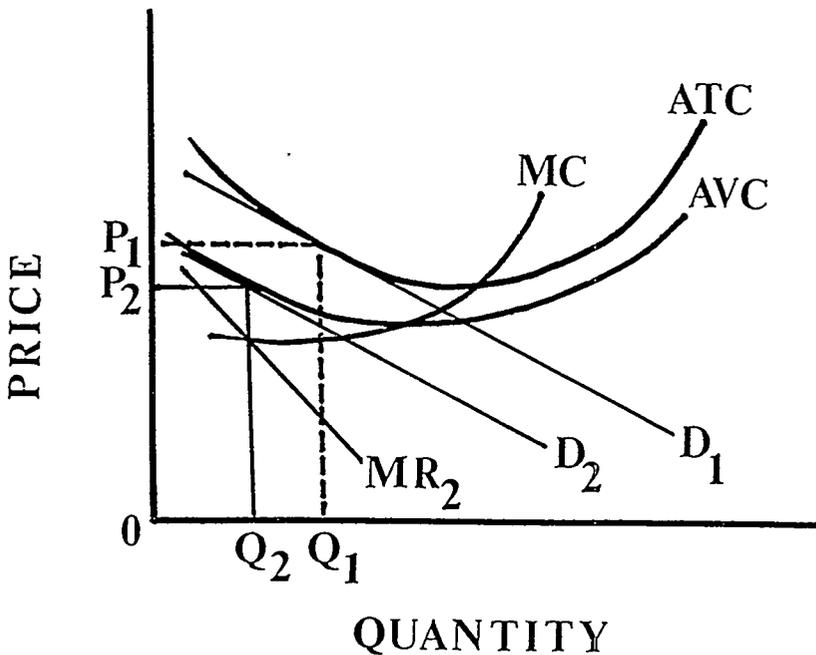
2. *The "Shake-out" Period*

While Figure 2 describes a conventional store's short-run reaction to the entry of a warehouse store, the situation cannot be a long-run equilibrium. The price P2 is insufficient to cover the store's average total costs at the quantity Q2 sold. Therefore, the store will lose money. In the short-run, the store will lose money regardless of what it does because of its fixed costs and the excess capacity created by the entry of the warehouse store. But when it is time to reinvest in those fixed costs (for example, when the store must decide whether to replace its equipment or renew its lease), it

49. A more accurate label would be "average recoverable costs." This issue is addressed in more detail in Section III.

50. Prices will not fall as far as the average variable costs if the quantity of sales siphoned off by the warehouse store is not very large. In such a case, the new equilibrium will be reached when marginal revenue equals marginal cost at a price above the average variable costs, in the range between Q1 and Q2. However, even if this occurs, it would not change our analysis significantly, so the remainder of the Article will consider only the equilibrium shown in Figure 2.

FIGURE 2



will not make that investment unless it can cover total costs.⁵¹

At this point, disinvestment will occur and the market's excess capacity will therefore be reduced. Some stores may leave the market while others may restructure their operations on a smaller scale, but in either event, the market's overall capacity will be reduced. Each reduction in capacity will leave more sales available for the remaining stores. That is, their demand curves will shift to the right, thus permitting them to raise their prices again. This pattern of disinvestment followed by price increases will continue until the price has risen to a level equal to the average total costs of the remaining stores. At this point, the stores will no longer be losing money, so no further disinvestment will occur.

51. Another way to approach this problem is to recognize that the classification of a store's costs as fixed or variable depends on the unit of time being considered. In the extreme short-run, such as a few days, very few costs can be varied, and a firm would be willing to price very low for those few days in order to make any contributions toward covering its fixed costs. As the length of the price war increases, however, more costs will become variable. In the extreme long-run, virtually all costs are variable, so average total costs equal average variable costs. See *infra* notes 94-97 and accompanying text.

This process is the classic method by which a competitive market adjusts from one equilibrium to another.⁵² The entry of a new competitor produces excess capacity, causing an initial drop in price which imposes short-term losses on all firms. Eventually, some firms are either forced out of the market or forced to readjust their capacity, and the price then rises to a level which allows the remaining firms to cover their total costs. The same process would be observed if the excess capacity had been created by the entry of another conventional supermarket, or by a decline in demand due to population shifts out of the market area.

The difficulty is that most of these effects—a decline in prices, followed by the exit of some stores, followed by an increase in prices—would also be observed in any case of truly predatory pricing. This will become more apparent when we examine the effects of the competitive process on the entering warehouse store, a task to which we now turn.

B. *The Effect on the Entrant*

1. *The Effect on the Entrant's Short-term Profits*

The previous Section explained how the entry of the warehouse store and the resulting excess capacity would force conventional store prices down to P2 in Figure 2. However, these price cuts by the conventional stores will attract customers away from the warehouse store, thus making the warehouse store less profitable.

The exact effect of the price cuts on the warehouse store's profits will depend in part on the warehouse store's cost structure relative to the cost structure of the conventional stores. Assuming that the warehouse store is less costly to operate than a conventional store, any short-term losses suffered by the warehouse store will probably be less than those suffered by the conventional stores.⁵³ In fact, if the warehouse store's average total costs are below the conventional stores' average variable costs, the warehouse store could still earn a profit during the price war even if price is driven down to the con-

52. The traditional focus of microeconomic theory has been the prediction of equilibrium behavior rather than the paths by which markets move from one equilibrium to another. See T. KOOPMANS, *THREE ESSAYS ON THE STATE OF ECONOMIC SCIENCE* (1957); F. FISHER, *DISEQUILIBRIUM FOUNDATIONS OF EQUILIBRIUM ECONOMICS* (1982). Therefore, one of the difficulties in analyzing predatory pricing is that it is inherently a disequilibrium phenomenon.

53. This may not always be the case. The warehouse store will probably also have to charge a lower price than the conventional stores. If the difference in price exceeds the difference in costs, the warehouse store's losses could exceed the conventional store's losses.

ventional stores' average variable costs. If the warehouse store's average total costs are above the conventional stores' variable costs, however, the warehouse store will suffer short-term losses during this period of excess capacity.

2. *The Effect on Entry and Exit Decisions*

Part A of this Section described how the conventional stores eventually reduced their capacity or exited from the market after prices fell following the warehouse store's entry. If the price war causes the warehouse store to suffer short-term losses, the warehouse store will have to make a similar decision about whether to disinvest. Short-term losses will not cause the warehouse store to exit immediately (just as they did not induce the conventional stores to exit as soon as prices fell), as long as the warehouse store is earning enough to cover its variable costs. However, when the time comes for the warehouse store to reinvest its fixed costs (for example, when its lease comes up for renewal), it will not make that investment unless it can expect to recoup those costs at some time in the future. The warehouse store will balance the profits that it can expect to make once some conventional stores have left the market and a new equilibrium has been reached, against the losses it will incur for the remainder of the "shake-out" period while that market adjustment is still occurring.

This is essentially the same calculation that the warehouse store made when deciding whether to enter the market. Presumably, if it was rational for the warehouse store to enter the market in the first place, because the profits to be gained were greater than the short-term losses, it is rational for the warehouse store to stay in the market when it reevaluates that decision during the "shake-out" period. However, there are two reasons why this may not always be the case.

First, when the warehouse store initially decided to enter the market, it may have been unsure about the size of its potential short-term losses. It may not have known whether the conventional stores would respond to its entry by cutting prices, or it may have underestimated the extent to which prices would fall or the length of time that price would stay down before some of the traditional stores exit the market.⁵⁴ Therefore, even though the initial decision to enter the market seemed rational, the warehouse store may real-

54. The entrant's uncertainty about future market performance is also important as a possible explanation for predatory pricing. This is discussed in more detail in Section IV.

ize after entry that it made a bad decision. When given the chance to reevaluate that decision during the "shake-out" period, the warehouse store may decide to exit the market. This would not necessarily be the case, for if the warehouse store would not save very much by exiting then it might actually be less costly to stay in the market, even though its owner might now wish that he had never entered. The point is simply that it would not be impossible for the warehouse store to decide to exit.

Second, even if the warehouse store decides to stay in the market, the losses it must incur to do so may affect its plans with regard to future expansion. The decision about whether to expand into an adjacent market is slightly different from the decision about whether to stay in the first market, because at the time of the decision the warehouse store will not yet have sunk any investments in the adjacent market. In effect, the warehouse store can save the total costs of one store by not investing in a new market, but it can only recover some of those costs by exiting from a market in which it has already invested. Thus, if the warehouse store has learned from experience that the profits it can make will not be enough to cover the total costs of each store, it will probably decide not to build any new stores.⁵⁵ Competitive price cuts could thereby deter plans for future expansion, even if they did not cause the warehouse store to close down its initial store.

C. *Difficulties in Distinguishing Predation from Competition*

The competitive response to entry analyzed in Sections A and B involves price cuts which may force the entrant to operate at a loss, which may lead to the withdrawal of the entrant, and which may discourage the entrant's expansion into other markets. Unfortunately, these are the same effects that would be observed after a successful predatory pricing campaign. This is why it is so difficult to distinguish predatory pricing from ordinary competition.

More specifically, the problem is that traditional antitrust cues, which focus on whether the defendant's price cuts were designed to induce exit or to discourage entry, do not work well in conditions of excess market capacity, where prices must decrease to induce the exit of some of the capacity. Were the price cuts a direct response to the warehouse store's entry? Yes; if the entry had not occurred,

55. If the price reduction in the first market was less than the warehouse store had expected, the effect would be just the opposite, and future expansion plans would be encouraged.

there would have been no excess capacity, and no price cuts would have been needed. Was the conventional store's price lower in the zone surrounding the warehouse store than in other zones? Yes; that was the only area in which excess capacity had been created. Were the price cuts aimed at taking business away from the entrant? Yes; the only way each store could minimize its losses was to spread its fixed costs over a larger sales base, and the only way to do this was to try to take sales away from the other stores. Could the price cuts drive the entrant out of business? Yes; this is at least a possibility, and even if they do not, they might well discourage it from expanding into other markets. Will prices go back up if the entrant is eliminated? Yes; once the excess capacity is gone, prices will inevitably rise until all firms are covering their total costs again.⁵⁶

Thus, the fact that price wars have deterred entry or discouraged expansion by the warehouse stores simply is not probative as to whether the prices being charged are predatory. It may well be true that the price wars have occasionally deterred entry or discouraged expansion. For example, the president of one warehouse store is quoted as saying: "If you think I'm going to put another store near Kroger if this [price war] continues . . . I'd have to be crazy."⁵⁷ Another president of a warehouse store reported that: "Kroger caused us enough blood to be spilled, so we're going to take another look before we try to bring more stores into Atlanta."⁵⁸ Professor Allvine may well be correct in concluding, after conducting an empirical survey of zone pricing, that "by meeting, or coming very near to the warehouse store prices, the grocery chains are slowing the spread of warehouse operation and reducing the threat they present to their higher-cost method of retailing."⁵⁹

56. Thus, Baumol's proposal to prohibit firms from raising prices in response to a competitor's exit would interfere with the normal competitive response to excess capacity, if that proposal was applied to competitive markets. Baumol implicitly recognized this, and limited his proposal accordingly. See Baumol, *supra* note 27 at 4 n.11 (permanence rule would be an "unnecessary encumbrance" if applied to a competitive market).

57. *Zone Pricing Prompts 'Predator' Charge*, CHAIN STORE AGE/SUPERMARKETS, Mar. 1982, at 20 (quoting Bill Long, President of Waremart, Inc.). The article also noted that the two Waremart stores that had been opened in the Memphis markets, where the price war took place, had not exited. See also *Need Freedom in Pricing to Regain Sales: Safeway*, SUPERMARKET NEWS, Oct. 24, 1983, at 11 (quoting Mr. Long as saying, "We will not put new stores in smaller towns where Safeway has only one or two stores. The threat of their dropping their prices lower than or to the same level of ours is very real.").

58. Atlanta Constitution, Aug. 10, 1982, at C4 (quoting Peter Gregson, Chairman of Warehouse Groceries Management, Inc.).

59. Allvine, *supra* note 8.

The problem is that these same effects would also be observed if the conventional stores behave competitively and entry or expansion is hindered only by normal competitive forces.

D. *Effects on Welfare*

1. *Efficiency in the Presence of Fixed Costs*

The prospect of a price war during the initial "shake-out" period is likely to reduce the warehouse store's expected profits. This may deter a warehouse store from entering in the first place, or it may cause it to exit the market during the "shake-out" period, or to forego plans for future expansion.⁶⁰ It may seem paradoxical that competitive behavior by established firms could discourage entry by a seemingly more efficient warehouse store. This paradox, however, is explainable.

The explanation lies in the definition (and, more particularly, in the timing) of the label, "more efficient." When a warehouse store is considering entry or expansion into a new market, the established stores in that market will have already sunk substantial investments in their stores. If the warehouse store enters, it will have to duplicate many of those investments. Thus, even if the warehouse store's costs are lower than the total costs of operating a conventional store, the warehouse store's costs may not be lower than the amount that could be saved if a conventional store were to exit. In that case, it would be inefficient to replace a conventional store with a warehouse store, so the effect of competitive pricing in deterring entry by the warehouse store is exactly the result the market ought to produce.

In the long run, if the warehouse store really has lower total costs then its entry will not be permanently blocked. Although a new warehouse store will be more costly than an established store in the short-run, while the conventional stores have already sunk their investment in existing facilities, this relationship will change over time as each investment comes up for renewal. The established stores will not renew those investments unless they can expect to recover the total costs of each investment, and they will not be able to do this if a more efficient warehouse store is about to enter the market. Indeed, if warehouse stores are actually more efficient than conventional stores, the conventional store owners may decide not to reinvest in their conventional store but to replace it with a ware-

60. See *supra* notes 53-55 and accompanying text.

house store.⁶¹ In general, the greater the technical efficiency of the warehouse store relative to the conventional store, the longer the warehouse store will be able to bear short-term losses while waiting for the conventional stores to disinvest, and the sooner a warehouse store will find it profitable to enter.

2. *Efficiency if the Pre-entry Market is Not Perfectly Competitive*

An important qualification must be appended to the analysis developed in the preceding sections. There are some situations where the market does not provide the proper incentives for entry, and in these cases the preceding analysis is not necessarily appropriate. For example, monopolistic competition between sellers with differentiated products does not inevitably lead to the optimal amount of variety among the market's offerings.⁶² If this type of competition results in too little diversity in retailing formats, welfare gains could conceivably result from encouraging the entry of warehouse stores by preventing conventional stores from cutting prices as far as they normally would.⁶³ However, to preserve those welfare gains prices might have to be permanently maintained above competitive levels to prevent market forces from subsequently driving the warehouse store back out of the market. In addition, the same models of monopolistic competition show that it is equally possible for there to be too much diversity in retailing formats,⁶⁴ in which case a better policy would be to relax the pricing rules so as to make it easier for price cuts to discourage entry. The indeterminacy of these optimal

61. Many supermarket chains have already opened their own warehouse outlets where the warehouse outlet attracted customers away from the chain's conventional stores. See *supra* note 33. One supermarket owner described the problem as follows: "Suicide's better than murder. If I don't build it, somebody else will." *Cub Power Shakes Up Potential Competitors*, SUPERMARKET NEWS, Feb. 28, 1983, at 1.

62. See Dixit & Stiglitz, *Monopolistic Competition and Optimum Product Diversity*, 67 AM. ECON. REV. 295 (1977); K. LANCASTER, *VARIETY, EQUITY AND EFFICIENCY* (1979). For an application of this analysis to another antitrust issue, see Comanor, *Vertical Price Fixing and Market Restrictions and the New Antitrust Policy*, 98 HARV. L. REV. 983 (1985).

63. A similar argument would apply if there were noneconomic goals that would be served by protecting warehouse stores for their own sake. Cf. *United States v. Von's Grocery Co.*, 384 U.S. 270 (1966) (endorsing the use of the antitrust laws to "halt the gradual demise of the small businessman"). More recent Supreme Court decisions appear to have abandoned this goal, at least where the preservation for small businessmen cannot also be justified on economic grounds. Cf. *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 53 n.21 (1977) ("an antitrust policy divorced from market considerations would lack any objective benchmarks"). Such arguments are beyond the scope of this Article. We only note here that attempting to serve these noneconomic goals by adjusting the predation standard would raise administrative problems similar to those discussed in the text.

64. See *supra* note 62.

diversity arguments, combined with the obvious administrative costs of a rule preventing conventional stores from lowering prices in response to the entry of a warehouse store, argue against using predatory pricing rules to achieve the optimal level of diversity.⁶⁵

Similar problems arise if the conventional stores do not act as perfect competitors, with each taking the others' prices as given, but instead collude (either explicitly or by tacitly recognizing their interdependence) to raise prices above the competitive level. Entry by a warehouse store, even a warehouse store whose entry would not have been efficient if the conventional stores had been pricing competitively, might then increase social welfare by disrupting the pattern of collusion. In this situation, there could be welfare gains from limiting the extent to which conventional stores could reduce their prices, in order to make it easier for warehouse stores to enter. As Professor Scherer has pointed out, the extent of the welfare gains would depend on a trade-off between the short-run inefficiency caused by preventing conventional stores from pricing competitively during the "shake-out" period and the long-run efficiency gains caused by encouraging entry to break up the pattern of collusive pricing.⁶⁶

Unfortunately, deciding where the permissible price level should be under this theory is a difficult, if not impossible task. In general, it depends on the the extent to which the established stores had been charging prices above the perfectly competitive price prior to entry and on the extent to which a warehouse store's entry would help bring those prices down. Thus, the pricing standard should be raised the most in a market where there are extremely high monopoly profits being earned prior to the entry of a warehouse store, and the least in markets that are competitive (all else equal). The structural characteristics of the grocery industry in this regard are analyzed in Section IV.

65. Moreover, a contrary rule would only improve welfare at the price of increasing the established stores' short-term losses. In effect, the established store would be called on to bear the costs of the subsidies necessary to provide the socially desirable incentives for increased diversity. It is not at all clear that this is the role the antitrust laws were intended to play. See Lande, *Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged*, 34 HASTINGS L.J. 65 (1982) (suggesting that Congress was less concerned about optimal economic efficiency, and more concerned about preventing unjustified transfers of wealth when it passed the Sherman Act).

66. Scherer, *supra* note 28, at 883-89. *But see* 3 P. AREEDA & D. TURNER, ANTITRUST LAW 166-67 (1976) (arguing that long-run tradeoffs are too difficult for courts to consider). As discussed in Section IV, the assumption that there is supercompetitive pricing prior to entry may not be very sound in retail grocery markets.

E. *A Note on Excess Capacity*

One final point must be addressed with regard to the assumption that the entry of a warehouse store creates a condition of excess capacity.⁶⁷ The entry of a warehouse store would not create excess capacity if the market previously had too few stores, for example, if a sudden population growth had exceeded the capacity of existing stores.⁶⁸ In that case, if the market is large enough to support all of the conventional stores plus the new warehouse store at each store's minimum efficient scale, the conventional stores will not be losing money so there is no need for them to reduce their prices upon the entry of a warehouse store.

One reason for our assumption of excess capacity has to do with the "lumpiness" of entry into the retail grocery market. For example, suppose that a neighborhood is served by four different supermarkets. The entry of a new, similarly-sized store would increase total market capacity by twenty-five percent. If the market had been operating at a competitive capacity prior to entry, it is very likely that entry on such a scale will create a condition of excess capacity. The volume of business that previously supported four stores simply may not be enough to support five.

Obviously, this conclusion depends on a number of assumptions about the efficient scale of entry and the shape of the stores' cost curves. Whether excess capacity exists in a particular market is a factual question that can only be answered on the basis of a full investigation. Two pieces of evidence, however, do suggest that excess capacity after entry may not be uncommon. First, for various reasons, such as changes in food-buying habits and the growth of fast food restaurants, the grocery industry as a whole may be "over-stored." A recent trade article reported that "despite the tide of store closings, which weeded out many small and unprofitable supermarkets around the country, there are still approximately 20% more supermarkets than are actually needed."⁶⁹ It is not clear what this figure was based on, and national conditions would not necessarily reflect the capacity in every local market anyway. Nevertheless, this commentary does suggest that excess capacity is not an impossibility.

67. See *supra* notes 34-36 and accompanying text.

68. Excess capacity could also be less likely if retail grocery markets were perfectly competitive rather than monopolistically competitive and conventional stores' cost curves were perfectly horizontal over a large portion of their range.

69. *How Hard Will Warehouse Pricing Hit?* CHAIN STORE AGE/SUPERMARKETS, Jan. 1980, at 36.

Second, the entry of warehouse stores has not been met with price wars in every instance. Most of the reported cases *without* price wars seem to involve sun belt locations where recent population growth may have left local markets with insufficient rather than excess capacity. According to a *Supermarket News* survey article, conventional stores in Houston, Albuquerque, and northern Texas did not drop prices in response to the entry of warehouse stores.⁷⁰ Conditions in a region as a whole are not necessarily indicative of the capacity in a particular local market that a warehouse store has entered, but these facts are consistent with the possibility that in those cases entry did not produce excess capacity.

Most generally, our point is that excess capacity may be more common in predatory pricing cases than is usually recognized in the literature. The literature has typically assumed that the alleged predator is a monopolist, in which case excess capacity is unlikely, since monopolists tend to produce too little output. At most, there has been a grudging recognition that excess capacity may be present in unusual cases, such as those involving declining industries.⁷¹ However, many predatory pricing cases involve markets where it is not clear whether the defendant has monopoly power and where the hypothesis that the market is behaving competitively cannot be immediately rejected. In these markets—and especially in markets best described by models of monopolistic competition, where firms in equilibrium are necessarily operating at the maximum capacity the market will support—excess capacity is a distinct possibility.

Thus, any legal rule concerning predatory pricing must deal with the possibility that the market may have been at a competitive equilibrium prior to entry and that the entry disrupted that equilibrium by creating temporary excess capacity. In such a market, temporary price cuts are the normal market mechanism for determining whether the entrant will succeed or fail in displacing an established firm. A legal rule that makes such price cuts more difficult only frustrates that mechanism without producing any corresponding social benefits.

70. *Markets React with Vigor to Box Store Competition*, SUPERMARKET NEWS, Apr. 28, 1980, at 4. Price wars occurred in San Antonio, but these were apparently in response to the entry of Kroger on a very large scale rather than in response to the entry of a warehouse store. See *Groceries Aiming Low in City Price Wars*, ADVERTISING AGE, Nov. 23, 1981, at 44; *Handy Andy Sues H.E.B. in "Predatory Pricing" Case*, SUPERMARKET NEWS, June 21, 1982, at 1.

71. Professors Joskow and Klevorick explicitly take this position. Joskow & Klevorick, *supra* note 3, at 253-54. See also *supra* notes 38-39 and accompanying text.

III. DEFINING THE LOSS-MINIMIZING PRICE

A predatory pricing standard can address the problem of distinguishing between predatory and competitive pricing in one of two ways. One method is to exclude from consideration any market that was behaving competitively prior to the alleged predation. This approach was taken explicitly in the Joskow-Klevorick proposal, which would dismiss any case in which the market structure was not conducive to long-term monopoly power.⁷² Such a limit is also implicit in the proposals of Professors Baumol, Williamson, and Scherer.⁷³

Another approach is to still require that the defendant keep its prices above some measure of variable costs, even if the market appears to be competitive. This is the position taken by some commentators, who argue that as a practical matter it is too difficult for courts to tell whether any given market presents a serious risk of long-term monopoly power.⁷⁴ As noted earlier, this approach has been adopted by many federal courts.⁷⁵

This second approach is consistent with the analysis of Section II, which showed that competitive firms have no legitimate reason to respond to entry by pricing below marginal or average variable costs. However, Section II did not attempt to define these concepts as they would apply to multiproduct retailers such as grocery stores. This section will demonstrate that the application of such a standard to multiproduct retailers presents many serious problems.

72. See *supra* notes 23-25 and accompanying text.

73. Professor Baumol's position is described earlier at note 56. Professor Williamson also acknowledges that "[his] output rule is restricted to dominant firms and collusive oligopolies." Williamson, *supra* note 26, 88 YALE L.J. at 1194. Professor Scherer does not explicitly state an exception for competitively structured industries, but he suggests that courts should inquire into, among other things, "the structural consequences actually flowing from the [challenged] behavior." Scherer, *supra* note 28, at 890. Presumably, Scherer would not find a violation if the industry structure was such that there was no risk of long-term monopoly power.

74. This is apparently the position of the original article by Professors Areeda and Turner which made no exception for competitively-structured industries. Areeda & Turner, *supra* note 1, at 704-20. See also Zerbe & Cooper, *supra* note 4, at 691-92 (criticizing the Joskow-Klevorick "two tier" approach and advocating a price-cost standard to be applied to all industries); McGee, *supra* note 22, at 319-20, 326 (supporting similar approach if there is to be any rule against price cutting at all). While Professor Areeda has also emphasized the difficulty of determining which industries are susceptible to long-run monopoly power, he now is apparently willing to make an exception to his variable cost standard for markets where monopoly power is clearly unlikely. P. AREEDA, *supra* note 18, 123-24.

75. See *supra* note 19 and accompanying text. But see *supra* note 25.

A. *Fixed, Variable and Recoverable Costs*

The reason why a competitive firm should not price below its variable costs is derived from the more basic principle that any firm trying to maximize its profits or minimize its losses should not take any action unless the gains from that action equal or exceed its costs. When the action at issue is the continued sale of a product, and the firm is a competitor who takes the market price as given, the gains from selling the product are the market price of that product multiplied by the number of units sold.⁷⁶ Thus, a competitive firm should continue selling a product as long as the market price is at or above the marginal cost of each additional sale.

However, "marginal" in this context can have several meanings. Properly interpreted, the appropriate "marginal" cost depends on the alternative to which the chosen course of action is being compared. For example, one choice facing a firm is whether to continue selling at the same level of output or whether to reduce its output and sell one unit less. For purposes of this decision, the appropriate marginal costs are the costs that would be saved by reducing total output by one unit, so it is these costs that should be compared to the gains from each sale (that is, the market price). This is the interpretation most economists give to the term marginal costs.

Reducing output by a single unit is not the only alternative a firm must consider, though. It could also reduce production to, say, half of its previous output and make only half as many sales. In this case, the benefits that would be foregone are still equal to the market price multiplied by the number of sales. However, the costs that would be saved may be substantially different from the costs that would have been saved by reducing output by only one unit. If output is cut in half, the firm may be able to sell some of its production equipment, lay off some of its employees, move to a lower rent location, or make any number of other changes that would not have been possible if output had been reduced by only a single unit. The appropriate comparison in this case is therefore the total sales revenues the firm would be giving up (the market price multiplied by half the total output), versus the amount of the firm's total costs that it would be able to save. In other words, the firm should cut its output in half if the average or per-unit revenue (the market price)

76. If the firm is a monopolistic competitor, it need not take the market price as given, and this principle needs a slight qualification. See *infra* notes 92-93 and accompanying text. An adjustment is also required when sales of one product increase the revenue received from other products. See *infra* notes 87-91 and accompanying text.

falls below the average change in total costs (the reduction in total costs divided by the number of units of output no longer being produced). This average change in total costs is closer to what economists call average variable costs.

The extreme example of this calculus is the case of a firm that would save more by shutting down entirely than it would lose by giving up all of its sales at the current market price. A firm which shuts down entirely will reduce its costs by an amount equal to all of its current operating expenses plus whatever it can salvage from its fixed assets. For example, a supermarket which goes out of business will no longer have any costs for labor or utilities. If it can sell its inventory, equipment, and the store building or any portion of the lease that remains, it will have eliminated these costs as well, except to the extent that the price received for the assets falls short of their original cost to the store. The part of the total costs which can be recovered in this way is referred to as either the non-sunk, recoverable, or total incremental costs.⁷⁷ Thus, if total sales revenue falls below the firm's recoverable costs—or to put it another way, if the firm's *average* revenue falls below its *average* recoverable costs—the firm will minimize its losses by shutting its doors altogether. If the firm is acting as a profit-maximizing competitor, it should not be willing to stay in the market under these conditions.

Seen from this perspective, disagreements between proponents of variable and marginal cost standards are really only disagreements over how much of a reduction in sales the firm should be required to consider. Marginal, variable, and recoverable costs are all concepts involving the extent to which total costs would be reduced if total output were changed.⁷⁸ They differ only in the degree of change in total output which is being considered, and even then the difference is one of degree and not of kind. In theory, a profit-maximizing firm will consider all possible changes in output which might minimize its losses.⁷⁹ Therefore, the remainder of this sec-

77. Baumol, *supra* note 27, at 9 n.26; Joskow & Klevorick, *supra* note 3, at 252 n.79. See also *MCI Communications Corp. v. American Tel. & Tel. Co.*, 708 F.2d 1081, 1115-18 (7th Cir. 1983).

78. To make a technical distinction, "variable" costs are usually those which can be reduced by cutting output to zero without going out of business, while "recoverable" costs include any costs which can be saved by going out of business. For example, a store's lease would not normally be a variable cost (if the rent must be paid even if the store does not sell anything), but it probably would be a recoverable cost if the store could find a subtenant for the site if it closed operations entirely. But either variable or recoverable costs can also be thought of as "marginal" costs in the sense that they are marginal to some specified change in the firm's behavior.

79. For a more technical analysis supporting this conclusion see Ordovery & Willig,

tion will not be concerned with preserving careful distinctions among these terms. Recoverable costs will be the term used here, relying on a precise specification of the change in output being considered when there is danger of confusion.

B. *The Proper Unit of Analysis*

The previous section described a firm selling a single product, which had only to decide how much of that product to produce and sell. This is obviously not the situation of a retail grocery store, which must make pricing decisions on thousands of products or product lines. The general principle, however, is still the same. A competitive firm should not continue to make sales in any product, product line, department, or even an entire store, when the revenues received from those sales at current prices do not cover the costs that could be saved if those sales were discontinued.

In theory, therefore, a single product is a perfectly appropriate unit of analysis. In most cases, if a store were to cut back on sales of one particular product (say, Crest toothpaste) the only savings in costs would be the wholesale price of that product.⁸⁰ It is unlikely that discontinuing sales of Crest alone would allow the store to reduce its labor costs, its energy bills, or its store rental, so none of those elements of overhead costs should be treated as recoverable costs in this context. There might, however, be a savings from being able to use the shelf space that formerly held the discontinued product to sell some other product. In such a case, the opportunity cost of that shelf space (admittedly a difficult figure to calculate) should also be counted as a recoverable cost. If the average of these recoverable costs exceeds the price that the store is charging for the discontinued product, the store is not minimizing losses or maximizing profits the way that a competitive store would.⁸¹

A similar analysis is also appropriate with regard to an entire department or group of products (for example, all bathroom supplies). The costs saved by eliminating those sales would include not

supra note 20, at 16-18. See also *William Inglis & Sons Baking Co. v. ITT Continental Baking Co.*, 668 F.2d 1014, 1037 (9th Cir. 1981) (adopting a similar approach to defining "variable costs").

80. Note that if a product line is being completely discontinued and the firm cannot easily resell the inventory it had on hand, even the invoice price of that inventory is not a recoverable cost. In such a case, the only recoverable cost is the price at which the inventory can be resold. In the very short run, a competitive store would therefore be willing to cut its price all the way down to this level.

81. A necessary qualification to this statement dealing with the case of "loss leader" pricing is discussed in part D of this Section.

only the wholesale prices of the individual items and the imputed value of the shelf-space used to display them, but could also include some items that might normally be classified as overhead costs. For example, the advertising devoted to bathroom items could be eliminated and the amount saved by running smaller advertisements or being able to use more space to advertise other products would be counted as a recoverable cost. If bathroom sales had been a large enough portion of the store's total sales, the store might be able to reduce the number of checkout clerks or stock-handlers, in which case the reduction in labor costs should also be treated as recoverable costs. In general, the costs that qualify as "recoverable" for a whole set of products will be larger than the sum of the recoverable costs for each individual product because more overhead costs can be recovered if large groups of products are simultaneously discontinued. The principle is still the same, though. If the recoverable costs exceed the revenues derived from those products at current prices, then a competitive store would minimize its losses by discontinuing those sales.

The application of this analysis to an entire store should now be clear. Discontinuing the operation of an entire store will save all operating expenses such as labor costs or utility bills. It will also save all of the fixed costs associated with that store except for those which are sunk, such as insurance premiums which will not be refunded by the insurance company, or rental payments on a lease for which no sublessee can be found. If the store is part of a chain, it may also be possible to recover some of the costs associated with the chain as a whole. For example, with one less store in the city the chain may be able to pay its area manager less, reduce its warehouse expenses for that area, or do less advertising in that area. These savings should all be treated as recoverable costs, and if the current market prices do not result in enough revenue to cover the total amount of these recoverable costs, a competitive firm should close the store.

C. *Welfare and Recoverable Costs*

The point of the preceding section is that a store is not competitively pricing if its prices do not cover its recoverable costs at every level of analysis. However, the converse is also true. If a store sets prices so as to cover the total recoverable costs for every product and every group of products taken together, it is pricing in a com-

petitive manner and should not be the object of antitrust concern.⁸²

The implications of this conclusion are not always obvious. For instance, it is often alleged that conventional supermarkets respond to the entry of a warehouse store by lowering the prices of the items sold by the warehouse store, which consist primarily of staples, and making up the lost revenue by raising the prices of fresh produce and other items which the warehouse store does not provide.⁸³ The analysis of the preceding sections, however, suggests that there may be nothing wrong with this practice, as long as the conventional store is at least pricing above its recoverable costs for each department and individual item. That is, there may be nothing wrong with the conventional store paying for its entire overhead from the revenue received from items on which it does not compete with the warehouse store, and pricing the items on which it does compete at a level which barely covers the recoverable cost for those items.⁸⁴

At first glance, this practice seems unfair to the warehouse store. Faced with this sort of pricing, the warehouse store will not be profitable unless it can cover its total costs with prices that are high enough only to pay for a conventional store's marginal or recoverable costs. However, this is actually an efficient result, because if the warehouse store's total costs are not lower than the conventional store's marginal costs on the items which are carried by both,

82. Keep in mind the possible adjustments to this standard noted earlier in part D of Section II, if the incumbent stores had not been pricing as perfect competitors prior to the warehouse store's entry.

83. There is some empirical evidence to support this. A study of supermarket chains' responses to competition from limited-line discount stores before the advent of warehouse stores, found that supermarkets charged a much lower price for standard groceries. However, they charged a slightly higher price for meat, a product not sold by the discount store. The overall effect, though, was that the supermarket's average prices in cities where it faced discount stores' competition were slightly lower than in cities without such competition. Mori & Gorman, *An Empirical Investigation into the Relationship Between Market Structure and Performance as Measured by Prices*, 48 J. FARM ECON. 162, 169-70 (1966).

84. Although it seems like the conventional store is engaging in cross-subsidization, which usually implies some form of market power, it is actually just the opposite. When there are joint costs to selling several products, at least some products will have to be priced high enough to cover those joint costs as well as the marginal costs associated with each product alone. Market power is present only if the firm's revenues on its products as a whole are sufficient to give it supracompetitive returns, or if the firm is able to price any single product above the price that a firm selling that product alone could charge. Thus, when a warehouse store forces a conventional store to lower its prices on staple items down to the costs of a store which carries staple items alone, it could just as easily be described as ending a form of cross-subsidization. For similar judicial treatment of the cross-subsidization issue, see *MCI Communications Corp. v. American Tel. & Tel. Co.*, 708 F.2d 1081, 1123-25 (7th Cir. 1983); *Northeastern Tel. Co. v. American Tel. & Tel. Co.*, 651 F.2d 76, 88-90 (2d Cir. 1981).

then it is socially more efficient to have those items retailed only in conventional stores. If the conventional stores are the only ones who will carry uncommon or difficult items such as fresh produce,⁸⁵ the amount of overhead expenses that are necessary to carry these items alone are irrelevant to the question of which stores ought to carry the remaining staple items. The only extra costs to society from having the conventional stores carry staple items are the recoverable costs that could be saved if conventional stores were to stop carrying those items. If these recoverable costs are lower than a warehouse store's total costs, then it is cheaper to society to have the conventional stores carry the staple items.

D. *Applying a Recoverable Cost Standard*

A recoverable cost standard is theoretically justified even in apparently competitive industries because no loss-minimizing competitive firm should ever set its price below recoverable costs.⁸⁶ In practice, however, when multiproduct retail operations are at issue it is impossible to apply the exact standard for which this theoretical ideal would require. Instead, innumerable practical adjustments have to be made, and such an adjusted standard can easily prevent defendants from reducing prices to the truly competitive price. This section will describe some of those difficulties.

1. *Adjustments for Revenue Spillovers*

One adjustment reflects the fact that the price a conventional supermarket charges for one product or set of products will often affect the revenue the store earns on other products. For example, it is common for stores to charge low prices for some items, usually advertised specials, in order to attract customers into the store where they will presumably purchase other items as well.⁸⁷ If these "loss leader" products are sold below the store's wholesale costs, the preceding analysis might suggest that a competitive firm would benefit from not making those sales, and that the "loss leader" prices might therefore be predatory.

The preceding analysis, however, cannot be applied in this way.

85. The reasoning is similar to the analysis developed in Section II, comparing warehouse and conventional stores when conventional stores had already made certain investments and the warehouse store had not. See *supra* notes 60-61 and accompanying text.

86. See *supra* notes 48-49 and accompanying text.

87. See, e.g., *Lormar, Inc. v. Kroger Co.*, 1979-1 Trade Cas. (CCH) ¶ 62,498 (S.D. Ohio 1979); Nelson, *Price Competition Among Retail Food Stores — Theory, Practice, and Policy Cues*, 48 J. FARM ECON. 172, 183-84 (1966).

The preceding analysis began with the assumption that the revenues generated by a product or product line consist solely of the price for which the product is sold, but this is obviously not the case when the sale of one product also increases the sales of other products.⁸⁸ In such a situation, a competitive store would be willing to cut the price of any given product until the revenue generated from the sale of that product *plus* that product's contribution to increased revenue from the sale of other products equals the recoverable costs associated with the first product. In other words, a price would not be below the competitive level unless it fell below that product's recoverable costs minus the contribution that product made toward increasing other sales. This adjustment reduces the price that a competitive firm could legitimately charge. It thus explains why stores are willing to price some items below cost even when not engaged in an attempt at predation.

A similar adjustment may be required when comparing prices to costs over a larger group of products. Part of the attraction of conventional supermarkets is that they carry a full range of products. If a conventional store were to discontinue an entire set of products, such as all products carried by the warehouse store, it would lose both the revenue from the sale of those products and the revenue gained on all other sales to customers who would no longer be willing to shop at a less-than-full-line supermarket. A competitive store would therefore continue to sell the staple products as long as their prices did not fall below the recoverable costs associated with those products *minus* the contribution to revenue those products made by bringing customers into the store.

As with the adjustment for pre-entry monopoly prices,⁸⁹ it is difficult to calculate just how much of a price reduction this would imply in any particular case. It is difficult to determine how many customers are brought into the store by a low price on any particular item, or how much those customers are likely to spend on other items in the store, so it will always be easy for a store to claim that a given price cut was justified by this sort of revenue spillover. Thus,

88. For a more technical analysis of demand interdependencies, including the case where the discontinued product is a substitute good whose availability reduces sales of other goods sold by the same firm, see Ordovery & Willig, *supra* note 20, at 20-21. This issue is analogous to interdependencies on the cost side when sales of one product reduce the costs of producing another product (for example, when production costs are subject to significant "experience curve" effects). Designing an appropriate cost-based predation standard to fit these cases has long been recognized as raising special problems. See, e.g., Areeda & Turner, *supra* note 1, at 697.

89. See *supra* notes 70-73 and accompanying text.

this adjustment clearly must be treated with great care, and one could argue that such spillovers should be clearly documented before being considered in antitrust litigation. However, if a strict evidentiary standard would prevent consideration of valid spillover effects that simply cannot be proven, legitimate competitive price-cutting could thereby be discouraged.

On a practical level, one way to minimize this difficulty is to conduct cost-revenue comparisons only for an entire store and not for any smaller units of analysis. While the operation of one store may have some effects on the revenue generated by other stores in the chain (for example, by maintaining the chain's visibility throughout a metropolitan area) those effects are probably much smaller than the revenue spillovers between individual product lines within a single store.⁹⁰ Ignoring any smaller units of analysis admittedly makes it possible for a store to engage in predatory pricing by charging below the loss-minimizing price on only those items carried by the warehouse store. However, without such an adjustment there is no practicable way that a price-cost standard can deal with the revenue spillover problem.⁹¹

2. *Adjustments for Price Effects*

In other situations, the current price of a product may overstate the amount of revenue the firm would lose by reducing sales rather than understate the effect on revenue. This could easily be the case if the market is monopolistically competitive and the firm is considering only a partial reduction in sales rather than entirely eliminating a product. In a monopolistically competitive market, a firm that is willing to reduce its sales can do so by charging a higher price on the fewer units that it continues to sell.⁹² A firm considering such a reduction should therefore balance the costs it would save against the revenue it would lose from making fewer sales *minus* the revenue that would be gained from charging a higher price

90. There may also be countereffects. A chain that closes one store would probably pick up some of those customers and thus increase sales and revenue at one of its nearby stores.

91. Cf. 3 P. AREEDA & D. TURNER, *ANTITRUST LAW* 183 (1976) (arguing that when joint production costs are substantial, cost-revenue comparisons should be drawn for the entire mix of products and not for individual product lines). Professors Areeda and Turner are more skeptical about allowing monopolists to make adjustments for revenue as opposed to cost spillovers, but they specifically note that their skepticism would not apply to "such promotional devices as 'loss leader' selling by grocery or department stores." *Id.* at 184 n.2; see also *Lormar, Inc. v. Kroger Co.*, 1979-1 Trade Cas. (CCH) ¶ 62,498 (S.D. Ohio 1979).

92. This is because monopolistically competitive firms face a downward-sloping demand curve (see Figure 1). A firm in a perfectly competitive market would not have this option because it would lose all its sales if it tried to raise its price even slightly.

on the sales it made. Thus, even when a product's price is slightly above the seller's recoverable costs, a monopolistically competitive firm may still minimize its losses by reducing its sales and charging a higher price. In this situation, the price standard should be at some level above average recoverable costs.

The size of this adjustment is extremely difficult to calculate. Moreover, the adjustment would not be necessary at all in markets that are perfectly competitive. Also, in markets that approach perfect competition (where sellers are weakly differentiated and as a result demand curves are almost flat), the necessary adjustment is extremely small. Furthermore, since this adjustment works in the opposite direction from the adjustment for revenue spillovers, errors caused by ignoring one adjustment may be compensated for by ignoring the other. Thus, while it is important to recognize these two problems, as a practical matter these two adjustments are probably not worth incorporating into a recoverable cost standard that is to be administered by judges and juries.⁹³

3. *Adjustments for the Time Frame of Analysis*

Another problem is that the classification of any cost as being either recoverable or nonrecoverable depends on the time span that is being considered. For example, if the challenged price reduction lasted only a few days, it is clear that the store would have recovered very few costs if it had chosen to do less business over those few days instead of reducing prices. It is impractical for a store to lay off any of its employees, to sell any of its equipment, or to transfer any of its inventory for such a short time. Therefore, almost none of these costs would be recoverable. At the other extreme, if the challenged price reduction was maintained for several years, the store would have had an opportunity to reconsider almost all of its fixed investments, so virtually all of its costs would be recoverable.

In theory, the time frame that should control the classification of costs as recoverable or nonrecoverable is the time that the price cuts were in effect.⁹⁴ This period is the unit of time for which the

93. A similar analysis is suggested by Professors Ordovery and Willig. Ordovery & Willig, *supra* note 20, at 16 nn. 24-25. See also 3 P. AREEDA & D. TURNER, *ANTITRUST LAW* 160-62 (1976) (discussing the related difficulties involved in attempting to prohibit a monopolist from "limit pricing" by setting a price above costs but below the profit-maximizing monopoly price).

94. This was the definition adopted by the Federal Trade Commission in the order settling its predatory pricing charges against Borden. *In re Borden, Inc.*, 48 Fed. Reg. 9023 (Mar. 3, 1983). For a description of the *Borden* litigation, see generally Schmalansee, *supra* note 2; *Borden, Inc. v. FTC*, 674 F.2d 498 (6th Cir. 1982).

firm chose to increase its output compared to what it would have sold at a higher price, or compared to shutting down. However, there are some practical difficulties with this time frame. First, the firm may not have known how long the price war would last, and may in fact have been planning for a much longer or shorter period of price reduction. These expectations would affect the number of costs that could appropriately be classified as recoverable.⁹⁵ Moreover, during the period of the price war the firm may have had to reinvest in fixed assets with an expected life that exceeded the expected duration of the price war, and whose profitability would therefore depend on the firm's expectations about post-war prices as well. The actual duration of the price war and the actual level of the post-war prices are less important than the firm's reasonable expectations regarding those two factors.

This is particularly important when considering whether a competitive firm would have minimized losses by shutting down entirely. If the price war is expected to be temporary and there are costs involved in closing down and restarting later, a rational, competitive store would be willing to set prices below its average recoverable costs if it expects to reopen after the price war.⁹⁶ There are at least some costs incurred in reopening grocery stores, such as the cost of rehiring employees or rebuilding the loyalty of angry customers. Factoring such costs into the analysis not only depends on having an accurate measure of those costs, but also depends on the firm's estimate of the length of the price war.

Thus, a precise classification of costs as recoverable or nonrecoverable must take into account the actual or expected length of the price war, which is probably impossible to do. Professors Areeda and Turner recognized this and adopted what they refer to as "a relatively arbitrary definition of middle-run variability in which most costs, including general overhead, are considered variable."⁹⁷ If a line must be drawn somewhere, then in many cases this may be an appropriate place to draw it, as a "middle-run" time span is presumably equally likely to be too long as too short, or too

95. The expectation of a long price war will increase the number of costs that would appropriately be classified as recoverable, while the expectation of a short price war will reduce the number of those costs.

96. P. AREEDA, *supra* note 18, at 151-53; Joskow & Klevorick, *supra* note 3, at 251 n.77. See also William Inglis & Sons Baking Co. v. ITT Continental Baking Co., 668 F.2d 1014, 1035 n.32 (9th Cir. 1981).

97. P. AREEDA, *supra* note 18, at 147. Even this classification is described by Professor Areeda as presumptive rather than absolute. He recognizes that the ideal time span would be one based on the actual duration of the price cuts.

lenient as too strict. However, this judgment must also rest on some assessment of the relative likelihood of each sort of error—that is, on the relative likelihood of competitive or predatory price cuts, an issue which is addressed in Section IV.⁹⁸ The key point is that whatever standard is chosen will necessarily leave a large degree of uncertainty about whether it accurately distinguishes between predatory and nonpredatory, competitive price-cutting behavior.

4. *Other Practical Difficulties*

The adjustments discussed in the preceding sections are really only special examples of the great practical difficulties inherent in the application of a cost-based standard to multiproduct retail operations. Considerable difficulties remain even if such adjustments are ignored and we focus solely on measuring middle-run recoverable costs. Some of the difficulties involve accounting problems—for example, a supermarket's records may not indicate what portion of the store's advertising was devoted to goods sold by both the supermarket and the warehouse store, or the records may not be sufficient to permit an estimate of the opportunity cost of the shelf space used to display a particular product.

Other difficulties are not merely accounting problems; they require the court to measure something that never took place. Any test based on recoverable costs requires the court to consider what would have happened had the store cut back on sales of certain products. In other words, a court must estimate what a store would have done if it had done something other than what it did. For example, the court may have to decide how many checkout clerks or stock handlers the store would have laid off if it had stopped selling a certain line of products, or how much less advertising a chain would have needed to do if it had closed the store in the neighborhood where the warehouse store entered. It will always be possible to get more-or-less "expert" opinions on these questions, but any decision based on such "expert" opinions must be an extremely uncertain one.

The usual response to these practical difficulties is to design simple rules of thumb which try to roughly approximate the true recoverable costs, knowing that they will overstate those costs in some cases and understate them in others. Rules based on fully allocated costs are one example. Applied to multiproduct firms or multistore

98. See *infra* notes 99-130 and accompanying text.

chains, such rules generally assign overhead costs to each product line or each store in proportion to the sales generated by that store or product line, or in proportion to some other rough but easily-calculated factor. In effect, such rules proceed as if the recoverable costs associated with each store or product line could be estimated by these formulas. In practice, though, such allocations can easily overestimate the truly recoverable costs, for they allocate some costs that will have been irrevocably sunk and others which, though recoverable if the entire chain were closed down, may not be recoverable at all in connection with any individual store or product line.

The adjustments discussed in this section might be defensible in industries where predatory pricing is a serious danger. The primary alternative to such adjustments is an extremely lenient standard, and if predatory pricing is a great danger then the risk of failing to prohibit true instances of predation may outweigh the risk of prohibiting innocent, competitive price cuts. If predation is not a serious threat, though, a crude price-cost standard is likely to have only negative effects by deterring some competitive price cuts without serving as a check on predation. Section IV therefore examines the likelihood of predatory pricing by conventional supermarkets.

IV. PREDATORY RESPONSES TO ENTRY

If grocery markets are not perfectly competitive, conventional supermarkets may have incentives to cut prices below the competitive loss-minimizing level described in sections II and III,⁹⁹ in order to prevent the entry of warehouse stores whose entry is economically desirable. Thus, while Sections II and III assumed supermarkets act as perfect competitors, in this section we assume supermarkets are deliberate predators.

For convenience, we also assume in this section that the warehouse store would just barely find the market profitable if the conventional stores respond in a competitive manner. In other words, the warehouse store would suffer losses during the initial "shake-out" period, but the profits the warehouse store could expect to make once the market returned to equilibrium would be just enough to compensate for those losses and make entry profitable. This assumption allows us to analyze the effect of predation on a truly marginal entrant, whose entry could be rendered unprofitable

99. For the remainder of Section IV, the price path defined in Sections II and III will be referred to as the "competitive" price, while any price below that level will be called "predatory."

merely by the slightest increase in expected costs. This is the most plausible case for predation. In markets where warehouse stores face better prospects, much greater losses would be required to make entry unprofitable.

Part A of this section sets out the traditional theory of "deep pocket" predation. Part B discusses predatory strategies used against entrants with imperfect information. Ultimately, neither of these predatory strategies is likely to be very successful in the retail grocery industry.

A. *Traditional "Deep Pocket" Predation*

The traditional theory of predatory pricing posits a predator who reduces prices below the competitive level, holding them there until the victim is driven out of business because he can no longer afford to sell at a loss.¹⁰⁰ The predator, free from the victim's competition, can then raise prices and earn enough profits to compensate for the losses incurred and profits foregone during the price war. For this strategy to be successful, it must succeed in eliminating the entrant and lead to a period of higher profits that will more than make up for the earlier losses. Each of these conditions must be examined.

1. *Will the Victim be Eliminated?*

Even if a supermarket is willing to reduce prices below the competitive level to drive out an entering warehouse store, it is not clear that this strategy will succeed. We have assumed that even a slight price reduction below the competitive level is enough to make entry unprofitable for a warehouse store that is still deciding whether to enter. But once the warehouse store has sunk the investments necessary to enter the market, it will stay in the market even if it is not earning any profits, unless prices fall so low that it is not earning enough to cover the costs it would save if it exited. This would happen only in the case of a very large price reduction, perhaps more of a reduction than the supermarket stores would find profitable to make. While a predator may be willing to reduce prices slightly below the competitive level for the sake of future profits, the losses the predator is willing to incur are strictly limited by its estimate of future profits.¹⁰¹

The conventional store's task is made more difficult by the fact

100. See *supra* note 16.

101. Another factor is the efficiency of the warehouse store. The more efficient the ware-

that it must attract more customers to eliminate the warehouse store than the warehouse store would have to retain in order to remain a viable competitor.¹⁰² As these sales are (by assumption) being made at a loss, the conventional store's losses during the price war will probably exceed the warehouse store's losses. Therefore, even if a predatory pricing strategy held out the prospect of great long-run gains for the conventional store, the conventional store may also have to incur great losses in order to achieve those gains.

Some writers have argued that a predator will never "outbid" an entrant by suffering short-term losses in the hopes of acquiring a future monopoly.¹⁰³ The argument is that if the established firm could acquire a monopoly by driving out the entrant, the entrant could also acquire a monopoly by driving out the established firm.¹⁰⁴ Both firms then have the same chance of future monopoly profits, so if they have equal access to capital, each should be willing to incur the same amount of losses in pursuit of those profits.¹⁰⁵

This argument may not apply to the retail food market because the market is not perfectly homogeneous. While a conventional store may be able to drive a warehouse store out of business entirely, the warehouse store may not be able to completely eliminate the conventional store if there are some consumers who prefer the full-service format, even at a higher price. In that case, conventional supermarkets and warehouse stores are not competing for the same stream of future profits, and it is conceivable that the future profits available to the traditional store are greater than those available to the warehouse store. Of course, the opposite result is also possible. If the warehouse store has significantly lower costs than the conventional stores, the warehouse store has the largest potential stream of future profits, so it may have the strongest incentive to stay in the market.

In addition, the assumption of equal access to capital may not apply. The most vocal complainants about alleged predation are usually the independent warehouse stores, who claim to have fewer

house store is, the harder it will be for the predator to force the warehouse store from the market.

102. R. BORK, *supra* note 22, at 149-52. This assumes that the minimum efficient scale for a warehouse store is sufficiently small that the store can stay in business while serving less than 50% of the local market. With that assumption, to drive the warehouse store out of business, the predators would have to be willing to sell to more than 50% of the market.

103. See Easterbrook, *supra* note 4, at 268-70 (arguing that a predator will never outbid an entrant by suffering short-term losses).

104. *Id.*

105. *Id.*

resources available to overcome predation attempts. Without trying to resolve the entire debate about the perfection of capital markets,¹⁰⁶ we can at least say that individual entrants may have limited access to funds. A supermarket chain with deep pockets might therefore be able to eliminate such entrants.

2. *Will Predation Lead to Future Profits?*

The preceding analysis rested on the assumption that if a conventional store succeeded in eliminating a warehouse store, it could look forward to future monopoly profits. This would be true only if the conventional store has a monopoly in the relevant market¹⁰⁷ and if the market is protected by some form of entry barrier which would give the conventional store time to enjoy the monopoly profits. If the conventional store must always be fighting off entrants with predatory price cuts it would always be suffering losses and would never earn the compensating profits.

Thus, a "deep pocket" does not by itself make predatory pricing an attractive strategy because even if it eliminated, at substantial cost, an underfinanced entrant, the predator would still be subject to entry by stronger and better-financed stores. Many warehouse stores are operated by well-established food chains, and other chains have announced their intention to enter the warehouse segment.¹⁰⁸ Indeed, the fact that conventional supermarkets have made the same price-cutting response to the entry of chain-owned warehouse stores as they have to the entry of independent warehouse stores¹⁰⁹ casts serious doubt on the "deep pocket" theory as an explanation for the price cuts. Without some additional barrier to entry to protect long-term profits, "deep pocket" predation is unlikely to be a profitable strategy in this industry.

In fact, barriers to entry into the grocery business are relatively low compared to barriers in most other industries.¹¹⁰ For example,

106. See, e.g., F. SCHERER, *supra* note 45, at 104-08.

107. The same analysis applies to an oligopoly in which the firms managed to cooperate perfectly, or even to an oligopoly in which the firms manage some less effective degree of cooperation. Whenever we speak of a "monopolist" in this Section, this qualification should be understood.

108. See *supra* note 33.

109. See Allvine, *supra* note 8. The Allvine study showed that the incumbent stores responded with the same price cuts to the entry of warehouse stores owned by the Food Giant chain as they did to the entry of warehouse stores owned by a smaller, warehouse-only operation.

110. See *In re Grand Union Co.*, 102 F.T.C. 812, 857-59 (1983). In 1983, the average cost of a new supermarket was less than \$1.5 million and the time lag from construction to break-even was approximately 12 months. Food Marketing Institute, *1983 Facts About Store*

the principle economy of scale in the grocery business involves the cost of a centralized warehouse to serve all of one chain's stores in a single metropolitan area. However, in most areas there are independent contractors who can supply warehouse services to unaffiliated stores. While there may be other economies of scale connected with newspaper advertising and site selection, these appear to be relatively modest as compared to economies of scale in many other industries.¹¹¹ Similarly, while there may be some consumer loyalties which a new store must overcome, they are not comparable to the brand loyalties associated with other, more heavily advertised consumer products.¹¹²

Of course, this analysis does not imply that barriers to entry are so negligible that there is no possibility of anticompetitive practices in the grocery industry. Cases of collusion or anticompetitive mergers, for example, could still raise antitrust concerns. Predation, however, is a much more expensive method of cartelizing an industry than is merger or collusion, and will usually require much stronger barriers to entry to make predation a profitable long-run strategy. Such barriers do not appear to be present in the retail grocery industry.

Indeed, the warehouse store segment may be even easier to enter than the conventional supermarket segment. Certainly, the rapid growth of warehouse stores in a number of markets seems to support the proposition that the barriers to entry are low. While data on entry costs is difficult to obtain, the opinion of the trade press seems to be that, "like the warehouse store, the box store may be a tempting format for retailers to try because of the relatively low start-up costs . . . [t]he cost of failure in these two store formats is much lower than in others."¹¹³ In short, while it is impossible to

Development 1, 9 (1983). While comparable cost figures were not available for warehouse stores, the average time lag from construction to break-even for warehouse stores was only six months. *Id.*

111. MARION, *supra* note 8, at 26-27. The authors of that study identify store loyalty and the scale economies associated with newspaper advertising and central warehousing as the principal barriers to entry. However, they offer no evidence that these barriers are particularly high as compared to similar barriers in most other industries. Moreover, they also conclude that entry is "virtually unrestricted for independent entrepreneurs who operate one or two stores and are affiliated with a viable, voluntary or cooperative wholesaler." *Id.* at 26. This is precisely the position of many warehouse stores.

112. *Id.*

113. *Inventory of Formats: Capsule Reports Update Status of Grocery Stores from Box to Super*, ADVERTISING AGE, Apr. 27, 1981, at S-2. The article drew a distinction between "box" and "warehouse" stores, defining the latter as the more extreme form of no-frills operation. This distinction is not important for purposes of this article.

prove that "deep pocket" predation will never be profitable, it is likely to be extremely rare in the retail grocery market.¹¹⁴

3. *Predatory Threats*

If an established conventional supermarket could successfully convince all potential entrants that it would charge a predatory price, the preceding analysis would not apply. If the potential entrants believe that the conventional store will carry out this threat, the anticipated losses would make entry unprofitable, and the entrants would choose not to enter. As long as potential entrants always chose not to enter, the conventional store would never have to enact its unprofitable predatory price cuts, so its strategy of making threats would be highly profitable.

The major problem with this strategy is that potential entrants are not likely to believe a threat if they know it would be unprofitable for the established store to carry through with the price cuts. However, this objection is less forceful if potential entrants are uncertain whether price cuts sufficient to deter entry would be profitable for the conventional stores. The following analysis therefore considers some pricing strategies designed to convince potential entrants that they are likely to meet with predatory pricing upon entry.

B. *Predation Against an Uncertain Entrant*

Economic analysis often assumes that all actors have perfect information about relevant cost and demand conditions. This assumption is merely a convenient fiction, but it makes analysis much simpler and does not greatly affect the qualitative results. In bargaining and strategy contexts, however, the extent of each party's knowledge about others' costs and opportunities can have an important effect on the outcome.

1. *Possible Sources of Uncertainty*

Early predation theorists usually assumed that the entrant knew with certainty that predatory pricing would not be a profitable strat-

114. It should be noted that most empirical inquiries into actual predatory pricing cases have found few, if any, confirmed instances of deep-pocket predation. McGee, *supra* note 1; Zerbe & Cooper, *supra* note 4; Koller, *The Myth of Predatory Pricing: An Empirical Study*, 4 ANTITRUST L. & ECON. REV. 105 (1971); Elzinga, *Predatory Pricing: The Case of the Gunpowder Trust*, 13 J.L. & ECON. 223 (1970); Zerbe, *The American Sugar Refinery Company*, 12 J.L. & ECON. 339 (1969). *But see* Yamey, *Predatory Price Cutting: Notes and Comments*, 15 J.L. & ECON. 129, 137-42 (1972).

egy for the incumbent firm.¹¹⁵ Uncertainty was introduced into the model by making potential entrants unsure whether the incumbent would act irrationally and engage in predatory pricing even though the incumbent as well as the entrant would be hurt by such a move.¹¹⁶ In other bargaining contexts, such as foreign policy negotiations, a player may gain from convincing an opponent that he would react irrationally if the opponent made a threatening move.¹¹⁷ Actually enacting the price cuts in the event of entry might then be rational, because the price cuts would help convince future entrants that the incumbent would in fact behave "irrationally."

Without introducing irrationality into the model, threats could also be successful if the entrant does not know how far it would be profitable for competitive supermarkets to reduce their prices in response to entry. As Sections II and III described, the size of the competitive loss-minimizing price cut depends on such factors as the incumbents' cost curves, the size of market demand, and the amount of excess capacity that would result from entry. In some markets, the competitive price cut defined by these parameters would still allow profitable entry by warehouse stores; in others, entry by a warehouse store would not be profitable. In most cases, an entering warehouse store will not be absolutely certain about the profitability of the market it proposes to enter.

This uncertainty can create an incentive for predatory and otherwise unprofitable price cuts. This is because the pricing strategy used by an incumbent supermarket may be one piece of information affecting the entering warehouse store's estimate of true market conditions. The most extreme case provides the clearest illustration. Suppose that the warehouse store believes that a supermarket would never reduce prices below the competitive, loss-minimizing level.¹¹⁸ Then, if the supermarket reduces its price to a level that would make entry unprofitable, the warehouse store will conclude that market conditions are less favorable than anticipated, and the decision to enter was a bad one. But if warehouse stores

115. See, e.g., R. POSNER, *supra* note 21, at 185-86; Williamson, *supra* note 26, YALE L.J. at 286-87; F. SCHERER, *supra*, note 45, at 338-39. A useful survey of recent technical literature is contained in Dixit, *Recent Developments in Oligopoly Theory*, 72 AM. ECON. REV. 12 (May, 1982, papers & proceedings).

116. *Id.*

117. T. SCHELLING, *THE STRATEGY OF CONFLICT* 207-29 (1960).

118. This example is taken from Salop, *Introduction*, in *STRATEGIC PREDATION AND ANTITRUST ANALYSIS* (S. Salop ed. 1981) [hereinafter referred to as *STRATEGIC PREDATION*].

always react in this way, a supermarket might find it profitable to price below the true competitive level in a market in which entry was in fact profitable, in order to mislead the warehouse store as to the market's true profitability.

In practice, the situation is more complex. All but the most naive entrants will realize that there is a chance of being misled in this manner, so they will not automatically conclude that a low post-entry price indicates unfavorable demand or supply conditions. If entrants are aware of the possibility that the incumbent firm(s) might set a deliberately misleading price, the analysis quickly becomes complicated by the "what if he knows that I know that he knows" sort of issue that complicates much of game theory. Nevertheless, the possibility that predatory price cuts might be a rational strategy for the incumbent cannot be ruled out on purely theoretical grounds. Recent theories have shown that even when the entrant is perfectly aware of the conditions under which incumbents would try to disguise market conditions by making otherwise unprofitable price cuts, such price cuts can still be a rational and successful strategy.¹¹⁹

2. *The Effect of Uncertainty on Exit and Entry Decisions*

These theories also suggest that predation need not be designed to force the warehouse store out of the neighborhood in which the price cuts take place. Instead, it may be designed to mislead the warehouse store into cancelling plans to expand into neighboring markets. If the warehouse store has not yet made investments in those markets, it can revise its expansion plans whenever it appears that prices in those markets will fall to a level too low to permit recovery of the warehouse store's total costs. Therefore, if the supermarket's response to entry in the initial market makes the supply and demand conditions seem less favorable than the entrant first believed, a warehouse store that was willing to enter the initial market may be unwilling to expand.

This strategy of deterring future expansion would be pointless unless the supermarket has stores to protect in other markets.

119. See Kreps & Wilson, *Reputation and Imperfect Information*, 27 J. ECON. THEORY 253 (1982); Milgrom & Roberts, *Predation, Reputation, and Entry Deterrence*, 27 J. ECON. THEORY 280 (1982). See also Milgrom & Roberts, *Limit Pricing and Entry under Incomplete Information: An Equilibrium Analysis*, 50 ECONOMETRICA 443 (1982); Rosenthal, *Games of Perfect Information, Predatory Pricing, and the Chain-Store Paradox*, 25 J. ECON. THEORY 92 (1981); Kreps & Wilson, *On the Chain-Store Paradox and Predation: Reputation for Toughness*, IMSS Technical Report No. 317, Stanford University (1980); U.S. DEP'T OF JUSTICE, *PREDATION: THE "NOISY" PRICING STRATEGY* (1980).

However, this condition is satisfied in most instances of alleged predation by supermarket chains. Professor Easterbrook has noted that entry-detering predation might still be unprofitable if the entrant were to enter all the markets simultaneously, leaving no remaining markets into which predation could deter expansion.¹²⁰ If the entrant faces some uncertainty about the market's supply and demand conditions, though, simultaneous entry into all markets may be too risky to be a realistic option. Experience indicates that most warehouse stores seem to enter one or two neighborhoods at a time, "testing the waters" before deciding whether to expand to additional locations in a given metropolitan area.

3. *Structural Requirements for Reputational Predation*

The possibility of using predatory price reductions to deter expansion into adjacent markets means that firms without any prospect of earning monopoly profits could still have an incentive for predation. This point is often overlooked, perhaps because most predation theories focus on the case of a firm which makes predatory price cuts in order to gain future monopoly profits.¹²¹ Predation, however, could also be profitable for a competitive firm if it deterred a warehouse store's entry into adjacent markets, and thus avoided the losses that entry would otherwise inflict on the conventional store. From the point of view of a potential predator, the differences between a loss and a normal rate of return should be just as much of an incentive as the difference between a normal rate of return and a stream of monopoly profits. If the latter is sufficient to make predation worthwhile, then the former would also be sufficient.

Therefore, a monopoly in the traditional sense is not absolutely necessary to make a predatory strategy profitable. However, the profitability of predation is still influenced by the market's structural characteristics, so these characteristics can still be used as a rough guide to estimate a supermarket's incentives for predation. In fact, the structural factors needed to make this form of predation profitable are very similar to those discussed in connection with "deep pocket" predation.¹²²

a. *Market Share.* One factor that bears on the profitability of predation is the size of the losses the supermarkets would have to

120. Easterbrook, *supra* note 4, at 286-88.

121. *See supra* note 16.

122. *See supra* notes 100-14 and accompanying text.

incur in order to force prices down to the entry-detering level. It is not enough for the incumbent simply to announce its willingness to sell at the entry-detering price. It must also have the capacity (or be prepared to build to such a capacity) needed to meet the market demand at that price. Usually, this will be possible only if the predator already has a large share of the market.

Of course, even firms with small market shares may successfully institute predatory pricing if they act in concert to lower prices, thus sharing the short-term losses among themselves. If perfect collusion were possible, then four firms, each with a twenty percent share, could use predatory pricing as effectively as one firm with an eighty percent share. However, reaching an agreement on a joint predation strategy is much more difficult than the more traditional task of reaching agreement on a cartel price. The gains from predation are more speculative and the potential collaborators are more likely to disagree about whether it is worthwhile to risk the short-term losses that a predatory strategy would impose on them. This is particularly true when the main purpose of predation is to deter entry into other markets in which some collaborators have large interests and others have little or no interest.

b. *Entry Hurdles.* Another factor that bears on the profitability of predation is the level to which a price must fall in order to convince a potential entrant not to enter a new market. In general, this factor depends on how long the lower price will be sustained and on how much the entrant has to risk in order to enter that market.¹²³

The latter is a function of entry hurdles, the costs an entrant must incur that cannot be recovered if it later exits.¹²⁴ If there were no sunk costs to entry, so an entrant could exit at any time and recover the full amount of his investment, then entry would be a

123. Milgrom & Roberts, *Limit Pricing and Entry under Incomplete Information: An Equilibrium Analysis*, 50 *ECONOMETRICA* 443 (1982).

124. Ordover & Willig, *supra* note 20, at 11-12. See also Baumol & Willig, *Fixed Costs, Sunk Costs, Entry Barriers, and Sustainability of Monopoly*, 96 *Q.J. ECON.* 405 (1981). These are not entry barriers in the Stiglerian sense of a cost that only has to be borne by entrants. See G. STIGLER, *THE ORGANIZATION OF INDUSTRY* 67 (1968). Incumbent supermarkets may have had to incur the same costs when they entered. However, this results in a difference between the incumbent and entrant, for the incumbent will have already incurred those costs, while the potential entrant is still deciding whether to make the investment. This is what permits entry-detering strategies: the entrant can still be deterred from making its investment while the incumbent (which has already made its investment) cannot.

virtually riskless proposition.¹²⁵ An entrant would then be willing to enter additional markets even if the likelihood of a predatory response was very high, on the chance that this might be the one time the incumbent firm decides against predation. If the incumbent responds to entry with predatory pricing, the entrant can exit the market without cost. If there is no predatory response, the entrant would realize all the gains of successful entry.

Of course, few markets meet this ideal of full reversibility of entry. There is always some sunk cost in terms of lost time and effort involved in planning the entry. There may also be other costs, such as advertising and depreciation, that can never be fully recovered. As industries go, however, the sunk costs required to enter retail grocery business appear to be low, with entry by means of the warehouse format the least costly.¹²⁶ Consequently, deeper and longer price cuts will be required to deter the expansion of a warehouse store than would be required to deter expansion in most other industries. The greater the price reduction that is required, the more costly a predatory price-cutting strategy will be.

c. *Traditional Barriers to Entry.* While barriers to entry in the more traditional sense may not be absolutely necessary to this form of reputational predation, they still make predation a more attractive strategy. Recent experiments appear to confirm this prediction: sunk costs alone, in the absence of traditional entry barriers, were insufficient to eliminate the threat of entry as a check on monopoly pricing.¹²⁷

The difficulty with relying solely on the threat of predation to deter entry is that the apprehension created by the predatory pricing may not survive long or be accepted by all potential entrants. Market conditions are constantly changing and each potential entrant has a different estimate of its ability to succeed in a given market. Without other barriers to entry, then, the predatory "lesson"

125. Baumol, *Contestable Markets: An Uprising in the Theory of Industry Structure*, 72 AM. ECON. REV. 14 (1982).

126. See *supra* notes 111-13.

127. Coursey, Isaac, Luke & Smith, *Market Contestability in the Presence of Sunk (Entry) Costs*, 15 RAND J. ECON. 69 (1984). However, these experiments did show that the presence of sunk costs occasionally permitted prices to rise slightly above the levels observed in markets where sunk costs were not required as a condition of entry. *Id.* at 80. See also Coursey, Isaac & Smith, *Natural Monopoly and Contested Markets: Some Experimental Results*, 27 J.L. & ECON. 91 (1984) (when entry was costless, experimental markets all behaved competitively).

may have to be repeated fairly frequently. The need for such repetitions greatly reduces the profitability of a predatory strategy.

4. *Predatory Intent*

It should now be clear why the distinction between predatory pricing and ordinary competition is so difficult to make. As the previous sections have shown, it is not absolutely necessary for the predator to have monopoly profits or to be protected by traditional barriers to entry for predation to be profitable. Even in the case of protected monopolies, predation can be profitable without the entrant's extinction. The purpose of predation may simply be to deter future expansion, in which case the only observable result of the predation would be the entrant's failure to enter other markets. This outcome, however, is no different than the outcome in a situation where expansion into other markets did not take place for other reasons, such as the inability of other markets to support a warehouse store. The difficulty of distinguishing these situations may explain why there are no empirical studies of predatory pricing cases which test for this form of predation.

In theory, it may be possible to test for predation designed to deter future expansion by examining the factors the defendant supermarket took into account in making its pricing decision. The competitive pricing strategies described in Section II are calculated by looking only at the market in which entry actually occurs, while the predatory strategy discussed in this section requires a balancing of the losses in that market against the gains to be had or the losses to be avoided in other markets. However, this test is extremely unreliable, for even the competitive pricing strategy can have an effect on the entrant's future expansion plans.¹²⁸ While this effect should not have any bearing on the incumbent store if the incumbent is pricing competitively, it is hard to imagine that the store would not be aware of that effect and, the effect will surely be mentioned in internal corporate debates.¹²⁹ All of the other problems of relying on internal memoranda as evidence of corporate intent—for example, the incentive this creates for destruction of documents, or the advantage this gives to well-counseled firms who can create the ap-

128. See *supra* notes 38-71 and accompanying text.

129. As Professor Porter has pointed out, most modern firms regularly consider the effects of their conduct on their competitors' strategies. Porter, *Strategic Interactions: Some Lessons from Industry Histories for Theory and Antitrust Policy*, in STRATEGIC PREDATION, *supra* note 118.

propriate paper record—are also relevant here.¹³⁰

V. CONCLUSION

In light of the numerous complaints about price wars in the grocery industry,¹³¹ our conclusion that predatory pricing is not a problem may seem incongruous. However, complaints about price cuts are often heard in competitive industries where entry is easy and prices are flexible, particularly if the industry is in the process of adjusting from one equilibrium to another. The grocery industry is not like the steel or automobile industries, where prices change at infrequent intervals. Instead, prices in the grocery industry have historically been extremely volatile.¹³² But this volatility is surely a sign of competitive vigor and not an indication that the industry is monopolized. If the legal system allows itself to be influenced by the number and volume of competitor's complaints, it will end up scrutinizing price cuts most closely in the very industries where such scrutiny is least needed.

We are not asserting that socially harmful predation is impossible among retail grocers. Our argument is simply that the costs of trying to prohibit such predation are almost certain to outweigh any potential gains. The costs stem from the impossibility of designing a legal standard that would prohibit predatory price cuts without restricting the competitive price cuts that are necessary to enable a market to move from one equilibrium to another. While a recoverable cost standard can perform that function in theory, in practice the number of adjustments required to apply such a standard to multiproduct retailers makes it a very crude standard at best.

In contrast to the difficulty of applying a recoverable costs standard, conclusions based on the grocery industry's structure are relatively easy to draw. By virtually any criteria—the height of barriers to entry, the level of market concentration, the extent of irreversible costs, or the stability of potential monopoly gains—retail grocery markets do not appear to be likely candidates for successful predation. In fact, if all the industries in the country were ranked accord-

130. R. POSNER, *supra* note 21, at 189-90.

131. See *supra* notes 6-9 and accompanying text.

132. Price wars among retail groceries were observed long before warehouse stores became popular, and they continue to exist in markets without warehouse stores. *E.g.*, *Miss. Price War Pulls Shoppers From 12 Counties, 3 Other States*, SUPERMARKET NEWS, Mar. 21, 1983, at 1; *Hot Quebec Price War Goes Into Third Week*, SUPERMARKET NEWS, Mar. 14, 1983, at 1; *The Superpower Supermarkets Go To War — Again*, Boston Globe, June 15, 1982, at 33.

ing to their susceptibility to predation, including heavy manufacturing industries with large fixed investments in capacity, and consumer goods that require large investments in brand loyalty, the retail grocery industry would be near the bottom of the list. Within the retail grocery industry, the warehouse store format would probably rank lowest of all.

Thus, there is little need for a rule requiring supermarkets to justify in court their price cuts against some form of price-cost standard. The costs of litigating the application of such a standard and the uncertainty of the outcome could deter competitive supermarkets from reducing prices,¹³³ resulting in clear social losses, and there is no real likelihood of corresponding gains. Even Professor Areeda, one of the leading proponents of a variable cost standard, has recently recognized as much.¹³⁴ While adhering to a variable cost test as the best standard for most cases, he would specifically except any industry that could easily be shown to be an unlikely locus of long-term monopoly power, and in which a variable cost standard would be extremely difficult to apply. Significantly, he identifies retail distribution as one example of such an industry.¹³⁵

Obviously, one case study cannot determine the best approach to predatory pricing charges in all industries. In some industries, it may be very easy to apply a recoverable cost standard and very difficult to evaluate the market's structural characteristics, in which case our recommended approach would be the opposite of that recommended for the retail grocery industry. Certainly, the structural characteristics in other industries will not always be as clear as they are in the retail grocery business, although the difficulties of applying a recoverable cost standard may often be just as great.¹³⁶

All our study suggests is that if there is to be a predatory pricing standard, courts should be sensitive to both of the following possibilities. If a case can easily be dismissed on price-cost grounds, or the "bad conduct" element of a monopolization charge, then it clearly should be dismissed. If it can be easily dismissed on structural grounds, for lack of market power or lack of a "dangerous

133. See Calfee & Craswell, *Some Effects of Uncertainty on Compliance with Legal Standards*, 70 VA. L. REV. 965 (1984); Craswell & Calfee, *Deterrence and Uncertain Legal Standards* (Sept. 1985) (unpublished manuscript on file at Case Western Reserve Law Review).

134. P. AREEDA, *supra* note 18, at 133.

135. *Id.* at 123-33.

136. See, e.g., *In re General Foods Corp.*, 103 F.T.C. 204, 288-90 (1984) (discussing the difficulties of applying a variable cost standard to a heavily advertised consumer product). The difficulties of applying a price-cost standard have been used to argue for a blanket rule of per se legality for all price-cutting. Easterbrook, *supra* note 4, at 334-37.

probability of success," then it also should be dismissed. That is, if one approach leads to a clear result, there is no need to subject firms to the uncertainty and legal expense of being scrutinized under the other approach as well. Presently, however, the question of which approach is the easiest can only be answered on a case-by-case basis.