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# DETERMINING THE EFFICIENCY OF HORIZONTAL MERGERS: AN EXAMINATION OF THE ABANDONED COCA-COLA/DR. PEPPER AND PEPSI/7-UP MERGERS OF 1986

Lloyd R. Cohen\*  
Thomas J. Alore\*\*

## INTRODUCTION

Horizontal integration or merger is the amalgamation of two or more independent competing firms selling similar goods or services.<sup>1</sup> The motivation for such mergers may be either pro-competitive, enabling the merged firms to utilize economies of scale and scope, or anti-competitive, reducing competition within the industry, thereby permitting firms within the industry to reduce output and raise prices. Predicting which net effect a merger will have, or analyzing the overall efficiency of an actual merger is, to say the least, extremely difficult.

Since the Supreme Court's 1962 decision in *Brown Shoe Co., Inc. v. United States*,<sup>2</sup> the courts and federal agencies have focused primarily on the market shares held by the merging firms to predict whether a merger will have an anti-competitive effect and thus violate antitrust law.<sup>3</sup> If the merged firms result in an entity controlling an "undue percentage share" of the relevant market, and there is a significant increase in the concentration of firms in that market, it is presumed that such a merger is anti-competitive.<sup>4</sup>

The problems with this approach are twofold. First, it is a very imperfect measure of the possible anti-competitive effects brought on by increased concentration. Second, the only method of refuting the inferences of probable anti-competitive effect of mergers in a concentrated industry is by showing

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1. K. CLARKSON & R. MILLER, *INDUSTRIAL ORGANIZATION: THEORY, EVIDENCE AND PUBLIC POLICY* 339 (1982).

2. 370 U.S. 294 (1962).

3. *Id.* at 344-45. The Court stated that "expansion through merger is more likely to reduce available consumer choice while providing no increase in industry capacity, jobs or output." *Id.* at 345 n.72.

4. *United States v. Philadelphia Nat'l Bank*, 374 U.S. 321, 363 (1963) (holding that congressional concern with increasing concentration warranted the presumption of anti-competitive effect).

countervailing pro-competitive efficiency enhancing effects.<sup>5</sup> Yet, even professionals in the field of industrial organization generally cannot marshal persuasive evidence of pro-competitive economics of scale and scope that will lower costs.

Recent attempts by the Coca-Cola Company ("Coca-Cola") to merge with the Dr. Pepper Company ("Dr. Pepper") and PepsiCo Incorporated ("Pepsi") to merge with the Seven-Up Company ("7-Up") have been abandoned because of Federal Trade Commission ("FTC") opposition and the obvious risk, cost, and delay that a court fight would entail. Was this a good result? Antitrust economics is ambiguous in its policy prescription in such cases. On the one hand there is the anti-competitive effect of greater concentration, at least arguably significant where the particular companies' market shares are approximately Coca-Cola 37.4 percent, Pepsi 28.9 percent, Dr. Pepper 4.6 percent, and 7-Up 5.7 percent.<sup>6</sup> If there are industries where mergers are to be feared because of market concentration, then the soft drink industry is certainly a strong candidate. On the other side of the ledger are the possible productive efficiency gains that might result from any new combination of resources, whether in manufacturing, advertising, distribution or elsewhere. The analysis is fine as far as it goes. Yet, a court, enforcement agency, or policy maker must not only be aware of the possible pro- and anti-competitive effects, it must also be able to *weigh* those effects and make a judgment about the overall virtue of the merger. Unfortunately, a comparison of the weight of these two countervailing effects is probably impossible. Whatever limited success there may be in measuring the social welfare loss from possible restrictions on output, the likelihood of getting acceptably accurate measures of the pro-competitive increases in productivity are minute.

Nonetheless, there appears to be a revealing bit of collateral evidence that has surfaced in the soft drink cases. It is well recognized by economists that, if these mergers are anti-competitive, in addition to any gain that will accrue to the participants, relatively larger gains will accrue to other firms in the industry. Similarly, the greatest loss that will result if the mergers are pro-competitive will be to other firms in the industry who will have to decrease prices and improve quality. Therefore, the attitudes held by those firms who have the most to gain and lose by the mergers can be very revealing. Royal Crown Cola Co. ("RC"), a competitor of the merging firms, petitioned the FTC to stop both mergers.<sup>7</sup> Thus, it is likely that the mergers would have

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5. *United States v. Marine Bancorp., Inc.*, 418 U.S. 602 (1974). The Court announced that it would give great importance to practical realities in determining whether the inference of probable anti-competitive effect from the government's *prima facie* case under § 7 of the Clayton Act was rebutted. *Id.* at 631.

6. *See* Federal Trade Comm'n v. Coca-Cola Co., 641 F. Supp. 1128, 1134 (D.D.C. 1986). Together, these four companies controlled 76.6% of the soft drink market in 1986. *Id.*

7. Under 15 U.S.C. § 45(b) (1982), the FTC is empowered to bring a proceeding against any person, partnership or corporation that uses unfair methods of competition in or affecting commerce. RC was able to intervene under the same section which goes on to state "[a]ny

been significantly pro-competitive. This Article examines the abandoned carbonated soft drink mergers of 1986 to illustrate and explore how the reactions of competing firms to mergers within their industry is indicative of either the pro-competitive or anti-competitive nature of these mergers.

### I. THE CARBONATED SOFT DRINK INDUSTRY

On January 24, 1986, Pepsi announced that it would purchase, for \$380 million, the soft drink operations of 7-Up from Philip Morris Incorporated. Four weeks later, on February 20, 1986, Coca-Cola announced that it would acquire Dr. Pepper for \$470 million.<sup>8</sup>

In early February, the FTC contacted Coca-Cola and advised it that it was conducting a non-public investigation of Pepsi's proposed acquisition of 7-Up. Coca-Cola expected that the scope of the investigation would be broadened to include its proposed acquisition of Dr. Pepper as soon as the FTC learned of it. Coca-Cola was hopeful that it would be able to persuade the FTC not to challenge the transaction or, in the event the FTC did challenge the acquisition, to defeat any injunction.<sup>9</sup>

On June 19, 1986, RC filed an antitrust suit in the United States District Court for the Middle District of Georgia, seeking to both preliminarily and permanently stop Coca-Cola from completing its proposed merger with Dr. Pepper, and Pepsi from going ahead with its plans to acquire 7-Up.<sup>10</sup> RC asserted that each of these acquisitions, if consummated, would substantially lessen competition in the soft drink industry in violation of the Clayton Act,<sup>11</sup> as well as constitute a violation of sections 1 and 2 of the Sherman

person, partnership, or corporation may make application, and upon good cause shown may be allowed by the Commission to intervene and appear in said proceeding by counsel or in person." *Id.*

8. Plaintiff's Memorandum of Law in Support of Its Motion for A Temporary Restraining Order at 4, Royal Crown Cola Co. v. Coca-Cola Co., Civ. 86-107-col (M. Dist. Ga. 1986) [hereinafter Plaintiff's Memo of Law].

9. Affidavit of Chester J. Evans at 3, Royal Crown Cola Co. v. Coca-Cola Co., Civ. 86-107-col (M. Dist. Ga. 1986). Chester J. Evans is the senior vice-president and chief financial officer of the Coca-Cola USA Division of the Coca-Cola Company.

10. Private actions for antitrust violations are brought under 15 U.S.C. § 15 (1982), which states:

Any person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws may sue therefore in any district court of the United States in the district in which the defendant resides or is found or has an agent, without respect to the amount in controversy, and shall recover threefold the damages by him sustained, and the cost of the suit, including a reasonable attorney's fee.

*Id.*

11. 15 U.S.C. § 18 (1982). The Clayton Act states in pertinent part that:

[n]o corporation . . . shall acquire . . . the whole or any part of the stock . . . of another corporation engaged also in commerce, where in any line of commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.

*Id.*

Act<sup>12</sup> by unreasonably restraining competition and monopolizing or attempting to monopolize certain segments of that industry.<sup>13</sup> Coca-Cola defended its planned acquisition as pro-competitive while Pepsi challenged the RC action as meritless.<sup>14</sup>

A hearing on the application for a temporary restraining order was held on June 20, 1986. The court issued a temporary restraining order to maintain the status quo pending a hearing, set for June 30, to determine whether an injunction should issue. That same day, June 20, the four members of the FTC voted unanimously to challenge both Pepsi's and Coca-Cola's acquisitions.<sup>15</sup>

The FTC based its objections to both of these mergers on the grounds that, if they were completed, the carbonated soft drink industry would become excessively concentrated and the Herfindahl-Hirschman Index ("HHI"), a measure of market concentration, would rise above approved limits.<sup>16</sup> There are 11 concentrate firms with at least a 1 percent market share who compete in the United States carbonated soft drink industry.<sup>17</sup> The HHI for the soft drink industry was 2,373 in 1986, and the four largest firms in the market had a combined market share in excess of 79 percent.<sup>18</sup> Under the merger guidelines employed by the Department of Justice ("DOJ"), any merger or acquisition that results in an HHI over 1,800 and that raises

12. 15 U.S.C. §§ 1, 2 (1982). Section 1 of the Sherman Act provides that:

[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal. Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding one million dollars if a corporation, or, if any other person, one hundred thousand dollars, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

*Id.* at § 1.

Section 2 allows for similar punishment of any person who monopolizes or attempts to monopolize any part of the trade or commerce among the States or with foreign nations. *Id.* at § 2.

13. RC argued that if the transactions were not enjoined, Pepsi and Coca-Cola would jointly control approximately 80% of the domestic market for carbonated soft drinks. As a result, smaller competitors would be driven out of business in the United States. Plaintiff's Memo of Law, *supra* note 8, at 12-27.

14. N.Y. Times, June 20, 1986, § IV, at 4, col. 5.

15. Transcript of Hearing for Temporary Restraining Order at 3, Royal Crown Cola Co. v. Coca-Cola Co., Civ. 86-107-col (M. Dist. Ga. June 25, 1986) [hereinafter TRO Transcript].

16. See *infra* notes 80-102 and accompanying text for a discussion of the DOJ Merger Guidelines and the use of the HHI in assessing horizontal mergers.

17. The market shares of the national concentrate manufacturers in 1985 were: Coca-Cola 38.6%, Pepsi 27.4%, Dr. Pepper 7.1%, 7-Up 6.3%, R. J. Reynolds (Canada Dry, Sunkist, Hawaiian Punch, Cott, No-Cal) 4.6%, RC 3.5%, Shasta 1.4%, Monarch 1.4%, Proctor & Gamble (Crush, Hires) 1.3%, Squirt 1.2%, and A&W 1.0%. Plaintiff's Amended Complaint at 9-10, Royal Crown Cola Co. v. Coca-Cola Co., Civ. 86-107-col (M. Dist. Ga. 1986).

18. Plaintiff's Verified Complaint at 14, Royal Crown Cola Co. v. Coca-Cola Co., Civ. 86-107-col (M. Dist. Ga. 1986).

the HHI by more than 100 points will be presumed likely to substantially lessen competition except in extraordinary cases.<sup>19</sup> If both the Coca-Cola and Pepsi acquisitions were consummated, combining the four largest concentrate manufacturers into two, the HHI would have increased by 893 points to 3,266, 345 points for the Pepsi merger and 548 points for the Coca-Cola merger.<sup>20</sup>

On June 23, Pepsi and 7-Up announced that they were terminating efforts to conclude the transaction. The following day the action against them was dismissed and the restraining order of June 20, 1986 was vacated.<sup>21</sup> On June 24, the FTC filed suit in the United States District Court for the District of Columbia, moving to preliminarily enjoin Coca-Cola from acquiring Dr. Pepper.<sup>22</sup> The FTC challenged the acquisition on two grounds. First, the FTC found that Dr. Pepper competed directly with Coca-Cola products (particularly Mr. Pibb, Coca-Cola's cherry flavored soda), and that such competition would be eliminated.<sup>23</sup> Second, and most important, the acquisition would increase concentration in the carbonated soft drink market and encourage tacit price collusion and other parallel policies of mutual advantage between Coca-Cola and Pepsi, thus resulting in a lessening of competition.<sup>24</sup>

Coca-Cola agreed to refrain from any efforts to close the transaction until the court ruled on the injunction. On June 25, 1986, the Georgia District Court converted the temporary restraining order maintaining the status quo in RC's civil action into a preliminary injunction.<sup>25</sup> On July 31, 1986, the District Court for the District of Columbia also granted a preliminary injunction blocking the Coca-Cola/Dr. Pepper merger. In granting the preliminary injunction blocking the acquisition of Dr. Pepper by Coca-Cola, the Federal District Court expressly rejected reliance on any economic theory.<sup>26</sup> On August 5, 1986, Coca-Cola abandoned its plans to acquire Dr.

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19. United States Department of Justice Merger Guidelines § 3.11 (1984) [hereinafter DOJ Merger Guidelines]. This section sets out the general standards for evaluating horizontal mergers. Subsection (c) applied in this case because the post-merger HHI was over 1800. In this situation the DOJ considered the industry to be highly concentrated and any additional concentration resulting from mergers a matter of "significant competitive concern." *Id.*

20. Plaintiff's Verified Complaint, *supra* note 18, at 14.

21. Stipulation and Order at 1, *Royal Crown Cola Co. v. Coca-Cola Co.*, Civ. 86-107-col (M. Dist. Ga. Aug. 25, 1986).

22. *Federal Trade Comm'n v. Coca-Cola Co.*, 641 F. Supp. 1128, 1129 (D.D.C. 1986).

23. *Id.* at 1131.

24. *Id.*

25. TRO Transcript, *supra* note 15, at 30.

26. The court concluded that it:

should not in any event, rely on the economic testimony in reaching a conclusion about the probable effects of the proposed acquisition given the concentrated nature of the market just outlined. Section 7 of the Clayton Act was not designed to support a particular economic theory; it was directed at what Congress in the exercise of its own common sense perceived.

*Coca-Cola Co.*, 641 F. Supp. at 1138. See also Prager, *How Much Is Enough? Antitrust Developments Affecting Mergers and Acquisitions*, 56 ANTITRUST L.J. 303, 317-21 (1987)

Pepper. Several days later, the RC civil action against Coca-Cola in the United States District Court for the Middle District of Georgia was dismissed and the preliminary injunction issued on June 25 was vacated.

Had these challenged mergers been the subject of a full scale trial, a paramount issue would have been whether the possible or probable anti-competitive effects of the merger would have been greater than countervailing pro-competitive effects.<sup>27</sup> Unfortunately for Coca-Cola and Pepsi, the current judicial process for operationally measuring the anti-competitive effects of a proposed merger is, at best, highly imperfect. In addition, there is no way to demonstrate analytically or measure operationally any anticipated pro-competitive effects.<sup>28</sup> Before attempting to determine the competitiveness of these particular mergers, let us examine the economic theory and legal doctrine of mergers.

## II. THE ECONOMICS OF HORIZONTAL MERGER

Antitrust laws have been employed to attack a variety of business activities which are believed to adversely affect competition. Horizontal mergers lie near the middle on a continuum of these activities in terms of their effect on social wealth. They are neither definitively anti-competitive nor pro-competitive.

Firm activities such as cartelization stand at one end of the continuum. A cartel is formed when firms in a particular industry band together with the express desire to limit output and increase prices and industry profits.<sup>29</sup> Cartelization, if successful, will necessarily lead to higher prices, and lower output levels in the industry.<sup>30</sup> Virtually all cartels decrease social wealth and for that reason are considered socially undesirable. Under our laws, after some uncertainty in the early part of the century, cartelization has been determined to be unlawful *per se*.<sup>31</sup>

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(reviewing recent horizontal merger decisions, author has concluded that while some courts use economic analysis in reviewing mergers, the "populist brand" of merger analysis is still alive).

27. See *infra* notes 60-79 and accompanying text (discussing the case law of antitrust as applied to horizontal mergers); *United States v. General Dynamics Corp.*, 415 U.S. 486, 497 (1974).

28. See *Coca-Cola Co.*, 641 F. Supp. at 1141. The court cautioned against using any economic theory such as wealth maximization or efficiency-through-acquisition because they were untried.

29. See R. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 39-40 (1976).

30. R. POSNER & F. EASTERBROOK, *ANTITRUST CASES, ECONOMIC NOTES AND OTHER MATERIALS* 96 (2d ed. 1981). To maintain a successful cartel the members must agree to a set output and a set price. *Id.*

31. See *United States v. Trans-Missouri Freight Ass'n*, 166 U.S. 290, 340-41 (1897) (holding that agreements among railroads to control freight rates worked to restrain trade, even in the absence of proof that the purpose of the agreement was to raise rates above a "reasonable" level). *But see United States v. Joint-Traffic Ass'n*, 171 U.S. 505, 568 (1898) (one year later the Court noted that certain collateral restraints of trade to otherwise valid contracts are legal under § 1 of the Sherman Act).

However, while cartelization has been deemed unequivocally illegal, not all restraints on trade have been held necessarily illegal throughout the existence of the antitrust laws. For example, in *United States v. Addyston Pipe & Steel Co.*,<sup>32</sup> a cartel case, Judge Taft declared that all contracts restraining competition between competitors or potential competitors were illegal at common law, except those restraints that were reasonable in extent, necessary to protect the parties, and merely ancillary to the main purpose of a lawful contract.<sup>33</sup> Such an ancillary restraint of trade would be part and parcel of a business practice whose purpose is to take advantage of economies of scale and scope, or diminished transaction costs. Such a practice would result in lower costs and would, therefore, add to social wealth.

If cartels as anti-competitive activities which clearly decrease social wealth are on one end of the continuum, on the other end of the spectrum is an amalgam of alleged anti-competitive activities such as "tie-in" arrangements,<sup>34</sup> "resale price maintenance" ("rpm")<sup>35</sup> and "basing point pricing,"<sup>36</sup> which embody the principle of ancillary restraints. Modern economic theory reveals that these practices, in general, increase social wealth. Nonetheless, such market activities are generally held to be illegal because it is thought that they substantially lessen competition.

The standard argument against tie-in arrangements, rpms and basing point pricing is that they may be used as a device for extending market power which would ultimately lead to higher prices, less efficient operation of the competitive mechanism and excessive use of resources. However, the view of market activity and market power that underlies the antipathy to these firm practices is, at best, incomplete and distorted.

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32. 85 F. 271 (6th Cir. 1898) (defendants were manufacturers of cast iron pipe who had created an association to territorially divide major buyers in their market).

33. *Id.* at 282-83. Some covenants that will generally be upheld are: (1) non-competition clauses in the sale of a business; (2) restrictive covenants for retiring partners in a firm; and, (3) non-competition clauses in employment contracts. *Id.*

34. Tie-in arrangements relate to the practice of tying the sale of one or more goods to the sale of another product. Under such an agreement, the seller refuses to sell one product to a customer unless the customer also agrees to buy another product from the seller. Generally, one of the products is highly desirable, and the seller requires the buyer to purchase a less desirable product as well. *See, e.g., United States v. Loew's Inc.*, 371 U.S. 38 (1962) (sales of copyrighted films were tied to purchase of inferior films); *International Salt Co. v. United States*, 332 U.S. 392 (1947) (sales of patented salt machines were tied to the purchase of salt).

35. Resale price maintenance refers to an agreement between the buyer and seller of goods. The seller contractually sets the price at which his buyer can resell the product. *See, e.g., Kiefer-Stewart Co. v. Joseph E. Seagram & Sons, Inc.*, 340 U.S. 211 (1951) (agreement setting maximum resale price); *Dr. Miles Medical Co. v. John D. Park & Sons Co.*, 220 U.S. 373 (1911) (agreement setting minimum resale price).

36. Basing-point pricing is a system under which sellers, in quoting a delivered price to the buyer, compute the transportation cost from a standard point. Every seller will use the same point of origin in calculating freight charges to be added to the base price. *See, e.g., Federal Trade Comm'n v. Cement Institute*, 333 U.S. 683 (1948) (agreement among competitors to use multiple basing-point pricing system).



There are a number of reasons for firms to employ each of these suspect devices. Firms may engage in tie-in arrangements because of the cost savings that may be associated with the tie. Tie-ins may enable the seller to decrease its advertising, sale and delivery costs. The cost reduction could result in higher profits to the seller and/or a lower combined price to the buyer.<sup>37</sup> In either case it would represent an increase in social wealth. Similarly, in certain circumstances, such as in the sale of technical goods, resale price maintenance may be justified to prevent discount stores from being able to get a free-ride on pre-sales service provided by specialty shops.<sup>38</sup>

Rather than being anti-competitive, basing-point pricing can only be rationally explained as a reflection of the firms' non-collusive decisions in seeking to maximize profits.<sup>39</sup> A producer that locates a plant away from the major production site reduces the transportation necessary to reach some buyers, but it also raises average production costs.<sup>40</sup> The remote producer's profit maximizing price strategy is to match the price of his more favorably located competitors including their transportation costs. This strategy appears bizarre at first blush because it entails charging more to these customers who are nearer than to some of those who are further away from his plant.<sup>41</sup>

Unlike cartels, tie-ins, resale price maintenance, and basing-point pricing, horizontal mergers are immune to economic theory. Even after careful analysis, their effect on social wealth remains ambiguous. This is because economic theory reveals two very plausible generic motivations for horizontal merger. The first motivation, economy of scale and scope, is pro-competitive. The other motivation, increased market power, is anti-competitive.

Mergers may have the effect of increasing the merged firm's market power, enabling the firm to raise prices above the pre-merger level, in a manner essentially identical to a cartel. Alternatively, mergers may have the effect of lowering the merged firm's cost of production, enabling the firm to offer a higher quality and quantity of product at a lower price, or, it is conceivable that they may do both. When a merger could potentially produce a combination of the two effects, which is most often the case, the appropriate policy prescription can not be determined through theoretical analysis. The only way to answer the question would be empirically, that is to measure and compare the social costs and benefits of the merger.<sup>42</sup> Such a course will, however, generally be a highly unreliable process.

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37. Other reasons for tie-ins are to protect goodwill by preventing cheating on brand names or to reallocate risk bearing. *But see* *Standard Oil Co. v. United States*, 337 U.S. 293, 306 (1948), where the Court stated that: "The only situation . . . in which the protection of goodwill may necessitate the use of tying clauses is where specifications for a substitute would be so detailed that they could not practicably be supplied."

38. This reflects the difficulty in extracting payment for information. *See* R. POSNER & F. EASTERBROOK, *supra* note 30, at 213-14.

39. *See* Haddock, *Basing-Point Pricing: Competitive v. Collusive Theories*, 72 AM. ECON. REV. 289, 296-98 (1982).

40. *Id.* at 304.

41. *Id.*

42. R. CLARKE, *INDUSTRIAL ECONOMICS* 264 (1985).

To illustrate the possible effects of a merger we will utilize some simple economic models. In perfect competition, the market is characterized by a large number of firms each producing an identical product.<sup>43</sup> None of the firms is large relative to the market as a whole. Hence, each firm in a perfectly competitive market faces a horizontal demand curve.<sup>44</sup> Each individual firm will sell its output at the market price, over which it has no control, and produce output at the point where price equals marginal cost.<sup>45</sup> The competitive price is set by the interaction of the industry supply curve which is the summation of the individual firm's supply curves and the industry's demand curve.<sup>46</sup> Market equilibrium<sup>47</sup> occurs at the point where the supply curve intersects the demand curve (see figure 1, point E).

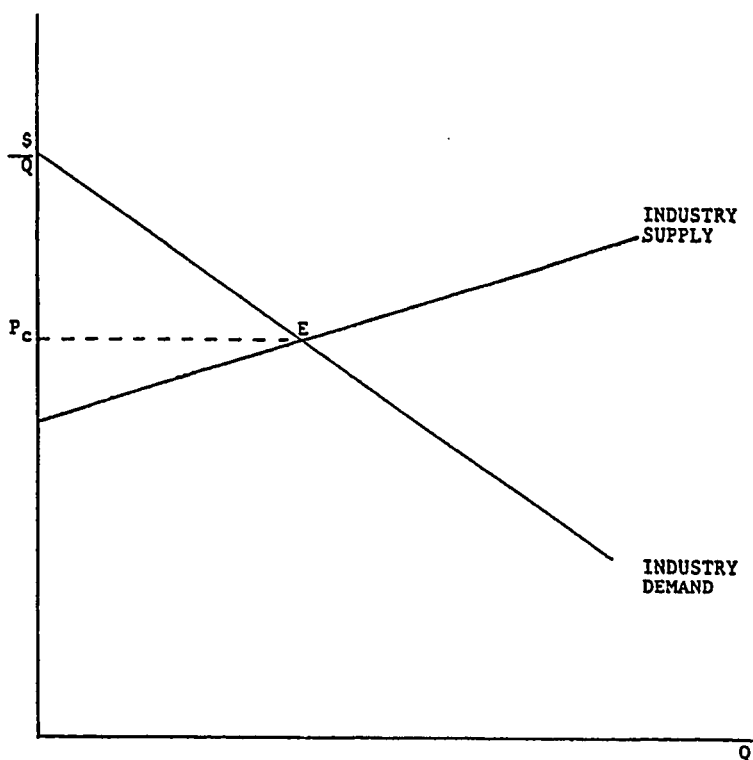


FIGURE 1

For example, farmers producing wheat sell such similar goods that any

43. J. HIRSHLEIFER, *PRICE THEORY AND APPLICATIONS* 288-320 (2d ed. 1980).

44. W. NICHOLSON, *INTERMEDIATE MICROECONOMICS* 321-22 (3d ed. 1983).

45. *Id.*

46. J. HIRSHLEIFER, *supra* note 43, at 190-227.

47. *Id.* at 234-35. Market equilibrium exists when there is perfect competition, i.e., perfect communication between buyer and seller, instantaneous equilibrium in the market and costless transactions. *Id.*

slight difference in price asked by sellers will induce buyers to switch to the seller whose price is lowest. Any seller that raises his price above the market price, even slightly, will lose all his sales. However, it follows that the seller will not accept a lower than market price because he can sell all he cares to produce at the market price.

In a perfectly competitive market, the firm's marginal revenue is the same as its average revenue and is depicted by the demand curve for the firm's output.<sup>48</sup> Marginal revenue is the change in total revenue due to an increase in sales of one unit.<sup>49</sup> The firm will produce where its marginal cost curve intersects its demand curve (figure 2, point E), and it will produce at output level  $Q_c$ .

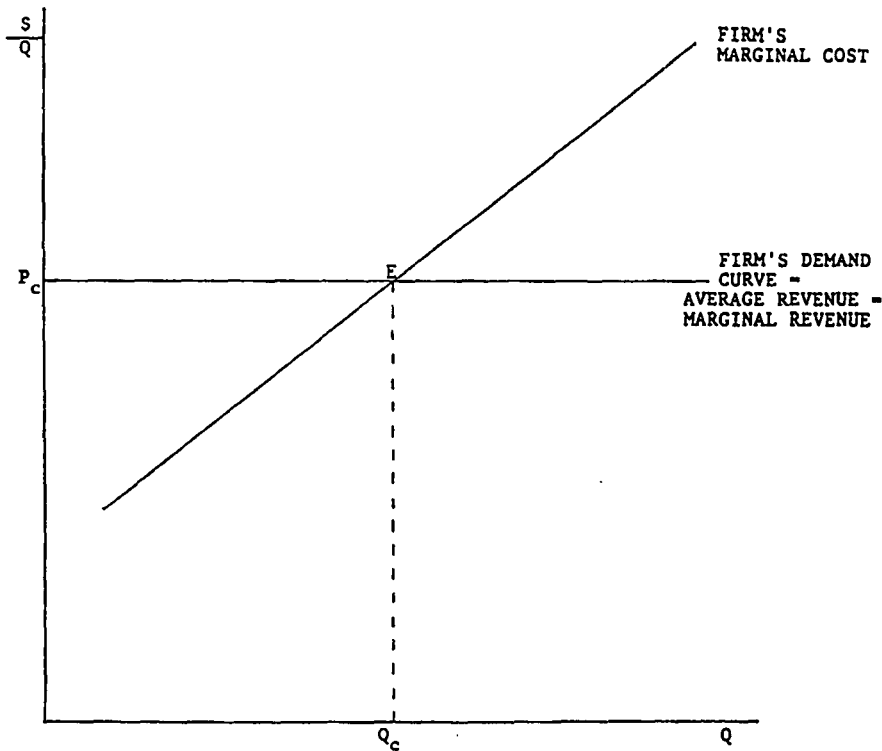


FIGURE 2

In contrast, a monopoly market involves only a single supplier.<sup>50</sup> This single firm faces the entire market demand. It has relative freedom in its pricing policies in the sense that the monopolist faces a downward sloping demand curve. The more downward sloping the demand curve (or more

48. *Id.* at 44-55, 269-70. The demand curve shows price as a function of quantity.

49. Expressed geometrically, the marginal revenue is the slope of the total revenue curve. *Id.* at 44-51, 269-70.

50. *Id.* at 332.

precisely, the more inelastic the demand curve around the intersection of the demand curve and the marginal cost curve) the more monopoly, or market power, the firm has. When the monopolist raises its price to  $P_m$  (see figure 3) his output will not drop to zero; instead it will decrease from  $Q_c$  to  $Q_m$ .

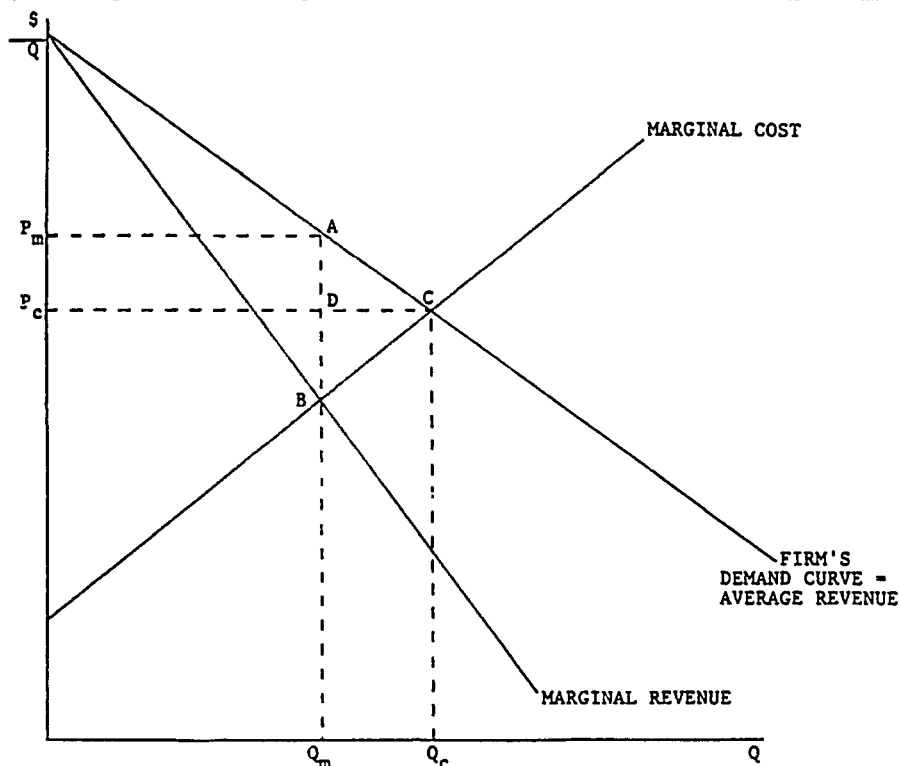


FIGURE 3

The monopolist will suffer a decrease in profits from his increasing price (due to the loss of some customers, this is represented by area BCD) and will weigh this against his increase in profits (due to the higher price charged to his remaining customers, represented by area  $AP_mP_cD$ ). His net gain from charging a monopoly price rather than the price that would have prevailed, *ceteris paribus*, had the industry been characterized by perfect competition, equals the difference between areas  $AP_mP_cD$  and BCD.

The price the monopolist will charge and the quantity it will produce will be determined by the point on the demand curve above the point at which marginal revenue intersects marginal cost.<sup>51</sup> In terms of efficiency, the mere existence of profits for monopolies is not enough to justify their elimination or regulation. Gains to entrepreneurs frequently entail pecuniary losses to others.

51. *Id.* at 361.

As illustrated in figure 3, however, there is a deadweight loss to society associated with monopoly pricing (area ABC). If the industry were competitive the price would be  $P_c$ . When prices rise to  $P_m$ , consumers lose the area  $ACP_cP_m$  which would have been consumer surplus. The area  $ADP_cP_m$  goes to the producer, so the net loss to society of consumer surplus is ADC. In addition, as stated above, producers in a competitive market would have earned BCD as producer surplus, but when the price rose to  $P_m$  this area was lost. Thus the total inefficiency loss due to the monopoly is ADC plus BCD which equals the area ABC.

Now let us assume that a merger has taken place in a competitive market. There are several possible effects of such a merger. First, the merger could, by increasing the firm's market power, enable the merged firms to behave as a monopolist. The merged entity would be free to raise prices by restricting quantity to the point at which marginal cost equals marginal revenue.

Monopoly profits can also be created by the formation of a cartel or by collusion among an industry's members. Each firm in the cartel agrees to produce less than it would under the dictates of perfect competition. The overall effect of the collusion is to drive up prices so that all in the group will benefit (a cartel can only drive up the price by cutting back production). The negative effects of such a merger are the same as in the monopoly model.

Second, the merger could give rise to cost savings from economics of scale or scope or both. For example, assume that in our perfect competition model above, the industry consisted of 150,000 independent wheat farmers of approximately equal size. What would be a plausible explanation if 75,000 were bought out by or merged with a neighboring wheat farmer? Such a merger clearly could not create monopoly power. Seventy five thousand farms is still far more than necessary to ensure a competitive market, so the reason for the mergers must lie elsewhere. The obvious explanation is that they merged in order to take advantage of lower costs of production that could arise out of economics of scale.

Initially the market is in equilibrium at  $P_0, Q_0$  (see figure 4). After the mergers, with new lower cost producing farms, the market equilibrium is re-established at  $P_1, Q_1$ . The new firms are producing a larger quantity of wheat at a lower price. This type of merger has the effect of increasing social wealth.

Third, the merger could give rise to both cost savings and monopoly power. The merged firms could act as a monopolist and set output where marginal revenue equals marginal cost. However, as can be seen in figure 5, the post-merger prices may remain the same or move below the pre-merger level. If this were the case, the consumers are made no worse off, and the producers would gain a great deal. Such a merger would be social wealth increasing.

Finally, the merger could give rise to economies of scale represented by the lowering of the average cost curve, which would in and of itself result in an increase in quantity and a decrease in price. However, because the

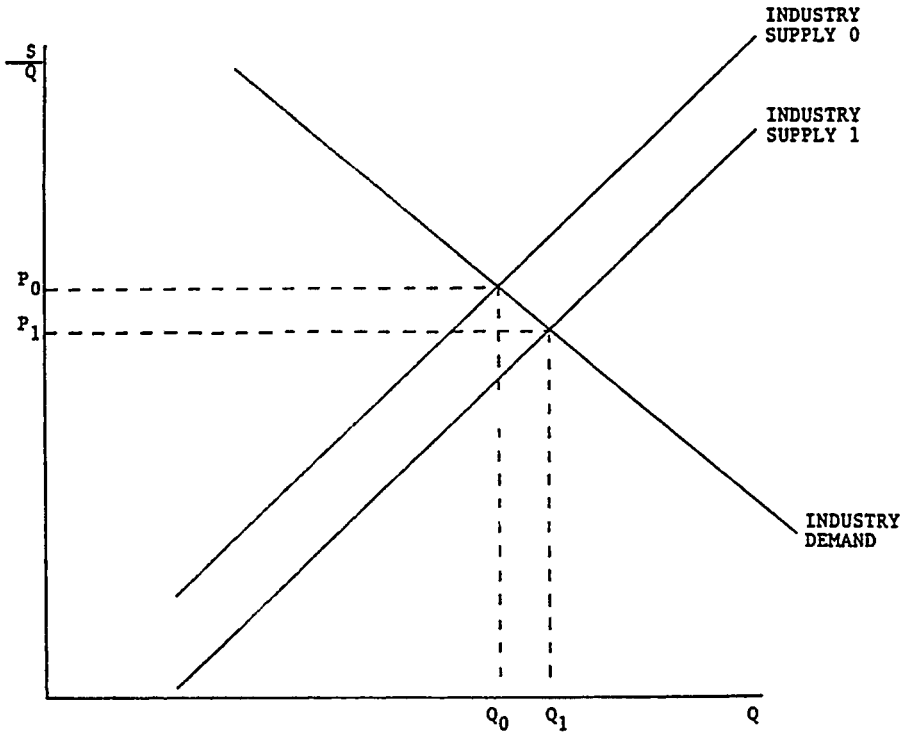


FIGURE 4

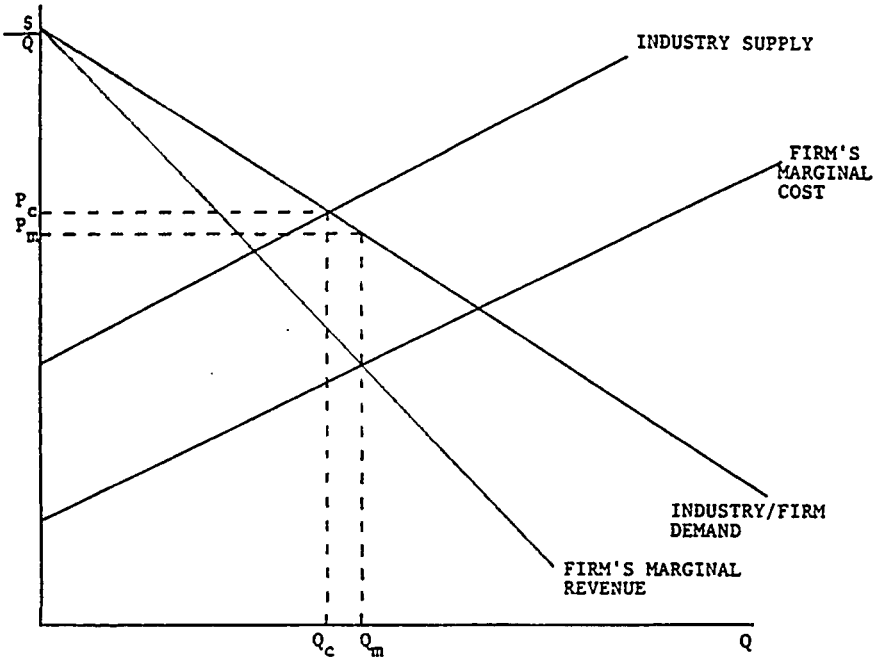


FIGURE 5

merger also gives the firm some monopoly power, the post-merger price is higher than the pre-merger level (figure 6). The effect of the merger on social wealth is ambiguous. If there is only a small decrease in output, the deadweight loss represented by triangle ABC may be smaller than the benefits gained from economies of scale shown by the rectangle BDEF. The net effect of the merger depicted in the diagram appears to be social wealth increasing.

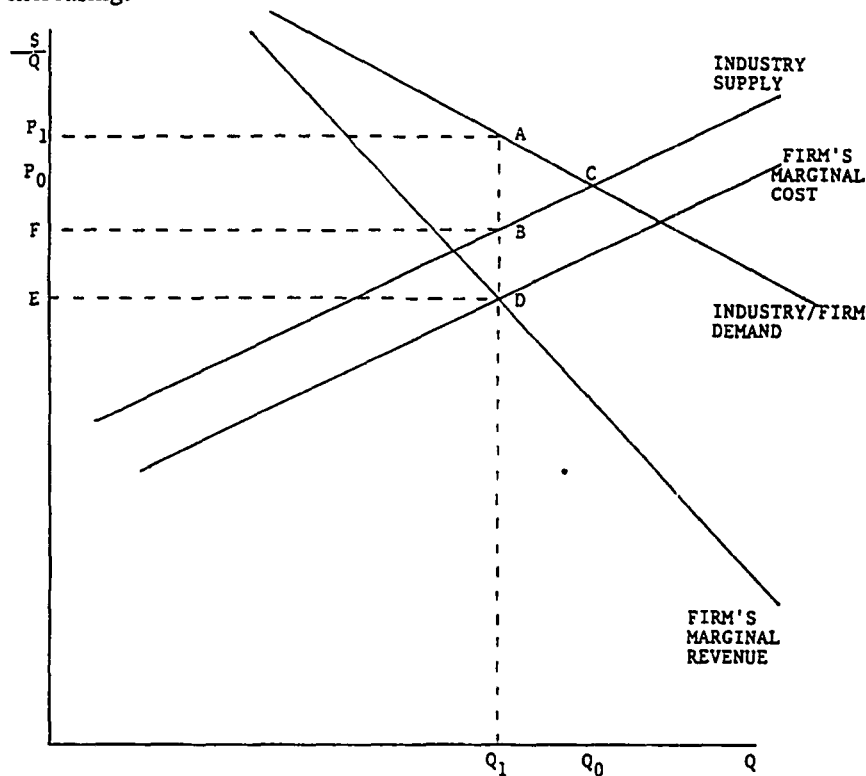


FIGURE 6

Thus, the issue with regard to any specific proposed merger is whether horizontal integration will: (1) permit the firm to lower quantity and increase price; or, (2) permit the firm to reduce costs through economies of scale or scope, or do both. And if the merger does both, determining which of the two effects will be greater is an easy question to ask and an all but impossible one to answer. Considering the difficulty courts have had in determining the costs and benefits of cartels, tie-ins, rpm and basing-point pricing—all areas in which there is strong agreement among economists—it is hardly surprising that courts have been at sea in their attempts to analyze horizontal mergers.

### III. THE LAW OF HORIZONTAL MERGERS

Section 1 of the Sherman Act states: "Every contract, combination in the form of trusts or otherwise, or conspiracy, in the restraint of trade of

commerce among the several States, or with a foreign nation, is hereby declared to be illegal."<sup>52</sup>

The Sherman Act is the foundation of antitrust law. The literal statute does not employ the lexicon of economic theory. Economic theory is necessary, however, to give meaning to an otherwise incomprehensible law. The law cannot be given its literal meaning because, as the courts have long recognized, every contract restricts trade, but it is inconceivable that the intent of the Sherman Act is to outlaw all contractual agreements.<sup>53</sup>

The first problem that arises in adjudicating antitrust cases is determining the goals of antitrust law. The broadness of the statutory language creates difficulties for the courts in developing legal policies toward industry and firm practice. Robert Bork and other scholars argue that the goal of antitrust law is to promote consumer welfare or economic efficiency.<sup>54</sup> Bork argues that consumer welfare is a "common denominator" by which gains in destruction of monopoly power can be weighed against losses in productive efficiency and that economic theory can provide the means of assessing the direction as well as the relative size of the potential gains and losses.<sup>55</sup>

Bork and those who would use economic efficiency as their touchstone for judging putatively anti-competitive practices are not without intellectual opponents. The other side of the academic debate includes those, such as Dean Pitofsky, who argue that, in addition to the objective of economic efficiency, Congress designed the antitrust laws to advance political and other non-economic objectives.<sup>56</sup> Despite the arguable merit of this assertion, Bork argues, and we agree, that neither case law, legislative history, nor scholarly work provides an adequate guide for operationalizing such non-economic objectives. The substance of this policy conflict is that if courts were required to trade off political goals against economic goals in their decisions, they would be compelled to prohibit firms from offering lower prices to consumers.

In many of the most recent antitrust cases, the United States Supreme Court has employed language that indicates an adoption, albeit imperfect, of the economic or social wealth maximizing, approach to antitrust law. In

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52. 15 U.S.C. § 1 (1982).

53. See, e.g., *United States v. Addyston Pipe & Steel Co.*, 85 F. 271 (6th Cir. 1898) (rejecting notion that *all* contracts that restrain trade or commerce are illegal). See *supra* note 32.

54. R. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 79 (1979). Bork employs the term consumer welfare but appears to intend the economist's concept of social wealth. See also P. AREEDA & D. TURNER, *ANTITRUST LAW* 7-31 (1978); R. POSNER, *supra* note 29, at 8-22.

55. R. BORK, *supra* note 54, at 79.

56. Dean Pitofsky argues that Congress was not concerned only with allocative efficiency or economic considerations in 1890, 1914 or 1950 when the antitrust laws were passed. Pitofsky, *Luncheon Panel Discussion: Has Economics Rationalized Antitrust?*, 52 *ANTITRUST L.J.* 607, 613 (1983). See also Fox, *The Modernization of Antitrust: A New Equilibrium*, 66 *CORNELL L. REV.* 1140 (1981).



*Reiter v. Sonotone Corp.*,<sup>57</sup> for example, the Court unanimously reached the conclusion that consumers who pay higher prices for goods as a result of antitrust violations are injured in their property within the meaning of section 4 of the Clayton Act. In so ruling, the Court said, "Congress designed the Sherman Act as a consumer welfare prescription."<sup>58</sup>

Further, both the FTC and the DOJ Antitrust Division have unequivocally adopted the economic approach. In 1980, the FTC decided to drop its 1978 complaint against DuPont in which that company was charged with attempting to monopolize the titanium dioxide industry. The FTC reasoned that "the essence of the competitive process is to induce firms to become more efficient and to pass the benefits of the efficiency along to the consumer."<sup>59</sup>

For the purposes of this Article we will assume that the goal of the antitrust laws is to promote economic efficiency. In so doing, we do little more than narrow the question to one that can be meaningfully discussed, not necessarily one that can be satisfactorily answered. We are still left with the monumental problem of determining whether or not a particular merger will promote economic efficiency.

#### A. Merger Case Law

The law governing horizontal mergers is in a state of flux. Leading, but fairly outmoded, Supreme Court decisions have turned on the increase in concentration within an industry, even if trivial. Accordingly, the Court has been extremely hostile to all mergers.<sup>60</sup> Under this theory, the primary focus for predicting whether a merger will be anti-competitive has been the market share held by the merging firms.<sup>61</sup> The first step in this process is to define the market in which the merged firm competes.<sup>62</sup> Once the relevant market

57. 442 U.S. 330 (1979).

58. *Id.* at 334-43. On the other hand in *Jefferson County Pharmaceutical Ass'n, Inc. v. Abbott Laboratories*, 460 U.S. 150 (1983), the Court recognized congressional intent to protect small business from price discrimination in favor of larger firms.

59. Wall St. J., Nov. 10, 1980.

60. *See Brown Shoe Co., Inc. v. United States*, 370 U.S. 294 (1962). The Supreme Court noted that Congress intended for the amended § 7 of the Clayton Act to be used to prevent concentration of economic power through merger. Here, the Court found that a 5% market share in several cities violated antitrust laws. Since this decision few litigated horizontal mergers have been held valid. *See also Northern Pacific Ry. v. United States*, 356 U.S. 1 (1958); *United States v. Aluminum Co. of Am.*, 148 F.2d 416 (2d Cir. 1945).

61. *Brown Shoe*, 370 U.S. at 322 n.8 ("[s]tatistics reflecting the shares of the market controlled by the industry leaders and the parties to the merger are, of course, the primary index of market power . . .").

62. *See Federal Trade Comm'n v. Coca-Cola Co.*, 641 F. Supp. 1128, 1132 (D.D.C. 1986). The court found it necessary to define the market where the merger participants competed at the outset of the merger analysis, saying:

[p]roper market analysis directs attention to the nature of the products that the acquirer and the acquired company principally sell, the channels of distribution they primarily use, the outlets they employ to distribute their products to the ultimate consumer, and the geographic areas they mutually serve. Factors affecting price and interchangeability of products must be considered.

*Id.*

has been defined, the plaintiff establishes a prima facie case by showing that the proposed merger will increase the merged entity's market share percentage beyond acceptable limits.<sup>63</sup> Unless there is evidence to rebut the prima facie showing, the merger will almost always be held illegal.<sup>64</sup>

For example, in *United States v. Philadelphia Nat'l Bank*,<sup>65</sup> the Supreme Court held that where a horizontal merger leads to a "significant increase in the concentration of firms" within a market and provides the merged entity with "an undue percentage share," it is "presume[d] illegal."<sup>66</sup> This rule was further expanded in *United States v. Aluminum Co. of Am.*,<sup>67</sup> where the Court held that "even slight increases in concentration" are presumptively illegal if concentration in that market is already great.<sup>68</sup>

The Court reaffirmed the presumption of illegality in *United States v. Pabst Brewing*,<sup>69</sup> where the government alleged that the acquisition of the nation's eighteenth largest brewer by the tenth largest brewer violated section 7 of the Clayton Act because it accelerated concentration already occurring in the beer industry.<sup>70</sup> The complaint charged that "the effect of this acquisition may be substantially to lessen competition or to tend to create a monopoly in the production and sale of beer in the United States and in various sections thereof. . . ."<sup>71</sup>

Not until *United States v. General Dynamics Corp.*,<sup>72</sup> did the Court sanction a particular method for rebutting a prima facie showing of anti-competitive effect.<sup>73</sup> Under this approach, a more in-depth evaluation of a

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63. See *United States v. Philadelphia Nat'l Bank*, 374 U.S. 321 (1963) (increased percentages in market share raise inference that the effect of a contemplated merger may be to substantially lessen competition).

64. See *United States v. General Dynamics Corp.*, 415 U.S. 486 (1974) (evidence which examined structure, history and probable future of the coal industry outweighed a prima facie case based on an increase in market share).

65. 374 U.S. 321 (1963).

66. *Id.* at 362-67.

67. 377 U.S. 271 (1963).

68. *Id.* at 278-81. The Court found that a merger which would increase the market share of the merged entity by only 1.3% still had a probable anti-competitive effect on the particular industry involved.

69. 384 U.S. 546 (1966).

70. *Id.* at 547-51.

71. *Id.* at 547-48. The Supreme Court held that the merger, which produced an entity with only a 4.49% share of the U.S. market, was illegal because the merged entity held an undue percentage share of the relevant market. *Id.* at 550-52. The trend in the beer industry was toward fewer competitors and greater concentration among larger firms. Therefore, the Court felt that the merger between Pabst and Blatz, even though they were relatively small, would be an acceleration of that concentration.

72. 415 U.S. 486 (1974).

73. *Id.* at 494-504. The Court said that notwithstanding the statistical showing, which was sufficient to call forth the presumption of illegality established by *Philadelphia Nat'l Bank*, "a further examination of the particular market, its structure, its history, and probable future is appropriate." *Id.* at 498 (quoting *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294, 322 (1962)).

particular market is encouraged. Thus, any statistical case may be overcome by evidence that the market share and concentration statistics misstate the true competitive conditions within an industry.<sup>74</sup>

In contrast to the weight of Supreme Court precedent, current government enforcement guidelines and more recent lower court decisions manifest a more tolerant view of concentration levels. Since *General Dynamics*, the lower courts have been willing to consider evidence other than market structure statistics in evaluating the effects horizontal mergers may have on competition.<sup>75</sup> Recently, the Second Circuit indicated that barriers to entry and ease of entry are important factors to consider in merger analysis. In *United States v. Waste Management, Inc.*,<sup>76</sup> the DOJ sought to enjoin a merger that gave the merging firms a 48.8 percent share of the containerized waste-hauling market. In approving the merger, the court ruled that the higher market share currently held by the defendant did not reflect its future market power and that the defendant would be unable to increase its price above a competitive level.<sup>77</sup>

Other federal circuit courts of appeal have reacted favorably to evidence that a merger would produce a stronger, more efficient competitor. In *United States v. International Harvester Co.*,<sup>78</sup> for example, the government challenged Harvester's acquisition of a stock interest in Steiger Tractor, Inc. The court held that any inference of anti-competitive effect created by the market share figures was rebutted by evidence that Steiger was unable to obtain sufficient capital to remain an effective competitor except through the arrangement with Harvester.<sup>79</sup>

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74. *Id.* at 498. The merger was construed as having no substantial probability of anticompetitive effect.

75. C. HILLS, *ANTITRUST ADVISOR* 186 (3d ed. 1985). These additional factors include ease of entry, weakness of the company being acquired, pro-competitive consequences of the merger, and the failing company defense. *Id.* at 186-90.

See, e.g., *Citizen Publishing Co. v. United States*, 394 U.S. 131 (1969) (otherwise objectionable merger justified where acquired company was near failing, and where acquired company had been unsuccessful in locating other merger partners); *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294, 322 (1962) (courts should take into account the whether the industry "had experienced easy access"); *United States v. Waste Management, Inc.*, 743 F.2d 976, 982-84 (2d Cir. 1984) (ease of entry into market constrains price increases (citing 1984 DOJ Merger Guidelines, 46 Antitrust & Trade Reg. Rep. (BNA) No. 1169 Spec. Supp. § 3.3 at S-6)); *Federal Trade Comm'n v. National Tea Co.*, 603 F.2d 694 (8th Cir. 1979) (where acquiror was a weak competitor, and the market was a competitive one, preliminary injunction of merger denied); *United States v. International Harvester Co.*, 564 F.2d 769 (7th Cir. 1977) (upholding judgement for acquiror-defendants based on finding that merger would have pro-competitive effect).

76. 743 F.2d 976 (2d Cir. 1984).

77. *Id.* at 983-84. The court found future market power insubstantial due to the ease of entry into the relevant product and geographic market. It further found that any anti-competitive impact of the merger would be eliminated more quickly by competition than by litigation. *Id.*

78. 564 F.2d 769 (7th Cir. 1977).

79. *Id.* at 777-80. Harvester produced 28% and Steiger 5% of high-powered farm tractors. The four largest sellers at the time accounted for 83% of total sales. The court found that competition in the high-powered tractor industry had intensified since Harvester's acquisition of Steiger and that the new entity had become a stronger competitor in that industry. *Id.*

*B. Enforcement Agency Guidelines*

The Department of Justice Merger Guidelines are designed to inform businesses and the bar as to when the DOJ is likely to challenge mergers.<sup>80</sup> The unifying theme of the Guidelines is to prevent mergers that would enhance or create market power.<sup>81</sup> The DOJ's first step in analyzing any action brought under section 7 of the Clayton Act is to determine the relevant product market with respect to each product of the merging firms.<sup>82</sup> Under the 1984 guidelines, if consumers could switch or substitute alternative products in response to a "small but significant and non-transitory" increase in price, the DOJ will add to the product market definition those products to which consumers could switch.<sup>83</sup> The DOJ's second step in analyzing an action brought under section 7 of the Clayton Act is to determine the relevant geographic market. This is accomplished by ascertaining whether consumers can respond to a "small but significant and non-transitory" increase in price in one area by shifting to firms located outside the area.<sup>84</sup> If the consumer can, then those areas should be included in the relevant geographic market.<sup>85</sup>

The Federal Trade Commission is responsible for investigating and prosecuting "unfair methods of competition . . . and unfair or deceptive acts or practices in or affecting commerce."<sup>86</sup> The FTC has concurrent authority with the Department of Justice Antitrust Division and private plaintiffs to enforce section 7 of the Clayton Act.<sup>87</sup>

In June, 1982, the FTC issued a "Statement Concerning Horizontal Mergers."<sup>88</sup> The FTC Statement emphasizes general principles, thus making it difficult to apply to concrete fact situations. However, in the opening comment it states that the FTC will give "considerable weight" to the DOJ Guidelines.

The FTC follows an approach much like that of the DOJ in defining product and geographic markets to analyze mergers. The FTC merger state-

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80. DOJ Merger Guidelines, *supra* note 19, at § 1. Section 1 states that "[t]he Guidelines are designed primarily to indicate when the Department is likely to challenge mergers, not how it will conduct the litigation of cases that it decides to bring." *Id.* The Guidelines include relevant standards used by the DOJ in evaluating mergers and definitions of pertinent terms.

81. *Id.* Section 1 also points out that the DOJ seeks to avoid unnecessary interference with the majority of mergers which are either competitively beneficial or neutral.

82. *Id.* at § 2.11. Section 7 of the Clayton Act, 15 U.S.C. § 18, relates to the acquisition of the stock of one company by another company. *See supra* note 11.

83. DOJ Merger Guidelines, *supra* note 19, at § 2.11.

84. *Id.* at § 2.31.

85. *Id.*

86. 15 U.S.C. § 45(a)(2) (1982).

87. 15 U.S.C. § 18 (1982). The FTC also has concurrent jurisdiction with the DOJ and private plaintiffs to enforce sections 2, 3 & 8 of the Clayton Act, codified as 15 U.S.C. §§ 13, 14, 19 (1982). 15 U.S.C. § 45(a)(2) (1982).

88. Statement of Federal Trade Commission Concerning Horizontal Mergers (1982) [hereinafter FTC Merger Statement].

ment indicates that: (1) "Where cross-elasticity of demand for separate products or services is high, they normally will be in the same product market. Similarly, a high cross-elasticity of supply tends to suggest the existence of a common product market";<sup>89</sup> and, (2) "As a general proposition, an area is a separate geographic market if a change in the price of the product in that area does not, within a relevant period to time, induce substantial changes in the quantity of product sold in other areas."<sup>90</sup>

Once the product and geographic markets are defined, the DOJ and FTC approach merger analysis in a manner similar to that enunciated in *Brown Shoe Co., Inc. v. United States*,<sup>91</sup> albeit with thresholds of anti-competitiveness far higher than that of the Supreme Court. In addition, the Guidelines look to the reason why market concentration may be economically undesirable, instead of focusing exclusively on the statistics of concentration.

The Guidelines suggest that the DOJ will challenge all mergers that would create or facilitate the exercise of market power.<sup>92</sup> They look primarily to concentration as a barometer of the potential for lowering quantity and raising prices above the competitive level, and mention, only in passing, increased efficiencies or other pro-competitive effects of mergers.<sup>93</sup> In order to determine whether market power has been created, the DOJ uses the HHI to aid in its interpretation of market data. The index is defined as the sum of squares of the sizes of firms in an industry where size is the percentage of total assets or sales etc.<sup>94</sup> The HHI for a given market is calculated by squaring the percentage market share of each firm in the market and adding the resulting figures.<sup>95</sup>

In evaluating horizontal mergers, the DOJ will consider both post-merger market concentration and the increase in concentration resulting from the

89. *Id.* § VI(A) (1982).

Cross-elasticity of demand is defined as equal to the percentage change in the amount of good x demanded, divided by the percentage change in the price of good y. K. CLARKSON & R. MILLER, *supra* note 1, at 55.

Cross-elasticity of supply is defined as equal to the percentage change in the amount of good x supplied by the producer of good x, divided by the percentage change in the price of good y. *Id.* at 57.

Whenever cross-elasticity is positive, the two commodities are classified as substitutes and, therefore, should be included in the same product market definition.

90. FTC Merger Statement, *supra* note 88, at § VI(B).

91. 370 U.S. 294, 328-34 (1962). The Court stated that the increase in market concentration produced by mergers would be one of the most important factors to be considered in appraising the anti-competitive effect of a horizontal merger.

92. Section 1 of the DOJ Merger Guidelines states: "The unifying theme of the Guidelines is that mergers should not be permitted to create or enhance market power or to facilitate its exercise." DOJ Merger Guidelines, *supra* note 19, at § 1.

93. Section 3.5 of the DOJ Merger Guidelines discusses in two paragraphs the possibility of evidence of efficiency being used to defend a merger. Such evidence must be "clear and convincing." DOJ Merger Guidelines, *supra* note 19, at § 3.5.

94. R. CLARKE, *supra* note 42, at 14-15.

95. *Id.*

merger. Where the post-merger HHI is below 1000 the DOJ will not challenge the merger unless there are extraordinary circumstances.<sup>96</sup> Where the post-merger HHI is above 1000 but below 1800 the DOJ is "unlikely" to challenge the merger if the change in HHI resulting from the merger is less than 100.<sup>97</sup> If the change in HHI is more than 100, the DOJ is "likely" to challenge the merger unless persuaded otherwise by other non-statistical market factors.<sup>98</sup> Where the post-merger HHI is above 1800 the DOJ is "unlikely" to challenge the merger if the change in HHI is below 50.<sup>99</sup> If the change in HHI is between 50 and 100, the DOJ is "likely" to challenge the merger unless persuaded otherwise by other non-statistical market factors.<sup>100</sup> If the change in HHI is greater than 100, the DOJ is "likely" to challenge and is unlikely to be persuaded otherwise except in extraordinary cases.<sup>101</sup>

There are a number of problems with this approach. First, data on market share is very difficult to obtain and inherently unreliable. Second, and most important, as we will argue more fully in Section V, the DOJ cutoff points for determining when it will challenge a merger appear to be arbitrary. Further, the Guidelines largely ignore any pro-competitive effects of a merger. Thus, the Guidelines may go too far in markets where the merger increases the HHI by more than 100 without regard to additional factors.<sup>102</sup>

### C. *Conflicting Schools of Thought*

The Guidelines do not reflect an economic consensus. According to the Guidelines, the primary predictor of the likelihood of collusion in a market is the size distribution of the sellers' market share. The HHI is used to summarize size distribution. The higher the HHI, the more likely that the DOJ will challenge the merger. This assumes, however, that firms in concentrated industries are more likely to engage in either tacit or explicit collusion.

Supporters of the traditional school of thought argue that the structure of an industry determines the conduct of the firm, which in turn determines the performance of that industry.<sup>103</sup> In a concentrated industry, firms are

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96. DOJ Merger Guidelines, *supra* note 19, at § 3.11(a).

97. *Id.* § 3.11(b).

98. *Id.*

99. *Id.* at § 3.11(c).

100. *Id.*

101. *Id.*

102. Problems confront virtually all summary concentration indexes, including the HHI. The following is a partial list of the inadequacies of most concentration ratios: "1) Because they are based on national figures, they ignore regional market power and concentration; 2) They ignore imports and exports; 3) They do not consider the ability of potential entrants to compete." K. CLARKSON & R. MILLER, *supra* note 1, at 79. A particular operational shortcoming of the HHI is that the result is very sensitive to measurement error of the share of the largest seller in the market.

103. J. BAIN, *BARRIERS TO NEW COMPETITION* 2-4 (1956); F. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 4 (1980); *Price and Production Policies of Larger Scale Enterprise*, AM. ECON. REV. SUPP. 29 (Mar. 1939) (round table discussion).

protected from the threat of competition by barriers to entry. There are only a few sellers in the industry and this has the effect of lowering the transaction costs inherent in any collusive arrangement. In such an industry, through either tacit or explicit collusion, it is argued the firms can and will agree to lower output and raise prices. Therefore, economists of the traditional school seek strong enforcement of the antitrust merger laws in concentrated markets.<sup>104</sup>

Economists of the "Chicago School," while not rejecting out of hand the concentration-collusion doctrine of the traditional school, stress the importance of the competitive process rather than the structure of the markets.<sup>105</sup> They argue that firms that grow large through merger can only maintain their increased market share by offering better products, prices, or both. Moreover, mergers are a natural and usually beneficial aspect of the competitive process. Firms do not generally acquire one another unless they expect that the combination will be more efficient than the separate entities. Therefore, "Chicago School" economists are more inclined to believe that most mergers are pro-competitive and are intended to enhance profitability through superior efficiency.<sup>106</sup>

#### IV. DETERMINING WHETHER A GIVEN MERGER IS ANTI-COMPETITIVE

##### A. *Science and Rhetoric*

How can we decide between these competing hypotheses in a particular case to determine whether a merger is pro- or anti- competitive?

A merger may produce above normal profits by facilitating the efforts of the firms in the industry to cooperate on a policy to restrict output and raise prices (cartelization). The anti-competitive effect of such market activity is obvious and easy to describe analytically and even to measure, although imperfectly. This is, in fact, the intended purpose of the HHI. The HHI serves as a proxy for the notion that the more concentrated an industry, the greater the possibility for the firms within it to behave like a perfect cartel.<sup>107</sup>

On the other hand, a merger may have been motivated by anticipated economies of scale and scope. It is extremely difficult, however, to describe analytically and impossible to measure systematically these potential pro-competitive effects of a merger. Economists can, in the typical case, do little

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104. F. SCHERER, *supra* note 103, at 490.

105. R. BORK, *supra* note 54, at 408-25. Bork blames the inadequate performance of the legal institutions that shape antitrust law on the "absence of a rudimentary understanding of market economics." *Id.* at 425; See also Demsetz, *Economics as a Guide to Antitrust Regulation*, 19 J. LAW & ECON. 371 (1976); Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925 (1979).

106. R. POSNER, *supra* note 29, at 111-13.

107. See *supra* notes 29-33 and accompanying text for a discussion of cartels and their associated evils.

more than describe this potential result through the graphic illustration of a downward shift of indeterminate magnitude in the firm's average cost curve. How much it will shift, or indeed, rigorous proof that it will shift, is generally beyond the capacity of the art and science of economics either as an analytical or an empirical discipline. The inability of economics to systematically deal with economies of scale and scope with even the limited rigor of something analogous to the Herfindahl-Hirschman Index can be illustrated most clearly by examining increases in plant or firm size that seem to be exceptions.

Consider the growth of oil tankers. There is a well-known engineering principle known as the  $2/3$  power rule relating changes in the volume of a container to changes in surface area. If one doubles each linear dimension of a container, the volume of the container will increase eight-fold, and the surface area of the container will increase four-fold. Since in operating oil tankers, or other cargo ships for that matter, output will be proportional to volume and at least some elements of cost will be proportional to surface area, the economies of scale of building bigger oil tankers is not only analytically obvious but, in addition, can be described with mathematical precision. These economies of scale, in part, explain why oil tankers grew markedly in size in the 1960's and 1970's.

The very power of the  $2/3$  power rule as an explanation and technical demonstration of economies of scale, is itself the undoing of such explanations. God has not repealed the  $2/3$  power rule. Thus, one is left with the question of why oil tankers have not continued to grow. Why isn't there a tanker the size of Manhattan Island plying the waters of the Persian gulf? The obvious answer is that along with economies of scale there are diseconomies of scale. Over certain ranges of output those diseconomies swamp the economies. In the case of oil tankers, the difficulties of building, servicing, loading and unloading an oil tanker the size of Manhattan would generate costs that dwarf any cost savings in steel or labor in building or operating such a tanker.

But where is the mathematical concomitant to the  $2/3$  power rule that explains why it is sensible to stop increasing the size of oil tankers? There is none. Instead we are left with plausible lists and descriptions of costs that must suffice as an explanation. There is simply no limit to the number and variety of possible economies and diseconomies of scale and scope, nor any general method for quantifying them, and *a fortiori* no possibility of summing them up in a way that would demonstrate the direction and size of a shift in a firm's average cost curve in the event of a merger. *Ex post* it may be possible to measure shifts in cost curves, albeit with questionable accuracy, but *ex ante* it is not possible to analytically, mathematically, or empirically demonstrate that such shifts will occur with a degree of certainty that should pass muster in any referred journal or court of law. Thus, as a judicial matter, we are generally left with but one blade of the scissors, some measure of increased concentration, such as the HHI. This measure will undoubtedly rise as a consequence of the merger, and serve as a sign of the bare possibility



of collusive restraint of trade. On the other side, there exists no comparable analytical tool to capture the possible economies of scale and scope and provide a complete tool with which to cut to the heart of the question of whether a merger will be pro- or anti-competitive.

Nor is the one blade of the scissors we retain very sharp. It is beyond dispute that the greater the concentration, the greater the possibility and effectiveness of attempts to cartelize the industry. It is obvious that an industry with but one firm is a monopoly and can behave as such, and that an industry with 500 equal sized firms is effectively perfectly competitive. It is also clear that as one moves from an industry structured like the latter to one more like the former, the possibility of cartelization increases. But at what rate? We are in essentially the same position in answering that question as the geographer who, noting that the Dead Sea is the lowest point on the surface of the Earth and the top of Mt. Everest the highest, then wishes to determine the altitude of points on a line between those two locations. If he walks from the former to the latter convinced that the altitude will steadily increase, he will discover that both he and his theory are all wet when he reaches the Persian Gulf. So too for us. While at some point as an industry becomes more concentrated it may, through collusion leading to cartelization, function more like a monopoly, the point at which it becomes, for antitrust purposes, sufficiently close to a monopoly is unknown and probably unknowable. The plethora of "theories" of oligopoly is itself evidence that relying on measures of concentration as a proxy for the likelihood of cartelization is highly suspect. Such measures of concentration and the thresholds employed by the DOJ and FTC are little more than semi-educated guesses, lacking both reliability and universality.

### B. Evidence of Post-Merger Performance

Three recent studies have addressed the issue of whether mergers generally are social wealth decreasing or social wealth increasing.<sup>108</sup> Rather than attempting to econometrically derive the cost and demand curves of the firms involved, these studies compared the changes in stock value of merged firms within an industry with the changes in stock value of the unmerged firms in that same industry. If the merger creates monopoly power or increases the risk of collusion, all firms in the industry, regardless of their participation in the merger, will be able to increase their prices. Interestingly, those firms that do not participate in the merger will gain relatively more because, unlike

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108. Eckbo, *Horizontal Mergers, Collusion and Stockholders' Wealth*, 11 J. FIN. ECON. 241 (1983) (finding little evidence to indicate mergers would result in collusive, anti-competitive effects); Stilman, *Examining Antitrust Policy Towards Horizontal Mergers*, 11 J. FIN. ECON. 225 (1983) (used stock prices from rival firms to predict merger's effect on competition); Wier, *The Costs of Antimerger Lawsuits: Evidence From the Stock Market*, 11 J. FIN. ECON. 207 (1983) (finding that relief imposed by antitrust law is costly to a firm's stockholders and therefore wealth decreasing).

the merged firms, they will not have to decrease output in order to increase price, but can both increase output and price. All shareholders in the industry will gain, but shareholders in firms that do not participate in the merger will gain relatively more. If the merger instead improves the quality of the product or results in lower costs and lower prices, then the stock price of the merged firm will increase relative to that of the unmerged firms in that industry. These studies find that, in the large majority of mergers, it is the latter scenario that has occurred. The fact that investors in unmerged firms usually lose indicates that most mergers are pro-competitive. The results are inconsistent with the traditional school's concentration-collusion doctrine and the market power hypothesis in that they indicate that the change in the structure of the industry, i.e. more concentration, does not lead to higher prices and decreased output.<sup>109</sup>

Nonetheless, as useful as such studies may be, they are of little help to a court or enforcement agency that must answer the question of whether a *proposed* merger will be social wealth increasing rather than whether an *actual* past merger was social wealth increasing. They do clearly demonstrate, however, that the effects of pro-competitive and anti-competitive mergers are very different on competing firms in the industry. Thus, the answer to the prospective effects question may lie in the conduct of competing firms.

### C. RC's Position: The Evidentiary Weight of Self-Interest

Both economists and businessmen are anxious to know the effects of merger. The economist's interest is generally in discovering whether the merger is efficient and being able to demonstrate this to his colleagues using the tools of his profession. He seeks to determine whether, and by how much, social wealth will be increased or decreased by a merger. The businessman's interest, on the other hand, is motivated by private gain. He wishes only to learn whether the merger will add to his own net wealth. His standard of proof and the evidence he would regard as persuasive are a function of the world of business, not the world of the academic economist. Nonetheless, a businessman's reaction to a merger within his industry tells lawyers and economists something about the merger's effect on competition. The recent merger activity in the carbonated soft drink industry is a powerful illustration of this proposition.

Pepsi, Coca-Cola, Dr. Pepper, and 7-Up did not simply have an academic interest in the outcome of the mergers. They were all greatly concerned with whether or not their mergers would be profitable. If the merger had been profitable, they would have been largely indifferent to the reason why. Whether or not this increased profitability resulted from the exercise of monopoly power or decreased costs, they would have approved of the merger. Similarly, they would have disapproved the merger if it reduced their profits,

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109. R. POSNER & F. EASTERBROOK, *supra* note 30, at 42.

regardless of the cause. Other firms in the industry, however, such as RC, would have been differentially affected depending on the source of the gain to the merged firms.

RC is a competitor in the carbonated soft drink industry. It was not a party to the proposed Coca-Cola and Pepsi mergers. In this position, RC stands to benefit from, and has no incentive to challenge, acquisitions that may lead to anti-competitive pricing. If the motivation for a merger is anti-competitive, the newly created entity would have sufficient market power to increase its profits by lowering output and raising prices. Other firms in the industry would be free to take advantage of this opportunity to sell their output at a higher price or to capture a larger market share by selling their output at its original price. Competing producers have even more to gain from an anti-competitive merger in their industry than do the merged firms themselves because the competitors need not reduce output in order to raise prices.

On the other hand, RC has a substantial incentive to oppose those mergers of rivals that are pro-competitive in the sense that they will make those rivals more efficient and reduce the price the rivals can charge consumers. If the motivation for the merger is pro-competitive, enabling the merged entity to lower costs by utilizing economies of scale and scope, the merger will result in lower prices and/or a better quality product. If other firms in the industry, such as RC, wish to survive, they must follow suit and lower their prices. If they have a high cost of production, they may be precluded from lowering their prices and be forced from the market. Therefore, a competing firm would oppose any pro-competitive merger within its industry. Because RC sought to enjoin the Coca-Cola and Pepsi mergers, it is fair to conclude that those mergers would have been pro-competitive and, therefore, financially damaging to RC.<sup>110</sup>

The HHI for the carbonated soft drink industry immediately prior to these planned mergers was 2372. The HHI as employed by the DOJ is divided into three regions: unconcentrated, moderately concentrated and highly concentrated. 2372 is 572 points greater than the highest figure used by the DOJ in its Merger Guidelines to classify a market as "highly concentrated." The DOJ Merger Guidelines deem an acquisition in such a highly concentrated market as likely to substantially lessen competition if the HHI increases by more than 100 points. If the Coca-Cola or Pepsi acquisitions had been consummated, the HHI would have increased by 548 points and 346 points respectively. If both acquisitions proceeded, the HHI will have jumped by 894 points to 3266. That increase is almost nine times as much as the changes the DOJ considers likely to substantially lessen competition. Yet, if we

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110. RC is not unusual in having brought suit to prevent this merger. The vast majority of antitrust cases are brought by private plaintiffs with private rather than public concerns. Schmalensee, *Antitrust and the New Industrial Economics*, 72 AM. ECON. REV. PROCEEDINGS 1, 24-27 (1982).

assume that RC is accurately representing its own interests, these mergers would have enhanced competition rather than lessened it. The singular importance of the HHI in the Justice Department Guidelines, and the low thresholds it employs, results in an unwarranted hostility to most mergers. It appears, therefore, that the DOJ's HHI guidelines may be extremely and dangerously conservative.

Those guidelines use the relatively sophisticated and statistically efficient tool of the HHI, and employ specific arithmetic cut-off points. This use of mathematics gives a veneer of precision. The numerical divisions employed by the DOJ suggest greater precision, however, than is possible with available economic tools and information.<sup>111</sup> It can, of course, be said in defense of such a measure that it is better to carefully than to sloppily measure, even when using an admittedly imprecise scale. Nonetheless, this example illustrates that care in measurement is not a substitute for sound theory and an accurate scale.

The HHI and the DOJ Guidelines are attempts to objectify the notion that the greater the concentration in an industry, the greater the market power of the leading firms and the greater the payoff to, and possibility of collusion among, those firms. There is no persuasive theoretical or empirical evidence of the rate at which anti-competitive market power increases in relation to the HHI. In addition, the Justice Department guidelines do not even attempt to give systematic weight to the pro-competitive effects of possible economies of scale and scope that might result from mergers. Despite the enormous HHIs in the proposed soft drink mergers of 1986, the mergers between Coca-Cola and Dr. Pepper and between Pepsi and 7-Up would likely have been pro-competitive.<sup>112</sup>

Of course, one could argue that, in opposing mergers, many competitors are really afraid of subsequent predatory pricing efforts on the part of the merged entities rather than honest competition. Although RC did not allege predatory pricing in its complaint,<sup>113</sup> we will address the issue. Predation refers to a firm's pricing behavior which is aimed at inhibiting the development of rival businesses. Accordingly, the established firm prices its product extremely low, forcing competitors to match the low price or leave the market.<sup>114</sup>

Predation has sometimes been called destructive, or cut throat, competition<sup>115</sup> because it was thought that such pricing would destroy the competitive

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111. R. POSNER & F. EASTERBROOK, *supra* note 30, at 64.

112. See *supra* notes 91-101 and accompanying text for a discussion of the HHI and its use by the DOJ in evaluating mergers.

113. In *Cargill, Inc. v. Monfort of Colorado*, 479 U.S. 104, 117-22 (1986), the Supreme Court held that competing firms must specifically allege that the merging firm would engage in predatory pricing.

114. Joskow & Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 *YALE L.J.* 213, 219-22 (1979).

115. Areeda & Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 *HARV. L. REV.* 697 (1975). See also Yamey, *Predatory Price Cutting: Notes and Comments*, 15 *J. LAW & ECON.* 129 (1972).

process which produces market efficiency. The dominant firm would cut prices to drive out competitors in the short run in order to raise prices towards the monopoly level in the long run. However, the emerging academic consensus appears to be that such pricing behavior imposes as much harm on the so-called predator as on the victim.<sup>116</sup> In fact, the predator will lose more revenue than its rival.

For example, if post-merger Coca-Cola behaves as a "predator" by lowering its price below its average variable cost<sup>117</sup> and RC, along with other rivals in the industry, reduce their price to the level set by Coca-Cola, then all manufacturers in the industry will suffer losses relative to their respective sales volumes. Therefore, because Coca-Cola's sales volume is larger than its rivals, the losses sustained by Coca-Cola will be proportionately larger. Furthermore, Coca-Cola will be unable to recoup the losses it incurred during predation. It can increase price when rivals leave the market, but new entrants attracted by the high prices will drive price down, thereby precluding the predator from recouping its losses. A fear of predatory pricing, therefore, is an implausible explanation of why RC so vehemently challenged the proposed mergers.

Competitor opposition to mergers is an inherently reliable source of evidence. All the conclusions that we have drawn are derivative. Rather than attempting to carefully examine the carbonated soft drink industry and gather detailed information about the industry and then econometrically estimating the possible shifts in the curves that would result from these mergers, we instead relied on the second-hand information of the behavior of the parties involved. Had we engaged in econometric estimation, it is doubtful that many economists would be as persuaded by those results as by the course we actually chose.

Skepticism about the reliability of econometrics as a tool for definitively revealing the shape of and shifts in cost or demand curves is well founded. As Wasilly Leontief said in his 1970 American Economic Association Presidential address, "in no other field of empirical inquiry has so massive and sophisticated a statistical machinery been used with such indifferent results."<sup>118</sup> The state of the art has not been dramatically advanced since he wrote. Thus, there is sound reason to place more trust in conclusions drawn

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116. See Telser, *Cutthroat Competition and the Long Purse*, 9 J. LAW & ECON. 259, 268 (1966) ("no sensible monopolist would cut prices before having ascertained whether he and the existing entrant can agree on merger terms."). Accord Campbell, *Predation and Competition in Antitrust: The Case of Nonfungible Goods*, 87 COLUM. L. REV. 1625, 1626-30 (1987).

117. Pricing below the reasonably anticipated short run marginal cost, which is the rate of change in total cost per unit change in output, is considered predatory. However, because calculating marginal cost is difficult, Areeda and Turner suggest average variable cost, which is the sum of all variable cost divided by output, should be used as an alternative. Pricing below average variable cost, they argue, should be per se illegal. See Areeda & Turner, *supra* note 115, at 716-18.

118. Leontief, *Theoretical Assumptions and Nonobserved Facts*, 61 AM. ECON. REV. 1, 3 (1971).

from the self-aggrandizing motives of market actors, rather than in an independent application of the empirical and statistical tools of the economics profession to the raw data.

Nonetheless, there is something peculiar in this process. How is it that economics, a profession dedicated to understanding how markets function, must stand mute or rely on derivative evidence from businessmen when asked to determine the effect of a merger, while at the same time businessmen, usually untrained in this arcane art, can be certain enough about the merger to risk hundred of millions of dollars and their careers? We believe the answer is one of rhetoric. The quantity, and more importantly the kind, of evidence that will persuade a businessman has not been considered appropriate or legitimate in economic discourse. It is ironic that, although economists may be persuaded that the mergers in question were likely to be pro-competitive by the fact that RC opposed them, economists do not generally inquire into or make use of the evidence or reasoning that persuaded RC. Why is this? It can, with some merit, be said that such evidence is largely inaccessible. We do not believe, however, that it is inaccessibility alone that explains why economists are loath to make such inquiries. The more complete answer seems to be related to the notion that economics is a science. The economist requires "proof," where proof means a certain category of evidence that can be translated into either statistical confidence limits or an analytical model. The businessman's reasoning process and data have not been, and perhaps cannot be, manipulated so as to achieve that degree of reification. Therefore, as an analytical tool, it is considered inadequate.

It seems indefensible to take the position that one can reason from businessmen's actions to their motives, and from their motives to the effects of the merger, and yet that one must not employ the reasoning process and evidence that propelled the businessman from his motives to his actions. In addition to any conclusions to be drawn about: (1) this particular merger; (2) the Justice Department merger guidelines; and (3) the state of our knowledge, or more accurately, lack of knowledge, of the competitive effects of mergers, we wish to suggest that broadening the rhetoric of economics as it applies to antitrust questions would be enlightening.<sup>119</sup>

#### V. SUMMARY AND CONCLUSION

To summarize, economic theory is not a powerful enough tool to reveal with certainty whether Coca-Cola, Dr. Pepper, Pepsi, and 7-Up were correct in their anticipation that merger would permit them to either lower costs, raise revenues, or both. Even if the mergers had taken place, it is likely that there would have been too much statistical noise to definitively determine econometrically whether the mergers were in fact advantageous to the par-

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119. See McCloskey, *The Rhetoric of Economics*, 21 J. ECON. LITERATURE 481 (1983). McCloskey argues that economists have developed a misguided fixation on methodology that stultifies and limits the way in which they write and think about economic questions.

ticipating parties. Nevertheless, the self-aggrandizing concerns and relatively greater knowledge of the participating parties of the particular market combined with the magnitude of the financial risk entailed in the decision to merge, creates a strong presumption that their plan was a correctly devised attempt to increase private wealth.

In a similar manner, it is safe to assume that: (1) RC's motives were selfish; (2) RC gave a good deal of thought to its actions with regard to the merger given: (a) the cost of engaging in a lawsuit, and; (b) the fact that opposing a merger whose purpose was to facilitate cartelizing the industry would be the equivalent, for RC, of shooting itself in the foot, and; (3) RC is relatively knowledgeable about the nature of the carbonated soft drink industry and market. Therefore, with equal confidence, we can conclude that RC, in its opposition to the mergers, likewise correctly anticipated that these mergers were not intended to, and would not, facilitate a cartelizing of the carbonated soft drink industry. The mergers rather, would have, by lowering production costs of the merged entities, lowered the prices of the products that compete with RC. RC would, thereby, be forced to either lower prices, lose market share, or both. It is likely, therefore, that these mergers, had they occurred, would have been efficient. Comparative static price theory makes unequivocally clear that a merger resulting in lower prices increases social wealth.

The broader relevance of this important evidence showing pro-competitiveness is that it suggests that the HHI, at least as used by the DOJ and FTC, is a demonstrably unreliable criterion of anti-competitiveness. Although the defendant has a theoretical option of rebutting the HHI's presumption, there is currently no sufficiently general way to accomplish this feat. The FTC and DOJ enforcement policies undoubtedly have a chilling effect on many truly pro-competitive mergers. Each denial of a merger that would have been pro-competitive not only injures the merging entities, it injures the public as well. Such a result is simply unacceptable antitrust law from a policy standpoint.