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# Oligopolistic Pricing Suits, the Sherman Act, and Economic Welfare

A Reply to Professor Markovits

Richard A. Posner\*

The editors of the *Stanford Law Review* have invited me to comment on Richard Markovits' massive article on the legal control of oligopoly pricing under the antitrust laws.<sup>1</sup> The article takes issue with my views on the subject as expressed in an article published in the *Review* some years ago.<sup>2</sup> I welcome this opportunity both to reply to Markovits' specific criticisms of my views and to comment on his approach to an important issue of public policy.

## I. BACKGROUND TO THE CONTROVERSY

Some background is necessary to make the differences between Markovits and me intelligible to the reader. When the Sherman Act<sup>3</sup> was passed in 1890, American industry was apparently rife with cartels. I use the term "cartel" to refer to the kind of full-blown, above-board, price fixing scheme in which the parties, untroubled by threats of legal sanction, create a formal and often elaborate machinery of agreement and enforcement in order to cope with the difficulties of reaching agreement and of preventing cheating that plague price fixers. Exclusive sales agencies, revenue pooling, production quotas, customer and territorial allocations, provisions for arbitration of disputes, and fines for violating the cartel agreement are among the mechanisms by which cartels seek to maximize the profits from price fixing.

Section 1 of the Sherman Act forbids contracts, combinations, and conspiracies in restraint of trade and, although not vigorously enforced in

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1. The four-part article contains a total of 152 pages. Markovits, *Oligopolistic Pricing Suits, the Sherman Act, and Economic Welfare, Part I, Oligopolistic Price and Oligopolistic Pricing: Their Conventional and Operational Definition*, 26 STAN. L. REV. 493 (1974); *Part II, Injurious Oligopolistic Pricing Sequences: Their Description, Interpretation, and Legality under the Sherman Act*, 26 STAN. L. REV. 717 (1974); *Part III, Proving (Illegal) Oligopolistic Pricing: A Description of the Necessary Evidence and a Critique of the Received Wisdom About Its Character and Cost*, 27 STAN. L. REV. 307 (1975); *Part IV, The Allocative Efficiency and Overall Desirability of Oligopolistic Pricing Suits*, 28 STAN. L. REV. 45 (1975). And Part IV virtually incorporates by reference another 43-page article (*see id.* at 47): Markovits, *The Causes and Policy Significance of Pareto Resource Misallocation: A Checklist for Micro-Economic Policy Analysis*, 28 STAN. L. REV. 1 (1975).

2. Posner, *Oligopoly and the Antitrust Laws: A Suggested Approach*, 21 STAN. L. REV. 1562 (1969).

3. 15 U.S.C. §§ 1-7 (1970).

its early days, largely eliminated the formal cartel from the industries subject to it. In many cases, however, cartels simply were driven underground to become secret price fixing conspiracies. They were not, of course, any the less unlawful by virtue of being concealed, and the law enforcers did their best to pursue them underground, but the enforcement methods used were ill adapted to dealing effectively with price fixing in its new, noncartel form. In particular, the rule against price fixing, which in its original form had emphasized the economic effects of collusive pricing, degenerated into a prohibition against attempting to fix prices by overt conspiratorial methods, involving secret meetings in hotel rooms, methods of bid rotation designed to conceal the existence of the conspiracy, and other affirmative acts of communication and concealment; the focus of the rule shifted from the economics of collusion to conspiratorial behavior.<sup>4</sup>

The process by which the rule against price fixing was virtually emptied of any economic content, to become in effect a branch of the criminal law of conspiracies and attempts, had a number of unfortunate side effects,<sup>5</sup> only one of which I shall discuss here: it rendered antitrust enforcers virtually helpless to deal with any case of collusive pricing in which the conspirators did not leave behind them a visible trail of communications or acts of concealment. Conceivably the conditions of a market might be such as to enable the sellers in it to collude without leaving detectable traces of an overt conspiracy, and if so they would be beyond the reach of the law.

As an illustrative if extreme case, one can imagine a group of sellers able to collude without any overt contact or communication, simply as a result of a mutual recognition that all would be better off if the market price were higher, simultaneously prompting each seller to raise his price to the desired level. Such a case is probably rare, but it is entirely possible that some market settings permit collusive pricing with so little actual communication among the sellers as not to expose them to an appreciable danger of being prosecuted for price fixing. Moreover, whether a case involves oligopolistic pricing without explicit collusion, or overt conspiracy under such favorable conditions as to generate no evidence of conspiracy, is a distinction without a policy difference. From the standpoint of the trier of facts, both are cases of oligopolistic pricing, or "tacit collusion," which is my term for any form of collusion not detectable by means of the conventional, noneconomic approach to proving culpable price fixing.<sup>6</sup>

Any residual hope that tacit collusion might be effectively controlled

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4. Compare *United States v. Addyston Pipe & Steel Co.*, 85 F. 271 (6th Cir. 1898), *modified and aff'd*, 175 U.S. 211 (1899), with *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 224-26 n.59 (1940). See R. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* ch. 3 (forthcoming).

5. For a fuller discussion of these effects see R. POSNER, *supra* note 4, chs. 1 & 4-7.

6. A full explanation of "tacit collusion" is found in Posner, *supra* note 2, at 1566-93.

by section 1 of the Sherman Act was dashed by Donald Turner's influential article on conscious parallelism, published in 1962.<sup>7</sup> Turner argued that oligopolistic pricing is inherent in the structure of highly concentrated markets and cannot be prevented without changing market structure. It is impossible, he argued, to expect an injunction against oligopolistic pricing to be effective, for such an injunction would command the oligopolists to do the irrational: ignore the effect of a price cut by one seller on the price and output of the others. In a competitive market, sellers act as "price takers"; that is, they act under the assumption that they can sell at the current market price any quantity they produce without affecting the market price. In a highly concentrated market, in contrast, the seller is aware that if he increases his output the market price will fall and his total profits may be reduced. This awareness, Turner argued, discourages oligopolistic sellers from competing effectively in price.

My 1969 *Stanford Law Review* article argued that Turner's suggested dichotomy between competition and oligopoly was overdrawn; there is no fundamental difference between a market with many sellers and a market with few.<sup>8</sup> In either one there is both competitive pressure on each seller to expand his output to the point where his price is equal to his marginal cost, and countervailing pressure to establish effective methods of collusion that will enable the sellers to restrict their output and thereby increase their profits above the competitive level. Thus, it is not irrational for oligopolistic sellers to behave competitively, that is, to carry output to the point where price and marginal cost are equal, and no doubt many oligopolists do just that. The only difference between competitive and oligopolistic markets is that, other things being equal, collusion is easier to arrange and maintain in the latter and perhaps in a rare case may even be practiced successfully without resort to any acts of overt communication. The difference between the problem of collusion in competitive and in concentrated markets is thus one of degree. The true significance of number of sellers is simply as one of the factors bearing on the feasibility of collusion with minimum communication.

If this analysis is correct, then the problem of the legal control of tacit collusion has nothing to do with the character of the remedy to be applied in a tacit collusion case or the thought processes of the sellers in concentrated markets, as Turner believed; the problem is *proving* the existence of collusive pricing in a case where evidence that the sellers have actually communicated with one another is unobtainable. Since collusive pricing is never

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7. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusals to Deal*, 75 HARV. L. REV. 655 (1962).

8. See Posner, *supra* note 2, at 1566-75.

an unconscious state, there should be no problem of compliance with an injunction forbidding it. The problem, to repeat, is proof of collusion by economic evidence alone.

My article suggested several different kinds of evidence that could be used to establish the existence of collusion in the absence of traditional evidence of price fixing such as secret hotel meetings and the like. I have returned to the problem of evidence several times since then;<sup>9</sup> my latest writing on the question discusses twelve kinds of economic evidence that might be used to establish collusive pricing.<sup>10</sup> In my view, such evidence is always relevant and often essential in a price fixing case, but *exclusive* reliance on such evidence is proper only with respect to markets in which conditions are so propitious for collusion<sup>11</sup> as to enable the sellers to collude without actually communicating with one another or at least without leaving any detectable traces of their communications.

Attacking tacit collusion in this manner under section 1 of the Sherman Act should be feasible, and is clearly worthwhile at least on an experimental basis. Although there is little academic support for such an approach, one increasingly encounters approximations to it in plaintiffs' theories in private antitrust suits attacking collusive pricing;<sup>12</sup> there is judicial support for it,<sup>13</sup> and there is no authoritative precedent standing in its way.<sup>14</sup> I emphasize that the soundness of the proposed approach depends only on the ability of economic analysis in particular cases to generate evidence that will persuade a responsible trier of facts both that a given market *can* be cartelized without detectable acts of collusion and, if so, that it *has* been cartelized.

9. R. POSNER, *supra* note 4, ch. 4; R. POSNER, *ANTITRUST: CASES, ECONOMIC NOTES, AND OTHER MATERIALS* 128-35 (1974); Posner, *A Program for the Antitrust Division*, 38 U. CHI. L. REV. 500, 514-25 (1971). Although the first-cited work was not available to Professor Markovits when he was writing his article, the others were. I am surprised that he limits his discussion to my 1969 article and does not consider the more mature formulations of my position.

10. They are fixed relative market shares; systematic price discrimination; exchanges of price information; regional price variations; identical bids; price, output, and capacity changes at the formation of the cartel; resale price maintenance; declining market shares of leading firms; amplitude and fluctuation of price changes; demand elasticity at market price; abnormal profits; and basing-point pricing. R. POSNER, *supra* note 4, ch. 4.

11. As indicated by such characteristics as market concentration on selling side, no fringe of small sellers, inelastic demand at competitive price, entry takes a long time, many customers, standard products, firms sell at same level in chain of distribution, price competition more important than other forms, high ratio of fixed to variable costs, demand static or declining over time, sealed bidding, and a previous record of price fixing. R. POSNER, *supra* note 4, ch. 4.

Thus, I envisage a two-stage inquiry in a tacit collusion case. The first is to discover whether the market has enough predisposing characteristics to collusion to support an inference that the firms *could* collude effectively without generating evidence of collusion of the usual sort. If so, the second stage is to discover whether they are in fact colluding, as indicated by their economic behavior. The purpose of the first stage is to exclude from consideration markets in which tacit collusion is too unlikely to succeed to be worth worrying about.

12. See, e.g., Funderburk, *Price Fixing in the Liquid-Asphalt Industry: Economic Analysis Versus the "Hot Document,"* 7 ANTITRUST L. & ECON. REV. Fall 1974, at 61.

13. Especially in *American Tobacco Co. v. United States*, 328 U.S. 781, 809-10 (1946); *Wall Products Co. v. National Gypsum Co.*, 326 F. Supp. 295, 315-16 (N.D. Cal. 1971).

14. See R. POSNER, *supra* note 4, ch. 4.

## II. A SUMMARY OF MARKOVITS' POSITION

Markovits' position on the Turner-Posner debate requires a detailed summary because of the length of his article and his writing style—to which I react as did one reader to Bentham's prose: "I felt as though I had been asked to masticate an ichthyosaurus."<sup>15</sup> First, Markovits insists that both Turner and I have committed a fundamental error in equating *supracompetitive* pricing with *collusive* pricing.<sup>16</sup> Markovits believes it essential to distinguish between those prices above the competitive level that reflect the "competitive advantages" (that is, monopoly power) of individual firms and those that reflect the "oligopolistic margins" resulting from explicit or tacit collusion among firms. He worries that higher than competitive prices might be used—incorrectly—to support an inference of collusion in circumstances where the higher prices actually reflected the monopoly power of individual firms. He ignores, however, the possibility that "competitive advantages" might result from a tacit or explicit division of markets.

Second, Markovits insists on distinguishing between two forms of oligopolistic pricing, which he terms "natural" and "contrived."<sup>17</sup> "Natural" oligopoly pricing is that form of what I term tacitly collusive pricing that arises simply from a mutual awareness by competing sellers that all would be better off if their prices were higher, an awareness that motivates the sellers to refrain from competing with one another. Natural oligopoly pricing appears to be a concept similar or identical to Turner's "conscious parallelism" or "oligopolistic interdependence," and Markovits agrees with Turner that it does not violate section 1 of the Sherman Act.<sup>18</sup> But his reason for reaching this result is sharply different from Turner's. Markovits be-

15. Quoted in M. MACK, *JEREMY BENTHAM 1748-1792*, at 196 (1962). My objection to Markovits' writing style is not that he relies excessively on the jargon of economics, or on the geometrical and algebraical formulations in which economists like to express their ideas. His article is in fact relatively free of standard economics jargon and contains no mathematics. (There are, however, a large number of arithmetical illustrations.)

The problems with Markovits' style are different. They include the proliferation of new and unfamiliar terms and acronyms (POP's, SOP's, CA's, CCA's, BCA's, etc.), abstractness, prolixity, and a lack of clear organization. His style presents enormous difficulties even for the economically sophisticated reader. The difficulties are unnecessary since his ideas are basically quite simple, as I have tried to indicate in my summary of the article in the text.

A special problem is created by Markovits' heavy reliance on confusing and sometimes unfairly biased arithmetical illustrations to carry his points. Consider, for instance, the example discussed in *Part I, supra* note 1, at 519-28, which appears to be an important part of Markovits' analysis of "contrived" oligopoly pricing. In presenting the example, Markovits imposes the condition that sellers cannot change their prices by fractions of a cent. This seems reasonable enough—until one realizes that the assumed marginal cost of the product in question is only one cent, which means that the minimum price increase above the competitive level that a seller can make is a 100 percent increase. Thus, if price is initially at the competitive level, the seller's only choice is between doubling his price and not changing it at all. If this condition were relaxed and sellers were permitted to vary their price continuously, Markovits' analysis of contrived oligopoly pricing, which depends on sellers' inability to make flexible price responses, would be undermined.

16. See *Part I, supra* note 1, at 494-97, 500.

17. See *Part II, supra* note 1, at 721-29; *Part IV, supra* note 1, at 45 nn.4-5.

18. See *Part II, supra* note 1, at 738-40.

believes that section 1 reaches only agreements that would constitute contracts under the common law or the Uniform Commercial Code, and mere mutual forbearance to reduce price or expand output does not create such a contract.<sup>19</sup> Unlike Turner, but like me, Markovits believes that natural oligopolistic pricing *should* be forbidden by antitrust law.

"Contrived" oligopolistic pricing occurs when a seller, having raised his price above the competitive level, would find it costly to reduce the new price immediately and uses threats of predatory pricing or other forms of exclusionary conduct to deter competing sellers from undercutting. Markovits reasons that if for some reason it is costly to change a price once set (but why should it be?), oligopolistic pricing is very difficult to effectuate, because the costs of retracting a higher than competitive price make the seller who sets such a price highly vulnerable to being undercut by competing sellers. In these circumstances, says Markovits, oligopolistic pricing can occur only if the first seller threatens to retaliate at some later time against any competitor who takes advantage of his vulnerability or, what would have the same effect, promises a reward for not taking such advantage. Markovits believes that contrived oligopolistic pricing, unlike the "natural" variety, violates section 1 of the Sherman Act because the threat or promised reward creates a contract.<sup>20</sup> However, he offers no evidence or reason to believe that contrived oligopolistic pricing is at all common. He does not discuss the conditions under which threats of retaliation would be credible or explain why the costs of lowering a price once set, if high, would not simply deter a seller from raising his price above the competitive level in the first place.

I shall skip for a moment to the fourth part of Markovits' article where he explains why both natural and contrived oligopolistic pricing are allocatively inefficient.<sup>21</sup> Most economists would not consider the question interesting; they would assume that tacitly (as well as explicitly) collusive prices result in a misallocation of resources and leave it at that. However, because Markovits takes very seriously the problem of the "second best,"<sup>22</sup> he is unwilling to base antitrust policy on the traditional allocative objection to monopoly: that by raising price above the cost of production, the monopolist deflects some consumers to substitute products that actually cost society more to make, and only seem less expensive to the consumer because of the artificially high price of the monopolized product. The theory of the second best teaches that if, for example, the substitute product is also mo-

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19. See *id.* at 738.

20. See *id.* at 740-44. Markovits believes the threat of retaliation would violate § 2 of the Sherman Act. *Id.* at 740. But he never discusses the elements of a section 2 violation, so the basis of his belief is unclear.

21. See Part IV, *supra* note 1. See also *Checklist*, *supra* note 1.

22. The classic statement of the theory is Lipsey & Lancaster, *The General Theory of Second Best*, 24 REV. ECON. STUDIES 11 (1956).

nopolized, the elimination of monopoly in the first market and consequent fall in the price level may, by inducing an increase in the output of the first product relative to that of the second, produce a worse allocation of resources than if the monopoly had been left undisturbed, since the social cost of producing the second product may be lower than that of producing the first.

Troubled by the implications of the theory of the second best, Markovits suggests a number of respects in which monopoly or oligopoly pricing still may be said to reduce economic welfare. He also discusses, in a perfunctory fashion, certain ethical objections to the possible income-distribution effects of supracompetitive pricing. But he does not make the most straightforward argument to show that monopoly and oligopoly pricing impose significant costs on society apart from those resulting from substitution against the monopolist's product. This argument is that the lure of monopoly profits induces firms to expend resources on efforts to obtain a share of those profits. I do not refer to investments in producing, or producing more of, the product in question; the costs incurred in expanding production to take up the slack created by the monopolist's limitation of his output are not socially wasteful—except to the extent that the firms expanding production are less efficient than the monopolist. My argument centers on the extent to which firms may instead expend resources on forming cartels, concealing them from the government, or providing services that are not cost justified in terms of consumer demand—even though they may enable a firm to increase its market share and thus its profits.<sup>23</sup> Through such activities, monopoly profits are transformed into socially wasteful expenditures, and these expenditures, together with the expenditures of the government and others on trying to prevent or punish monopolizing, are social costs of collusive pricing that are unaffected by the theory of the second best.<sup>24</sup>

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23. As an extreme example of such private costs, assume that because of an international airline cartel a carrier obtains a pure monopoly profit of \$50 on every transatlantic seat that it sells. It would be willing to spend up to \$50 per passenger to attract passengers from its competitors and might therefore, for example, offer each passenger a meal that cost \$50 more to produce than the normal airline meal. Yet the meal might be worth only, say, \$5 more to the passenger, in which event the airline cartel would be imposing a social cost of \$45 per meal served.

24. See Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807 (1975). Markovits discusses one aspect of these costs of monopoly in his article, *Fixed Input (Investment) Competition and the Variability of Fixed Inputs (Investment): Their Nature, Determinants, and Significance*, 24 STAN. L. REV. 507 (1972). His term "fixed input competition" (and the related concept of quality-and-variety-increasing (QV) investment competition) refers to one form of service competition, and he points out that a market in which price competition is prevented will generate a socially excessive amount of this competition. It is unclear, however, why he confines his attention to a single aspect of the more general tendency of monopoly profits to be transformed into social costs and ignores the literature discussing the general tendency, such as Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft*, 5 W. ECON. J. 224 (1967). Incidentally, the Tullock-Posner analysis of the costs of monopoly undermines the income-distribution objection to monopoly that Markovits also makes. See Posner, *supra*, at 821.

As a detail, I reject the policy implications Markovits draws from the theory of second best, but since our disagreement over that point is unrelated to the issue of oligopolistic pricing, I do not want to pursue the point here.



The remaining question for Markovits, discussed in the third part of his article, is whether it is possible at reasonable cost to identify oligopolistic pricing so as to be able to punish it either under the Sherman Act or under an amended statute that would enable enforcers to reach the "natural" as well as the "contrived" form. This is the issue at the heart of the disagreement between Turner and myself, and Markovits disagrees strongly with both of us—with Turner for doubting that proof of oligopolistic pricing is feasible, with me for believing that the methods that I have proposed for proving such pricing are workable.

His criticism of my suggestions for proving tacit collusion is in the main simply an application of his first point, mentioned above: the danger of equating supracompetitive with collusive pricing. He notes, for example, that systematic price discrimination, which I have suggested could be used as evidence of collusion, might represent simply the exercise of the limited monopoly power possessed by one or several *individual* sellers in the market. Evaluated from this perspective, his criticisms can be summarized as a warning—which I accept—that economic evidence frequently is ambiguous. In addition, however, he apparently deems my tests fatally ambiguous because they do not discriminate between natural and contrived oligopoly pricing,<sup>25</sup> which, of course, they were never designed to do.

Having rejected the methods I proposed, Markovits—very briefly—suggests his own methods for establishing oligopolistic pricing.<sup>26</sup> His first method consists of determining what the defendants' highest nonoligopolistic prices could be, and then comparing them with their actual prices; if the former are below the latter, the trier of facts can conclude that the firms are guilty of collusion. This kind of proof seems a good deal more elusive than anything I have suggested. I was not surprised to find Markovits acknowledging its possible impracticality. To determine a firm's highest nonoligopolistic price in a particular market would require knowledge both of the firm's long-run marginal costs and of the elasticity of demand for its product. These are formidably difficult measurements to attempt to make in the litigation process.

Markovits proposes four allegedly less complicated methods of proving oligopolistic pricing. I was able to identify only two distinct methods. One consists of comparing prices charged by the alleged oligopolist in different markets, or at different times, in order to see whether the difference in actual price can be explained by a difference in the oligopolist's highest nonoligopolistic prices. The other consists of showing either that one seller had

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25. Markovits' criticisms of my suggested methods of proving collusion appear in *Part III, supra* note 1, at 319–29.

26. *See id.* at 310–14. Markovits devotes only a very small portion of his immense article to the central question of how to prove tacit collusion.

retaliated against another seller who had offered a lower price to the first seller's customer, or that the second seller had failed to offer a lower price to that customer when he could have done so. Both methods require a determination of the highest nonoligopolistic price that the seller could have charged in the market in question unless perhaps there is evidence of predatory pricing. We thus are taken back to Markovits' very first method of proof which he acknowledges may be infeasible.

### III. CRITIQUE OF MARKOVITS' APPROACH

#### A. *Individual versus Collective Power Over Price*

Markovits' article makes one worthwhile point, albeit it was Chamberlin's before it was Markovits':<sup>27</sup> it is descriptively inaccurate to divide the world of business firms into monopolists on the one hand and perfectly competitive firms on the other. Even in markets that are reasonably competitive, individual firms may possess elements or degrees of monopoly power. For example, there is probably effective competition among the producers of motion pictures. Yet every motion picture confers a bit of monopoly power, legally protected by the copyright laws, on the producer. It is for this reason, I assume, that systematic price discrimination, in the form of differential first-run and second-run pricing of motion pictures, has persisted long after the apparent cessation of express collusion among the producers.

Markovits is correct to note this limitation on using evidence of a higher than competitive price level, or of other noncompetitive pricing behavior, as a basis for inferring the existence of oligopolistic pricing. However, the distinction is not a decisive objection to the sorts of evidence that I have suggested; it is simply one more complication in the use of economic evidence, and I believe a manageable complication.

There are two possible sources of confusion between individual and collective monopoly power. The first is the failure to define the relevant market correctly. If the market is defined so broadly as to include distant as well as close substitutes, the market definition may conceal a firm that in fact has significant monopoly power because there are no close substitutes for its product, even though the firm has less than a monopoly share of the more broadly defined market. Observing symptoms of noncompetitive pricing in that "market" might lead the antitrust enforcers to believe that the firm was colluding with its competitors, whereas in fact it was simply exercising its individual monopoly power. Market definition is a serious problem in many types of antitrust cases; it would be a serious problem in a collusion case based solely on economic evidence.

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27. See E. CHAMBERLIN, *THE THEORY OF MONOPOLISTIC COMPETITION* (8th ed. 1962).

Second, even in a narrowly defined market, there may be firms that possess some monopoly power, in that a slight increase in price by one firm would not cause it to lose *all* of its sales to competitors. In other words, each firm does not face a perfectly horizontal demand curve. This sort of monopoly power, however, is unlikely to generate sufficiently gross evidence of monopoly to be detected by the inevitably crude methods of even an economically oriented antitrust enforcement program.

A simple formula should help in showing why "competitive advantages," to use Markovits' term, are unlikely to contribute significantly to supracompetitive prices. A profit-maximizing firm sells its output at the price that equates its marginal revenue (MR) to its marginal cost (MC). For a firm having some power over price (a "monopolist") marginal revenue is equal to  $P_m(1 - 1/E)$ , where  $P_m$  is the monopolist's price and  $E$  (expressed for simplicity as a positive number) is the elasticity of demand that he faces at that price. Since  $MR = MC$ , and since the competitive price in the market in question ( $P_c$ ) is equal simply to marginal cost,  $P_c = P_m(1 - 1/E)$ , which can be rewritten  $P_m/P_c = E/(E - 1)$ . This formula, which relates the ratio of the profit-maximizing monopoly and competitive prices to the elasticity of demand at the monopoly price, indicates that a firm that enjoys only a modest amount of monopoly power will not charge a price substantially higher than the competitive level. Suppose, for example, that the elasticity of demand at the monopoly price is 10, meaning (approximately) that a one percent increase in the price of the firm's product would lead to a 10 percent reduction in the quantity sold. Plainly, the firm has some monopoly power; if it had none, a one percent price increase would result in a 100 percent, not 10 percent, reduction in quantity sold. Yet the monopoly power that this firm possesses only allows it to charge a monopoly price 11 percent higher than the competitive price in the market. Such a differential is probably too small to be noticed by antitrust enforcers using the kind of economic evidence likely to be employed in a collusion case. Only gross departures from competitive pricing are apt to be swept within the net of an economically oriented antitrust enforcement program; such departures are unlikely to result from the activities of a single, noncolluding firm having a less than monopolistic market share—unless the market has been defined too broadly.

My conclusion is that if markets are carefully defined—an important qualification—it will be the rare case where observed noncompetitive pricing is due to the individual monopoly power of the firms in the market. Moreover, in a case where the plaintiff sought to base an inference of collusion on economic evidence alone, I would allow the defendant to rebut by showing that its noncompetitive pricing behavior was due not to collusion but to the possession of a lawful source of monopoly power, such as a

patent or copyright, or a very large market share. Experience with cases in which this defense was asserted would eventually reveal how important such factors were in explaining *substantial* departures from competitive pricing—the only kind, to repeat, likely to generate enough evidence to enable the plaintiff to make out a *prima facie* case of illegality in the first place.

### B. *Markovits' Methods of Proving Tacit Collusion*

More questionable than Markovits' criticisms of *my* suggested methods of proving tacit collusion is his insensitivity to the difficulties involved in using *his* suggested methods. I would find his article more persuasive if it said that since in his view it is impossible to distinguish between individual and collective monopoly power, Turner was right in arguing that tacit collusion is beyond the effective reach of conduct-oriented legal remedies. Markovits does not say this. Instead, he rejects the tests for tacit collusion that I suggest using on the ground that they are ambiguous,<sup>28</sup> and then goes on to propose alternative tests that are even more ambiguous.

His idea of directly trying to measure the highest nonoligopolistic price that a seller could charge surely is unrealistic, as he himself comes close to conceding. His allegedly simpler methods of proof, involving comparative price evidence, are no more realistic; they are in fact nothing more than comparisons of highest nonoligopolistic prices. His suggestion that anti-trust enforcers seek evidence of retaliation and failure to undercut a competitor requires in the one case proving predatory pricing and in the other measuring, once again, the highest nonoligopolistic price. Proof of predatory pricing is, to be sure, relatively straightforward compared to the comparative-price evidence that Markovits suggests, but it would be a drastic abridgment of the legal remedies for tacit collusion to apply them only in the presumably very rare case where one of the colluding sellers had used predatory price cutting or the threat thereof to enforce the collusive agreement. Furthermore, as mentioned earlier, Markovits' methods of proof might overlook cases where individual firms' "competitive advantages" resulted from a tacit division of markets among the firms.

### C. "Natural" versus "Contrived" Oligopolistic Pricing

The most dubious point of all urged in Markovits' article is his suggested distinction between the legal treatment under section 1 of the Sherman

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28. In part, as mentioned earlier, he deems my tests ambiguous because they do not distinguish between natural and contrived oligopolistic pricing, a distinction on which he believes, erroneously as I argue *infra*, the application of the Sherman Act to oligopolistic pricing turns. Since he would like to see the Act amended to forbid natural as well as contrived oligopolistic pricing, this criticism of my tests is of no importance to his economic analysis.

Act of "natural," and that of "contrived," oligopolistic pricing.<sup>29</sup> I know of no basis in statute, precedent, or policy for limiting section 1 to contracts that but for antitrust policy would be enforceable under the common law or the Uniform Commercial Code. Certainly Markovits offers no reason why he thinks it worthwhile asking whether a price fixing conspiracy might fail as a contract for want of consideration, or mutuality, or any of the other technical requirements of the law of contracts. When in my 1969 article I compared tacit collusion to the unilateral contract,<sup>30</sup> it was not in order to claim that tacit collusion might create enforceable obligations in a society that had no policy against collusion, but simply to point out that there were sufficient analogies between unilateral contracts and tacit collusive arrangements to enable the courts to include the latter within the broad scope of section 1 without thereby doing violence to the statutory language. Turner himself has acknowledged that the issue with regard to the lawfulness of tacit collusion under section 1 is not whether it can be described as an agreement but whether it should be treated as an unlawful agreement, a matter of antitrust policy.<sup>31</sup> I am astonished that Markovits should treat the problem as one of contract law rather than of antitrust policy.

If I am correct that there is no basis for different legal treatment of natural and contrived oligopolistic pricing, then the distinction has no utility whatsoever. The only significance that Markovits ascribes to it is legal; he does not suggest that distinguishing between natural and contrived oligopolistic pricing helps to illuminate differences in the observed behavior of business firms—indeed, he does not discuss any such differences.

Markovits does not even suggest that "contrived" oligopoly pricing is a common phenomenon. One imagines it is not. It requires both that a seller have difficulty changing a price once set, and that he be able to practice predatory price cutting effectively. The joint satisfaction of these conditions is probably rare; in any event, Markovits has made no effort to establish that it is common. I am surprised that he should have devoted so many words to trying to demonstrate the illegality of a practice which, for aught that he has shown, does not exist in the real world.

To summarize, Markovits' immense article contains a useful reminder that noncompetitive behavior is not always a result of express or tacit collusion; it may be the result of the individual monopoly power of firms not ordinarily regarded as monopolists. If there are other valuable insights in the article, they have eluded my understanding.

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29. See text accompanying notes 17-20 *supra*.

30. See Posner, *supra* note 2, at 1576.

31. See Turner, *supra* note 7, at 665.