

REFLECTIONS ON COMPETITION POLICY

Franklin M. FISHER
Massachusetts Institute of Technology

This paper draws on American antitrust experience and considers how economic analysis informs and assists competition policy. The issue of structural versus conduct standards runs throughout the discussion. Single-firm monopoly cases and policy towards oligopoly and mergers are discussed. Economic analysis has much to contribute, but that analysis must be properly understood. Superficial attempts to use economics can be positively harmful. Attempts to use numerical measures such as market share, profits or concentration to detect monopoly structure are not successful. Similarly, quick tests for predatory conduct can lead to confusion.

1. Introduction: Structure vs. Conduct

In writing on competition policy, I shall draw heavily on a century of American experience. I shall do so, not because that experience has been one of unmixed wisdom and success –far from it– but because that is the experience with which I am most familiar.

American antitrust policy (as American competition policy is called for historical reasons) is largely determined by judicial interpretation. In the American legal system, laws are expounded by judges given the nature of the case before them. This has been true of the antitrust laws (which one chief justice called «as broad as the Constitution»). But I do not plan to give a history of court cases; rather, I shall be asking how economic analysis can or should inform public policy, including legal standards.

The first issue in competition policy is a basic one. Should pro-competitive laws be aimed at preventing certain forms of behavior or at preventing the development of certain kinds of market structures? This issue runs through the entire history of American antitrust policy and must inevitably be faced in any thoughtful policy formation.

The conduct vs. structure question is easy to exemplify. Suppose that a firm grows and acquires all or nearly all of the market, attaining monopoly power. If no single act performed by the firm is itself obviously anti-competitive, then a behavioral standard will allow this to happen. A structural standard, by contrast, proceeds from the view that monopolies are bad even though monopolists may be good people. On a structural standard, a monopoly outcome is to be prevented because of the allocative distortion

that monopoly produces, even though the monopoly firm has done no particular wrongful act.

On the other hand, there are plainly cases where a behavioral standard is appropriate. Suppose that there are several firms in a generally competitive setting. Suppose that they agree to fix prices. In such a case, a structural standard would not apply, but it would be unreasonable for competition policy to allow such behavior.

These examples, of course, are too simple. Competition policy would be easy were it always easy to identify anticompetitive structures or anticompetitive acts. In fact, as we shall see, it is not always (or perhaps even usually) easy, and competition policy is not easily reduced to a few mechanical rules.

2. Single-Firm Monopoly:

2.1. *The Alcoa Decision*

The area in which the structure vs. conduct problem arises most often is that of single-firm monopoly, and I shall begin with that topic. Of necessity, my historical sketch of the judicial history of the problem is a superficial one.

The first thirty years of antitrust policy (from 1890 to 1920) involved several large single-firm monopoly cases (called «Section Two cases» because they are brought under Section Two of the Sherman Antitrust Act). None of these, however, forced the courts to deal directly with the structure vs. conduct issue. In each case, the courts found (rightly or wrongly) both that a monopoly structure was present and that the defendant firm had committed anticompetitive acts.

The Supreme Court first began to face the issue in the *United States Steel* case decided in 1920¹. U. S. Steel was the largest American steel corporation, having been formed by merger around the turn of the century. By the standards of the day, it was a very large and powerful firm, but the Court did not find that it had engaged in anticompetitive conduct. In view of that, the Court declined to find U. S. Steel in violation of the Sherman Act, observing that «the law does not make mere size an offense»².

That dictum can be read in two ways. The first is that the Court was refusing to apply a purely structural standard. The second is that size alone does not produce a monopoly structure. I think the first reading is the correct one. In view of later history the second interpretation presumes too high a degree of economic sophistication on the part of the 1920s Court.

¹ *United States v. United States Steel Corporation, et al.*, 251 US 417 (1920).

² *Ibid.* at 451.

Great single-firm monopoly cases do not arise very often, and here matters more or less stood until the *Aluminum Company of America (Alcoa)* case, brought in the 1930s and decided (on liability) just after World War II³. Because the case took so long a time to get through the court system (or, at least, what seemed like so long a time back then), a majority of the Supreme Court had served in the Department of Justice while the case was pending. As a result, the Supreme Court could not hear the case itself and referred it for decision to a special panel of the Court of Appeals for the Second Circuit. The opinion, which came to have major importance, was therefore written by Judge Learned Hand, one of America's great jurists who never received a Supreme Court appointment.

Judge Hand attempted to deal with the structure-conduct issue. In essence, he held that a firm could violate the anti-monopoly provision of the law without ever doing any single act that was wrongful in itself. Instead, a firm would be held in violation if two things were true: First, the firm had to have monopoly power; second, the firm had to have achieved or maintained that power by deliberate action –by means other than «superior skill, foresight, and industry.»

What does such a standard mean? To answer this, we need to look at what monopoly power really is and at how Judge Hand phrased his opinion. This means first examining the problems with a purely structural test for monopoly.

2.2. Monopoly Structure

Monopoly power is the power to charge prices above competitive levels (or, equivalently, offer products below competitive quality) without having your business taken by competitors. Most real firms have a little such power; monopolists have it to a high or long-lasting degree.

So far, so good. The problem is how to *tell* when a given firm has monopoly power. This is where Judge Hand's phraseology became unfortunate and where economic analysis becomes important for competitive policy.

Every student of elementary economic theory learns that a monopoly occurs when a firm has one hundred percent of a market, there are barriers to entry, and there are no close substitutes. In practice, however, there are always some forms of substitutes, entry is seldom impossible, and the firm in question has a large, but not a one hundred percent share of something (exactly what turns out to be a serious issue).

It is very tempting to look for a simple test and, especially, to look at market share. After all, if a firm with one hundred percent is a perfect monopoly, a firm with a high enough share must be close to being a perfect monopoly –close enough to count.

³ *United States v. Aluminum Company of America, et al.*, 148 F. 2d 416 (1945).

This temptation must be resisted. Aside from the difficulties associated with defining the «relevant market» in which to measure share (I shall have more to say about this a bit later), market share is only a very crude indicator of monopoly power. That indicator operates as follows. Where a firm's share is small, it is likely not to require much effort for its competitors to take away its business should it attempt to charge supra-competitive prices. Where the firm's share is large, on the other hand, taking away its business may require very large expansion or entry.

Notice, however, that the emphasis is on what happens to share if the firm attempts to charge supra-competitive prices. (This has to do with the elasticity of the demand curve facing the firm). The emphasis is *not* on share itself.

This is as it should be. Consider a firm which is more efficient than its rivals and uses that efficiency to charge lower prices. Such a firm will quickly gain a large market share, but one ought not to penalize it for so doing. A firm that gains and keeps a large market share *solely* by being more efficient in this way has no monopoly power. Monopoly power is the ability to keep a large share *without* lower prices and better products.

Judge Hand was quite aware of this, but he made the mistake of phrasing his decision in a way that lent itself to misunderstanding. Although he observed that monopoly power and market share were not equivalent, he essentially made market share the touchstone test for monopoly power, laying down certain quantitative standards based on the facts of the *Alcoa* case. As we shall see, this led to endless problems in later litigation.

Having made market share the test of monopoly power, Hand then had to deal with the issue of what to do in cases such as that of the efficient low-priced firm. Here, instead of stating that such a firm had no monopoly power, he turned to a behavioral standard. As already remarked, a firm that had attained its market share solely through such things as superior skill or efficiency was not to be held liable under the Sherman Act.

Hand was entirely conscious of what was involved here. He stated that «the successful competitor, having been urged to compete, must not be turned upon when he wins»⁴. In saying this, he described a central problem for the formation of sensible competition policy.

Competition policy has an incentive effect. When certain structures or behavior are proscribed by the authorities, the actions of firms are, and ought to be affected. It follows that the construction of competitive policy must be careful lest competitive behavior be directly or indirectly discouraged. This is likely to be a particular danger when authorities attempt to lay down a simple set of tests or rules. Such rules may be useful for their clarity but risk doing positive harm if they are overly simple.

⁴ *Ibid.* at 430.

It is easy to give an example here. Following the train of thought that makes market share the test of monopoly power, it has sometimes been suggested that one ought to have a rule that no firm can have more than a certain percentage of a market (say fifty percent). Aside from the difficulties involved in determining market share, it is easy to see that such a rule has perverse incentives as efficient firms grow larger. That is why Hand carved out an exception to the market-share-alone-is-enough standard.

So far as I know, no country has ever adopted so simple (and perverse) a rule (although the late U. S. Senator, Philip Hart, repeatedly proposed legislation involving it some years ago). But at least one rule that has the same perverse effects in milder form does exist. I refer to the standard used in the EEC which focusses on abuse by a «dominant firm» and defines «dominant» in terms of market share (as I recall, a share greater than thirty percent). Putting aside the exact meaning of «abuse», such a rule makes it clear that firms with more than a certain market share will be treated differently and examined more closely than smaller firms. Like an absolute prohibition against high shares, but more softly, this provides a disincentive to efficient, competitive behavior.

a) MARKET DEFINITION AND MARKET SHARE.

The problem is greatly exacerbated by the fact that the clarity of a market share test is quite illusory. In most real cases, the measurement of market share is not easy because it is far from clear just what one should mean by «the market». Following *Alcoa*, this has led to a plethora of often bizarre and fruitless argument.

The difficulty arises because it is almost never true that the products of the alleged monopolist have no substitutes. Rather, different goods can substitute for the alleged monopolist's products to a greater or lesser degree. Are such goods «in» or «out» of the market? This will matter if one is going to rely on market share tests.

I believe that the correct way to think about this problem is as follows. In a monopoly case, we are interested in those products and firms whose presence can constrain an attempt by the alleged monopolist to charge supra-competitive prices. Another way of describing this is to say that we are interested in those products and firms that the monopolist must take into account when setting prices.

One set of products that constrain the alleged monopolist's behavior are those to which customers can turn and use in place of the monopolist's products. This phenomenon is called «demand substitutability». A second set of constraints comes from «supply substitutability» —the ability of other firms not currently making demand-substitutable products to do so in the even of an attempt to earn supra-competitive profits.

An example may help. Suppose that there is only one manufacturer of red paint. Then demand substitutability is limited by the extent to which consumers are willing to use other colors. But, even if there is a large group of customers determined to use red and nothing else, the red-paint manufacturer is not a monopolist if other paint manufacturers can easily produce red paint. To count the market as consisting only of red paint and then to count the red-paint manufacturer's share as one hundred percent is to miss the point of what one is trying to do.

Now, it will not have escaped attention that supply substitutability and ease of entry are very, very closely related. Indeed, the statement that certain firms produce supply substitutable products and the statement that those firms would find it easy to enter differ only in degree and not in kind. That difference does not matter if one is going to be careful about what follows. The conclusion to be drawn in the paint example is the same whether one counts manufacturers of different color paints as already in the market or counts them as poised on the outside with entry very easy. In either case, there is no monopoly power.

The difficulty comes when the exercise is artificially pointed at the calculation of market share as the test of monopoly. Here one gets quite different conclusions depending on whether one defines the market to exclude paints other than red or includes such paints in the market. This problem arises when the test becomes important for its own sake (as legal tests have a way of doing), and one forgets the analysis that lies behind it.

The fact that the market definition question is often not susceptible of any precise answer shows up again when we consider another problem, the role of relative prices. Here the classic example is that of the *Cellophane* case, decided by the Supreme Court in the mid-1950s⁵. This is the classic case on market definition.

In *Cellophane*, the issue was the extent to which other forms of flexible wrapping paper were substitutes for cellophane, a particular transparent type of paper. The Supreme Court found evidence of such substitution and concluded that other flexible wrapping papers were in the same market as cellophane. That conclusion was heavily criticized by a number of economists⁶. They pointed out that the facts suggested that DuPont (the maker of cellophane) had raised its price up to the point at which customers began to turn to other wrapping papers. At lower, still profitable prices for cellophane, those other papers would not have been seen as acceptable substitutes. The economic commentators concluded that this meant that flexible wrapping papers were *not* in the same market as cellophane.

⁵ *U. S. v. E. I. DuPont de Nemours and Company*, 351 U. S. 377 (1956).

⁶ Stocking and Mueller (1955); Kaysen and Turner (1956), p. 102; Posner (1976), pp. 127-8.

I believe both sides in this debate to have been in error –largely because the question asked, that of market definition, is not a well-posed one. The facts are that other wrapping papers did not constrain the price of cellophane below a certain level and that, above that level, they did constrain it. Once one has said that, one has said all there is that bears on the monopoly power question. One can only suppress information by trying to press it on the Procrustean bed of market definition in which the other wrapping papers are either in or out. In effect, the other papers were in the same market as cellophane at high cellophane prices and not at low ones. To simplify further than that is to lose the point.

As I have already suggested, however, concentration on the market definition question in an effort to meet Hand's quantitative standards for market share has become a major piece of any American monopoly case (and, indeed, of other types of cases as well). The debate over market definitions has ranged from the reasonably sensible to the truly bizarre. I mention only two examples drawn from the many cases in which I have been personally involved.

The first would be simply amusing if it were not real. Lady Grace is a chain of stores selling women's intimate apparel and foundation garments. They lost their lease in the South Shore Plaza Shopping Mall, a large shopping center in the Boston area, and promptly sued the mall operator under the anti-trust laws (that being the American way). They claimed that the market consisted only of shops selling ladies' lingerie in the South Shore Plaza Shopping Mall and that the mall operator was conspiring with Victoria's Secret (a rather more upscale purveyor of lingerie) to monopolize that market.

Such a claim was, of course, silly. The notion that the only shops that constrained Victoria's Secrets pricing in the South Shore Shopping Mall were the other specialty shops in the mall ignored the possibility of shopping elsewhere and also the enormous lingerie departments of the non-specialty stores located in the mall. But the plaintiff maintained a market definition restricted to the narrow business that its own particular shop defined itself as being in.

That was a private suit, as is permitted under the American antitrust laws. A far more important case was one brought by the Department of Justice (with companion private suits), the antitrust case against IBM brought in 1969 and finally withdrawn in 1982 without a decision by the trial judge⁷. I was IBM's chief economic witness in the case and have written about it very extensively⁸, so I shall not discuss it at length here.

In the IBM case, the government claimed the market to consist of «general-purpose, electronic, digital data-processing equipment optimized

⁷ *United States v. International Business Machines Corporation*, Docket Number 69 Civ. (DNE) Southern District of New York.

⁸ Fisher, McGowan, and Greenwood (1983).

for commercial purposes». I shall not linger over this except to point out that the last phrase («optimized for commercial purposes») was designed to remove from the market those areas (scientific uses) in which IBM had been relatively unsuccessful. In any event, after being faced by testimony from their own witnesses that every modern computer was «general purpose», the government finally defined the term to mean only systems with very specialized capabilities. (Indeed, so specialized was the definition that, in at least one version, IBM itself made no systems that met it). Only Burroughs, Univac, and Honeywell machines were said to be in the market.

Now, eleven years after the end of the case, the same people who promulgated that market definition claim that events in the computer industry prove they were right (Stewart 1993). They claim that the fact that IBM has suffered considerably from competition from other companies and other forms of computing (smaller machines and distributed processing) means that it was just a sluggish monopoly, slow to respond.

That claim is absurd. If the government's market definition had been correct, IBM would not have had to worry about such forms of competition; such forms were *outside* the market. In fact, the history of the computer industry since the case shows how wide the market was and how competitive it is in fact.

The lesson here is that monopoly power is not easily measured. Market share tests, in particular, are not so simple as they appear. The attempt to find a simple test will often not succeed in doing simple (or any other kind of) justice.

That lesson extends beyond the market-share-market-definition example. Economic analysis does not provide a simple structural test for monopoly. Worse, it is often easy to misunderstand and misapply what economic analysis does provide.

b) PROFITS

The other leading example here is that of profits. Here there are two issues. One is simply that of measurement. For reasons that it would take too long to go into, accounting profit rates as ordinarily reported do not in fact measure economic rates of return⁹.

The other reason is more fundamental. It is true that *in long-run competitive equilibrium* there are no economic profits. It is a vulgar error to suppose that this means that all profits—even lasting over time—must signal monopoly. It is simply not true that firms in competitive industries earn no profits. Profits are the carrot (and losses the stick) by which the invisible hand guides the economy. To suppose that because profits are zero in long-run competitive equilibrium they must always be zero in competition is to fail to understand the fundamental driving force of competition.

⁹ For an extended discussion, see Fisher (1990-91), Chapters 5 and 6.

c) BARRIERS TO ENTRY

Does the fact that there is no simple structural test for monopoly mean that a structural standard cannot be used? Not at all. It is possible to identify monopoly power, but this requires a serious study of the industry rather than reliance on one or two apparently easy-to-measure items. In particular, it requires a study of barriers to entry –more generally of the ability or inability of actual and potential competitors to expand if the alleged monopolist attempts to charge supra-competitive prices.

The subject of barriers to entry, I might add, is one of the many that are easy to get wrong. Merely because an industry is unattractive to entrants does not mean that there are barriers to entry. Fierce competition is not a barrier. Rather, a barrier to entry exists if there is something that would prevent outside firms from entering *while incumbent firms earn supra-normal profits*.

In this connection, I cannot resist telling the following story, especially appropriate for an American publishing in Spain five hundred years after the voyage of Columbus.

In 1986, two United States airlines, Northwest Airlines and Republic Airlines, proposed a merger. That merger (which ultimately took place) was opposed by the Department of Justice's Antitrust Division. Among the reasons for opposing the merger was the claim that competition with the merged airline would require another airline to have a hub (essentially a large connecting airport facility) in the city of Minneapolis, Minnesota, located in the northern part of the central United States. Putting aside the question of whether that was true (It wasn't), let's look at what the Division said were the barriers to entry into acquiring such a hub. These were explicitly not economies of scale. Rather, the first supposed barrier was that the merged Northwest would operate so many flights that an entering hubbing airline would find it unprofitable to compete. But this is not a barrier. The issue is *not* whether an entrant could come in if the merged airline kept producing the pre-merger output but rather whether entry would be possible if the merged airline cut back production in an attempt to raise prices.

The second reason given as a barrier to entry was that Minneapolis is a poor location in which to have a hub because it is too far north to provide efficient connections between East and West Coast cities. This cannot be a barrier to entry either. It is not a barrier to entry that a business is unprofitable for everyone, and, if Minneapolis would be a poor hub for an entrant it would be so for the merged airline.

In fact, Minneapolis is not a poor place for a hub. Its location appears too far north only if one looks at a Mercator projection –a wall map. If one looks at a globe, one finds that Minneapolis lies very close to the great circle routes between East and West Coast cities. In fact, it is second only to

Chicago's crowded airport as a large city near which to have such a hub. This fact came as a surprise to the Antitrust Division, leaving one with the inevitable conclusion: When it comes to the analysis of barriers to entry, the Antitrust Division quite literally believed that the earth is flat.

2.3. *Monopoly Behavior: Predatory Pricing*

If a structural standard applied to monopoly requires more than a simple test, is the same thing true of a behavioral standard? In other words, are there certain acts which monopolists or would-be monopolists are likely to engage in and which can easily be identified as anticompetitive?

Unfortunately, the answer here is «No», and one meets the same problem in trying to formulate a behavioral standard that we met when discussing a structural one. Competition policy must be careful not to *discourage* efficient competitive behavior. The problem can be best illustrated by considering predatory behavior in general and predatory pricing in particular.

Predatory behavior occurs when a firm deliberately chooses an action that is not profit-maximizing without considering the supra-normal profits to be earned when competitors are driven out. Since firms often make mistakes and end up losing money, it is well to add that, to be predatory, an action must also *be* profit-maximizing when one does consider the long-run supra-normal returns to be made after competition has been damaged.

This seems simple enough –and, in principle, it is– but identifying such cases in practice is not always as simple as it appears. Consider, in particular, predatory pricing. Apparently, to be predatory, a price must be below costs with the action making sense because of the monopoly profits to be earned once competition has been driven out and prices raised to supra-competitive levels¹⁰. (Note the possibility that monopoly might be achieved in this way if there are other barriers to entry).

The question that naturally arises is that of what it means for prices to be «below costs». Here it is crucial to note that the costs in question must be those of the alleged predator. Rivals are quick to complain and allege predation when prices are cut below *their* costs, but that, standing alone, is irrelevant. Under competition, inefficient firms will indeed see prices cut below their costs. That forces them to become efficient or die. That is how competition works and it is what a pro-competitive policy should encourage. This means that a policy against predatory pricing must be careful not to chill the competitive process itself.

Moreover, even the comparison of the alleged predator's price to its own costs must be done with care. Since 1975, many courts in the United States have adopted some version of the so-called «Areeda-Turner» test

¹⁰ Under some circumstances, the recoupment can come in a different, but related market, but I shall stay with the central example in the text.

(Areeda and Turner 1975). In that test, price is compared to average variable cost and prices below that level are presumed predatory. Properly understood, that is a reasonable standard for the first prong of the test for predation (the «below cost» part), but, of course, the key lies in the words «properly understood».

Areeda and Turner proposed average variable cost as a standard because they believed that one would seldom be able to estimate marginal cost. Obviously, marginal cost is the preferred alternative; units of output that are sold below marginal cost are units on which the firm is losing money. Average variable cost makes sense both because it *may* lie close to marginal cost and because the simple theory of the firm tells us that firms will shut down rather than produce at prices below average variable cost.

Problems begin to arise when courts or antitrust authorities (or private plaintiffs) misunderstand the genesis of the test and begin to apply it in a mechanical manner. This is particularly so when the application involves a firm producing multiple products where it requires considerable sophistication to understand what one means by «average variable cost». For, in such cases, «average variable cost» is undefined unless one defines other outputs as negative inputs and the choice to make the given output as involving opportunity costs.

Two related examples may make this clear. Airlines typically sell seats on the same flight at different prices. To simplify greatly, one set of seats is reserved for passengers who cannot commit to the journey far in advance. I shall refer to such passengers as «business passengers». Another set of seats is sold to «leisure passengers» –passengers with more flexible schedules¹¹. Business fares are usually considerably higher than leisure fares.

A few years ago, a tour arranger called «International Travel Arrangers» («ITA») sued Northwest Airlines. Among its claims was the allegation that Northwest had predatorily priced on certain flights because it had priced its leisure seats at a particularly low price –below average cost said ITA.

Now, there can be no question but that this was true in *some* sense: Had Northwest sold *all* the seats on the flights in question at the low price, the flights would have been unprofitable. Further, one might claim that the costs in question were all variable; after all, had no passengers flown, there would have been no flight.

The problem, of course, is that this is superficial nonsense (and was eventually seen to be so by the courts)¹². Northwest was not producing a

¹¹ Of course not all passengers with inflexible schedules are flying on business, and some business people fly on leisure fares. The terms are used only for mnemonic convenience.

¹² *International Travel Arrangers v. NWA, Inc.*, 1993 U. S. App. LEXIS 7882 (8th Cir. 1993).

single output –leisure travel. Rather the low-priced seats were being sold to fill up the plane on which business travel was already being sold. If one steps back from mechanical calculation of average costs and remembers the purpose of the test, then it is plain that the calculation proposed by ITA was irrelevant. Because the flights were going to operate for business travelers in any case, Northwest's only choices were flying on business, and some business people fly on leisure fares. The terms are used only for mnemonic convenience, between pricing the leisure seats low enough to attract passengers and allowing those seats to fly empty. The marginal cost of carrying an additional passenger on a flight that will operate in any event is very, very small. It was profit-increasing, not predatory for Northwest to sell the seats at prices above those low costs rather than earning no revenue from them whatever.

Note that it is *possible* to express this in terms of average variable costs. The output involved was low-priced passengers. The costs associated with flying the airplane were *fixed* so far as that output was concerned. The only *variable* costs were those associated with extra passengers (baggage and reservation handling, meals, and so forth). The prices involved were above those costs. The difficulty is not that the test used is wrong; it is that one must be fairly sophisticated to understand how to apply the test.

Now consider a second example. In the Spring of 1992, American Airlines, the largest air carrier in the United States, announced what it called «Value Pricing», but what it referred to internally as «Radical Pricing». This involved a drastic lowering of *business* fares, so drastic that it could not reasonably have been believed that most flights would be profitable. Indeed, in the ensuing months, that action, reinforced by later fare actions led American and other airlines to lose a great deal of money. Two airlines, Continental Airlines and Northwest Airlines sued American for predatory pricing, and the case was tried to a jury in the summer of 1993. (The jury found for American). I appeared as a witness for the plaintiffs.

American's lawyers, of course, made the same argument that I gave in the ITA case. (Indeed, they quoted me). They pointed out that the marginal cost of flying an additional passenger is far below the lowered fares; hence, they argue, the fares cannot have been predatory.

But, of course, this is wrong. Unlike the ITA case, we are now considering prices that affect all the seats on the plane –in particular, prices that affect the business passengers without whom the plane would not operate because it would be unprofitable. Here the marginal decision is not whether to sell the seat at a low price or have it fly anyway. Rather the decision is whether to operate the plane at a profit– to sell the seats to make money or to fly the entire plane (or operate the entire system of the airline) at a loss. In terms of the average variable cost standard, now the costs that are variable are *all* the costs associated with flying the plane (and the market arrangements are such that even some or all of the capital costs can be so counted).

But it is only confusing to attempt to cast this into the apparently simple mold of the Areeda-Turner test. American made a deliberate decision that it must have known would cost it a great deal of money. It charged fares that could not possibly be sustained in the long run, fares well below those which competition would have enforced. Provided that American's action could reasonably have been expected to pay off because of later supra-normal profits to be recovered after the destruction of competition, this was a predatory act. (I believe this to have been the case). The danger here is that courts, anxious to fit this case into the mold of a standard test will misapprehend the point of the test and misapply it.

I must not leave the subject of predatory pricing without discussing the second prong of the true test –the destruction of competition and the consequent profits. I do so because, even though the Supreme Court (as we shall see) has been sensible about this, there is still a tendency to look only at the cost part of the test, which deceptively appears to be easily applied.

The most famous modern case that bears directly on this aspect of predation is the *Matsushita* case decided (on summary judgment) in 1986¹³. In *Matsushita*, the plaintiffs charged that various Japanese electronics firms had conspired to price television sets predatorily low with the object of driving American manufacturers (such as the plaintiff) from the market. Apart from other difficulties with such a theory, the Supreme Court pointed out that the predation phase lasted for so long that rational firms could not expect to recoup their losses. Hence, whatever the cost test would have said, predation made no sense.

A second example comes from the IBM antitrust case. Here, the government alleged that IBM had (among other things) predatorily priced a set of computers known as the 360/90s. These were the top of the line computers introduced in the mid-1960s. The Antitrust Division argued that the 360/90s were priced predatorily low in order to damage Control Data –then putting out its major second-generation large scientific machine, the 6600.

According to the Antitrust Division, IBM had two internal forecasts as to the number of placements of 360/90s that would be made. The first of these estimated that there would be 15 such machines and that the program would then be unprofitable. The second estimated that there would be 24 machines and the program would then be profitable. The Antitrust Division claimed that the second forecast was a fake, produced to satisfy the legal department and that IBM's true expectations were revealed by the first forecast of 15 placements.

Without going into the details of IBM's accounting system, it is clear that something is wrong here. Suppose that the Antitrust Division were correct.

¹³ *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U. S. 574 (1986). For a more extended discussion, see Fisher (1990-91), Chapter 8.

Then expansion of output from 15 to 24 would turn a loss into a profit. Evidently, it must be the case that the price of the 360/90 exceeded its marginal cost. Moreover, it must be the case that the supposed losses on the smaller output were due to large fixed costs. On the Division's theory, it would have been even more predatory for IBM to have placed *zero* 360/90s and taken a bigger loss. That would surely have swept Control Data from the field!¹⁴

In fact, IBM forecast that only 72 large scientific machines would be placed. It therefore cannot have hoped to drive out Control Data by placing 24 machines, let alone by placing 15. Indeed, Control Data's sales and profits on the 6600 exceeded its own forecasts and goals. It takes no more than a little common sense to realize that predation is not a likely explanation here.

Similar statements are true of other behavioral tests. It is typically not the case that simple-appearing tests are in fact simple. More important, they are seldom adequate. As with a structural standard, what is required is informed and detailed investigation.

3. Oligopoly

3.1. *A Structural Standard: Mergers*

The same issues arise again when we consider policy towards oligopoly. Here, indeed, it is difficult to have a structural standard at all. This is so for more than one reason.

To begin, considerations of fairness will often make a structural standard difficult. Consider the following. A firm behaves normally and competitively. Because of the actions of *other* firms, however, the industry structure becomes one of tight oligopoly making non-competitive results likely. It seems quite unfair to penalize the first firm or, indeed, to require it to change or be broken up.

On the other hand, what about a structural policy that primarily affects those firms whose actions caused the tight oligopoly to develop? This seems fair, but there are still substantial difficulties.

The first of these is the same as one we encountered when discussing monopoly. Growth in firm size through efficient competition is not to be discouraged. Moreover, in industries with economies of scale, it will often be the case that there is no efficient way to restrict firms from growing internally and an oligopoly from naturally developing. (This is likely to be a problem of greater practical importance than in the parallel case of natural monopoly).

¹⁴ There is another issue as to whether it was predatory for IBM ever to undertake the 360/90 program at all, but discussion of this would take too long. See Fisher (1990-91), Chapter 7.

Note, however, that this difficulty applies mainly to internal growth. One might restrict the ability of tight oligopolies to form through mergers, and, indeed, merger policy is about as close as one can come to a structural standard in the case of oligopoly¹⁵.

I do not mean to suggest, however, that merger policy is without problems –far from it. For one thing, where economies of scale produce a natural oligopoly, successful firms may very well buy out unsuccessful ones. Preventing this is futile. Hence merger policy must allow for the possibility that the merging firms will gain efficiency or that the acquired firm will disappear in any case.

But the principal problem with a structural merger policy is different and far greater. It is the principal problem with any structural policy towards oligopoly. Any such policy supposes that we can recognize a tight oligopoly structure when we see it –and do so in a fairly simple way. This is not the case.

Economic analysis certainly has something to say on the factors that are likely to make oligopolistic rationality and supra-competitive pricing occur. Fewness of numbers and high concentration, simplicity of the product, the ease of detecting cheating on an explicit or implicit agreement, and so forth, form a familiar list.

But that list does not lead to precise or simple tests. How few is few? How concentrated does an industry have to be in order for oligopolistic cooperation to take over? We simply do not know the answers to these questions, and, indeed, we know that the answers are not simple ones. How concentrated an industry must be for oligopoly results to appear certainly depends on such things as the nature of the product and even the history of relationships among the firms. There is no simple mapping that taking structural elements into results.

Indeed, to make matters worse, modern economists are not even working on this problem in useful ways. Modern game-theoretic treatments of oligopoly overwhelmingly tend to be studies of what *can* happen in various simplified contexts –formalized anecdotes, as it were. They do not tell us very much about predicting what *must* happen from an examination of structure and context.¹⁶

This has not stopped designers of merger policy from attempting to use simple structural tests. Since 1982, United States merger policy has been organized in terms of the Department of Justice's merger guidelines which set forth circumstances under which a merger is likely to be carefully studied.¹⁷

¹⁵ Of course, merger policy can also form part of a structural policy towards monopoly. I ignore this in the ensuing discussion.

¹⁶ See Fisher (1990-91), Chapter 12 for a fuller discussion.

¹⁷ There were earlier guidelines, but 1982 marked the point at which the current policies essentially took shape. For a more extended discussion of merger policy, see Fisher (1990-91), Chapter 2.

Those guidelines run in terms of market concentration, more specifically, in terms of the Hirschman-Herfindahl Index (HHI) defined as the sum of squares of market shares multiplied by 10,000¹⁸. A merger which raises the HHI by 100 points in a market with the HHI already at 1800 is likely to be opposed (unless there are extenuating factors), and there are other breakpoints similarly defined.

One problem with such a test we have already encountered. Before the HHI can be computed, the «market» must be defined, and, as we have seen, this is not a truly well-posed issue. Here the guidelines do at least an adequate job, defining the «market» as the minimal collection of firms that, if they colluded, could profitably raise prices by five percent for some period of time. This definition has some problems but at least focusses on the constraints on the proposed merged firms.

The problem to which I want to call attention now, however, is not this one. It is the fact that there is no basis whatever for supposing that a particular level of the HHI (1800 or anything else) is in fact the breakpoint between competitive and oligopolistic behavior. Indeed, it is obvious that such a breakpoint cannot be the same in all industries. Nevertheless, the fact that the antitrust authorities use such a standard has an immense impact on which mergers get proposed and which get consummated¹⁹. While some standard must be used as a form of triage—a method of deciding which cases merit further investigation—we simply do not know whether the actual standard used is anywhere near optimal. I consider it to be a signal failure of economic analysis that such problems are not intensively studied.

3.2. *Behavioral Standards*

All this makes it natural to concentrate on behavioral standards for oligopoly, and, indeed, with the exception of merger policy, this is what is usually done.

Certain forms of behavior are easy to rule out in principle. I have already given the example of overt price fixing. Yet, even here, there are grey areas. It is surely price fixing if you and I agree as to the prices we will set. What if I announce my price and then you follow? What if I announce a tentative price and wait to see if you follow before putting it into effect?

A different type of behavioral standard verges on the structural. Oligopolists will find it difficult to collude, especially implicitly, if the product is complex

¹⁸ Some idea of what this means can be obtained by observing that if there are n equal-size firms, then the HHI is equal to $10,000n$. (Multiplication by 10,000 presumably occurs because lawyers do not like decimals.)

¹⁹ To point out a particular example, the Federal Reserve Board, which has authority over bank mergers uses the HHI standard (along with other tests) with the HHI calculated in terms of bank *deposits*, which is not even a measure of relevant output. To its credit, the Board has expressed some doubts about its numerical screens.

and cheating hard to identify. They may therefore attempt to simplify matters by adopting «facilitating devices» –methods to ensure that conscious parallelism will work.

An old but excellent example of this comes from what are known as the «basing-point» cases. In the steel industry, there are a very large variety of products, shipped from a variety of plants. The members of the steel industry agreed that there would be certain standardized items, with prices of other items related to the standardized ones according to formulae published in an industry book. Further they agreed that, regardless of the origin of a steel shipment, freight would be charged as though it had come from one or, later, a few particular locations, called «basing points».

The industry claimed that these devices made things much simpler for customers. Maybe so, but they also made oligopolistic parallelism much easier. By adopting such devices, the industry no longer had to coordinate a large variety of prices. Rather they had only to coordinate the prices of the standardized items in the basing-point locations. The rest could be mechanically done. Given the difficulty of coordinating oligopoly action under uncertainty, this made such coordination much easier. It was eventually ruled illegal.

Ruling out facilitating devices may not always be simple, however. Some devices that may serve to facilitate coordination may also serve other more positive purposes. As always, it is difficult to formulate standards that can be applied without any investigation whatever.

This brings me to my final point. It may sometimes be difficult to tell whether a particular set of actions is principally designed to aid oligopolistic coordination, but at least competition policy should not positively promote such activity.

In this connection, I am quite skeptical of certain forms of what is called «industrial policy». While some examples of permitted coordination, such as AirBus may in fact be successful, I do not believe that authorities are likely to be good at picking winners. What is more, permitting competing firms to cooperate in research must be done with caution. Such cooperation may or may not be socially useful, but its utility may be offset if the venturers end up cooperating on more than research. The mere opportunity to get to know each other may facilitate conscious parallelism, and it may be impossible to prevent explicit conversations about prices, products, output, or customer allocation. Policy makers should think long and hard before encouraging such contacts.

In this connection, I can do no better than to quote Adam Smith (1776, 1937 ed., p. 128). (Everyone knows the beginning of the passage, but the end is surprisingly apt.).

People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in

some contrivance to raise prices. It is impossible indeed to prevent such meetings, by any law which either could be executed, or would be consistent with liberty and justice. But though the law cannot hinder people of the same trade from sometimes assembling together, it ought to do nothing to facilitate such assemblies; much less to render them necessary.

A wise competition policy should bear that firmly in mind.

4. Concluding Remarks

Let me then briefly summarize the strands of thought that run through this paper.

First, competition policy can have either a structural or a behavioral standard or some combination. In the area of monopoly, a sensibly applied structural standard seems helpful. That is less true when it comes to oligopoly with the possible exception of merger policy.

Second, whatever type of standard is used, appropriate tests are generally not simple. Even the deceptively easy task of defining a «market» and calculating market shares is not trivial. Moreover, especially when it comes to oligopoly, economic analysis just does not provide the simple mapping between easy-to-measure structural elements and outcomes that would make tests easy.

Finally, I believe oligopoly to be a more important and frequent problem than is single-firm monopoly. This is especially true in a world open to trade. Here behavioral standards are appropriate.

In general, a sensibly applied competition policy cannot be carried out with quick and simple methods. The facts of the industry in question must be studied in some detail. Here economists have much to contribute –but not if they assist only in devising simple but misleading tests.

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Resumen

Este artículo utiliza la experiencia norteamericana para discutir cómo el análisis económico puede informar y ayudar a la política de defensa de la competencia. El debate sobre la utilización de patrones estructurales o de conducta recorre todo el trabajo, que discute casos de monopolio, oligopolio y fusiones. El análisis económico tiene mucho que aportar, pero ha de ser debidamente interpretado, pues tratamientos superficiales pueden ser claramente perjudiciales. Por ejemplo, medidas como la cuota de mercado, los beneficios o la concentración no son útiles. Análogamente, pruebas apresuradas sobre conductas predatorias pueden inducir a confusión.

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