MARKET DEFINITION: A USER'S GUIDE

Franklin M. Fisher
Jane Berkowitz Carlton and Dennis William Carlton Professor of Economics
Massachusetts Institute of Technology[1]

1. Introduction: the Purpose of Market Definition

Market definition has become a necessary part of every antitrust case, and there is no avoiding discussing it. As we shall see, market definition can be a useful tool, a way to begin organizing the material that must be studied. Unfortunately, too often market definition becomes an end in itself -- the principal, indeed, sometimes almost the only matter to be analyzed. When that happens, market definition stops being a useful organizing device and becomes a shibboleth of antitrust analysis.

To understand why it is important to avoid this and how to handle market definition requires an examination not so much of rules for market definition as of the purposes of the market definition exercise, its uses and its limitations.

The first thing to understand about market definition is that how it is done depends on the purpose for which it is used. Thus, where the issue to be investigated is that of the market power and behavior of a seller, the market will often be defined differently than where what is in question is the market power and behavior of a buyer. To facilitate exposition, I shall usually assume that we are talking of sellers.

Begin by considering an allegation of single-firm monopoly. Why do we undertake the market definition exercise? We do so because we wish to measure the market share of the alleged monopolist and draw conclusions therefrom. Similarly, in a case with an allegation of collusion or in the case of a proposed merger, we are interested in market definition so that we can calculate some measure of concentration -- these days, generally the Hirschman-Herfindahl Index (HHI) -- and draw some conclusions from that measurement.

To be sure, such measurements are not the end of the investigation. Ease of entry must also be considered, and one might reasonably say that such a consideration requires one to know what it is that is being entered. That is fair enough, and, as we shall see, proper analysis will consider all the facts involved in both market share or concentration and

[1] I was a witness for one side or the other in most (not all) of the cases discussed in this paper. In particular, I was the principal economic witness for IBM in *U.S. v. IBM* and for the United States in *U.S. v. Microsoft*. The reader will easily discern which side of other cases I was on. Nothing in this paper should be taken as necessarily representing the views of my clients, especially the United States Department of Justice. I am indebted to Mary Beth Savio and Evan Sue Schouten for comments and assistance but retain responsibility for error.

ease of (or barriers to) entry. But, while careful procedure will come up with the same conclusion regardless of market definition, the use of share or concentration measures loses meaning if market definition is not done carefully.

An example will help here. Boats that are kept in seawater must have their bottoms painted periodically with copper-based paint to avoid barnacles. Suppose that there is only a single manufacturer of such anti-fouling paint, but that any manufacturer of ordinary paint (of which there are many at least as large as the maker of anti-fouling paint) could easily produce anti-fouling paint by adding some readily available copper compound to its process.

The issue to be investigated is that of whether the single current producer of anti-fouling paint has monopoly power, and the question now arises of what is the appropriate market definition: anti-fouling paint or all paints.

One way to proceed is to observe that boat owners -- the customers of the alleged monopolist -- have no substitute to which to turn in the event of an attempt by that firm to raise prices above competitive levels and earn supra-normal profits. Technically, there is no demand substitutability. That might lead us to define the market as anti-fouling paint only.

The other way is to take into account the fact that other paint manufacturers can enter so easily as to provide demand substitutable paint very quickly. If such supply substitutability is fast enough, then we might define those other manufacturers as in the market already.

The first important thing to notice about this example is that one can and should reach the same result as to monopoly power whichever market definition one uses. If the market is defined as anti-fouling paint only, then the fact that entry is so easy should lead to the conclusion that there is no monopoly power even though the share of the alleged monopolist is one-hundred per cent. If, on the other hand, the market is defined as including all paints, then the same conclusion follows from an examination of the very small market share of the alleged monopolist.

Notice, however, that if market definition is to be a help and not a hindrance, one of these definitions is superior to the other -- even though consistent treatment will lead to the same result either way. If any conclusion is to be drawn from market share, then the second definition, the one that includes all paints, must be used. The first definition, the one that includes only anti-fouling paint, merely gets in the way of the analysis, making market share meaningless.[2]

[2] Warning: It should *not* be concluded from this example that I believe that markets should always be defined as broadly as possible.

2. The Constraints Approach

What, then, does economic analysis have to say about market definition? In one sense, the answer is "Nothing at all." The question of what is "the" market never arises in economics outside of antitrust. Moreover, as the example above suggests, it is not a question that has a precise, well-defined answer.

Consider the classic United States case on market definition, the *Cellophane* case.[3] Here the market definition issue was whether all flexible wrapping papers were in the same market as cellophane, a transparent flexible wrapping paper. The Supreme Court considered evidence that customers substituted other flexible wrapping papers for cellophane and concluded that they were in the same market. This, in turn, caused them to find in favor of DuPont, the alleged monopolist.

That finding was (and still is) strongly criticized by economists.[4] They pointed out that cellophane was profitable at lower prices than those charged by DuPont and that DuPont would naturally raise its price to the point at which substitution began to take place. They concluded that other flexible wrapping papers were *not* in the same market as cellophane and that the Court should have found against DuPont. Indeed, the view was that the Court, in its market definition exercise had fallen into what is now known as "the *Cellophane* trap".

I agree that the case was wrongly decided, but I do not agree that the Court should have found that other flexible wrapping papers were not in the same market as cellophane. Neither do I believe that it was correct to find that such papers *were* in the same market. Indeed, the *Cellophane* case points up some of the dangers of the entire market-definition exercise.

The relevant facts of *Cellophane* are undisputed. At a high enough price for cellophane, there was substitution of other flexible wrapping papers. At lower, still profitable prices, there was not. Once one has stated that (and specified the prices), one has said all there is to say. Nothing is to be gained, and much information may be lost by an attempt to force these facts into the Procrustean bed of market definition, insisting on an answer that other flexible wrapping papers are either in or out of the market. If one insists on expressing the facts in such language, then the correct answer is that such papers are "in" at high prices for cellophane and "out" at low ones. Evidently, this is not a very useful way to proceed.

How then should market definition be handled? I have maintained for many years[5] that market definition should be considered an organizational first step in antitrust analysis.

[3] *United States v. E.I. duPont de Nemours and Company*, 351 U.S. 377 (1956).
[4] Stocking and Mueller (1955); Kaysen and Turner (1959, p. 102); Posner (1976), p. 127.
[5] My statements on this topic go back to my work in the *IBM* case in the 1970's (*United States v. International Business Machines Corporation*, Docket number 69 Civ. (DNE) Southern District of New York. They first appeared in published form in Fisher (1979) and in Fisher, McGowan, and Greenwood (1983). See also Fisher (1993).

In particular, a useful market definition should include in the market all the firms and products or services that constrain the exploitation of monopoly power by the firm (or group of firms) under consideration.[6] Of course, one must always remember that not all things that are included need constrain power to the same degree. Similarly, one must also remember that not all things excluded thereby become irrelevant as providing no constraint at all. But the constraints on power are what are to be examined, and market definition should be a summary of what one has to understand to analyze what is going on.

For nearly two decades, that approach has been accepted by the United States Department of Justice in its *Merger Guidelines.*[7] There a market is defined as the smallest set of firms (including the merger participants) that could, if they colluded, profitably maintain a significant price increase for a significant period of time. The exact standard as to what is "significant" does not matter; this is a "constraints" approach to market definition. The only difference is that the *Guidelines* are designed to assist with the question of whether a merger will make things worse than they already are; hence they look at price increases relative to the existing level. A more general application of the principle would look at price increases above the competitive level.

In other words, a "market" is something that can be monopolized. If you have left out significant constraints on power, the "market" is too small. If you have kept in firms and products that are not significant constraints, the "market" is too large.

How then should one analyze the constraints involved? The answer was implicitly given in considering the anti-fouling paint example above. Constraints on market power are of two types, stemming from demand substitutability and supply substitutability.

Demand substitutability refers to those products and services to which customers of the alleged monopolist (or non-competitive group of firms) can readily turn in the event of an attempt to raise prices above the competitive level and earn supra-normal profits.

Supply substitutability involves firms that do not currently produce demand-substitutable products but could readily do so in the event of such an attempt to exercise power. Clearly, the distinction between supply substitutability and ease of entry is one of degree, rather than of kind. As the anti-fouling-paint example shows, however, there are times when entry is so easy (supply substitutability so great) that defining the market to exclude such potential suppliers of demand-substitutable goods makes market definition a fairly useless exercise even if it need not lead to the wrong conclusion.

Notice that the analysis of market definition in this way consists of the steps that one needs to take anyway in analyzing monopoly power. This reflects the fact that market

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[6] My discussion and the examples below focus on what products should be included in the market. The same principles apply to geographic market definition, however.

[7] United States Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (April 2, 1992; revised April 8, 1997).

definition must be attuned to the question to be asked and not merely an arbitrary matter of how words are used. That maxim has been and, unfortunately, still is often forgotten as the following examples illustrate.

3. Examples: How Not to Define Markets

a. Nestle's and Stouffers

In the early 1970's, the Nestle's corporation acquired Stouffer's which, among other things, produced frozen foods. The United States' Federal Trade Commission (FTC) opposed the acquisition, contending that the "market" consisted of "high-priced, non-ethnic, frozen entrées".[8] One does not have to know much about the case to recognize that this definition was engineered ("gerrymandered", to use the American expression) to obtain the desired result. Apparently, no constraint would be placed on the merged firm by fresh food, by entire frozen dinners, by such items as chicken pot pie (low-priced) or by Mexican, Chinese, or Italian frozen dishes.[9] The point of market definition was lost here in an attempt to secure a high market share measurement. Of course, that made market share measurement meaningless.

b. *U.S. v. IBM*

The situation in the eons-long IBM case of the 1970's was even more bizarre. The U.S. Department of Justice's (DOJ's) complaint defined the market as "general purpose, electronic, digital computer systems, optimized for commercial purposes". In the first place, this too was gerrymandered to exclude competition by scientifically oriented computers, an area in which IBM was less successful than it was in obtaining business customers. In so doing, the government overlooked the fact that IBM's System/360 family of computers had effectively erased the distinction between scientifically-oriented and business-oriented computers. It also produced the peculiarity that much of the actions complained of took place off-stage, so to speak, having precisely to do with competition for scientific customers. (The definition was also imprecise, at best, in its use of the term "general purpose", which ended up defined in such a way as to exclude nearly all of IBM's competitors and, quite possibly, even IBM itself.)

But, for our present purposes, the major defect in the definition lay in the use of the term "systems". The government insisted that no company that made only part of a "system" could be in the market. It thus excluded companies such as Telex or Memorex or (later) Amdahl that made plug-compatible copies of IBM disk drives, tape drives, or even central processing units. Yet these were the companies privately suing IBM under the antitrust laws and the subject of a great deal of the government case involving IBM's reaction to such competition.

[8] In the U.S., an "entrée" means a main course.

[9] It is amusing that, while the case was pending, Stouffer's ran a series of television commercials featuring someone biting into a Stouffer product and saying "What is it? It tastes like lasagna, but it isn't lasagna". I have always wondered whether the legal department had a hand in that campaign.

In the end, the DOJ went even further. They insisted that, although such companies were, by definition, not in the "market", their products were, and that, since their products were attached to IBM systems, they should be counted in IBM's market share! This was part of a tortured treatment of market share which was to be measured as IBM's share, not of revenues or shipments, but of all computers ever built and still in existence (often at greater than original prices).[10]

Obviously, this robbed market share and market definition of any meaning whatever. By the DOJ's standard, IBM could have gone out of business years earlier and still had monopoly power.

This sort of thing is what happens when market definition is undertaken with no understanding of its purpose or limitations. Other cases, while not as bizarre, also exhibit a lack of understanding.

One fairly common phenomenon occurs in private antitrust cases (which are permitted in the U.S.). Here, the plaintiff sometimes defines the market in terms of how it does business itself rather than in terms of the way the defendant operates.

c. Salvino's and NBA Properties

There is currently a case involving National Basketball League Properties (NBAP) and the Salvino Corporation.[11] Salvino applied to NBAP for a license to manufacture little plush bears using NBA team colors, logos, etc. That application was refused, and NBAP is suing Salvino for going ahead anyway. Salvino has counter-sued under the antitust laws, asserting that NBAP is nothing but a cartel.

For our purposes here, the interesting issue is that of market definition. Salvino's expert believes it obvious that the market is that for little plush bears (or possibly other plush objects) with NBA-licensed colors, logos, etc.. That, of course, is what Salvino wishes to sell. But NBAP, does not produce little plush bears.[12] NBAP is in the business of offering licenses to manufacturers of all sorts. Those manufacturers have no special interest in taking an NBAP license and selling to basketball fans; rather, they wish to sell their wares profitably, and such a license is one way to do it. Hence, the NBAP competes (as Salvino does not) with other licensors that can make properties specially attractive.

d. The Move of the Los Angeles Rams

To take a different example, also drawn from sports, some years ago, the Rams football team of the National Football League (NFL) moved from Los Angeles to St. Louis.[13] They did so after considerable negotiation with the NFL, eventually paying a sizeable relocation fee. The St. Louis Convention Center (to whom the fee was passed on, by

[10] This prompted the remark from my colleague on the case, James McKie, that "The government has adopted a measurement principle which, from the fact that Stonehenge still stands on Salisbury Plain concludes that the Druidic Construction Company is a force in the British housing market." Putting aside the fact that the Druids did not build Stonehenge, I really wish I had said that first.

[11] *NBA Properties v. Salvino, Inc.* Civil Action No. 99-CIV-11799(LTS).

[12] NBAP does sell such bears at retail, but here it acts only as another retailer.

[13] Of course, the sport involved here was American football.

agreement) sued the NFL under the antitrust laws. I need not here discuss the entire case, which was dismissed during trial.[14] Instead, I consider only the market definition question involved.

The plaintiff defined the market as the market for football stadiums built to NFL standards, and claimed that the NFL (or its teams) had monopsony power in that market. Of course, this was the product that the plaintiff had produced and was selling (or leasing). There were only a limited number of such stadia, and, had the issue been one of whether the *plaintiff* had market power, such a market definition might have made some sense as defining the set of alternatives to which the NFL could turn – the constraints on the *seller's* power. As a market definition for the actual case, of course, it made no sense whatsoever. The issue there was the constraints on the NFL, the *buyer*, and that had to do with the alternatives the St. Louis Convention Center had to building such a stadium.[15] It was as though a maker of address labels had, without being asked, made them with my name on them and then claimed that I had monopsony power over address labels with the name "Franklin Fisher" printed thereon.

Again, market definition must be done with full account taken of its purpose.

e. *U.S. v. Microsoft*

I turn now to the recent (and still partly current) *Microsoft* case,[16] which exhibits other features that bear on market definition. Here, a few words are in order about the economics of operating systems.

1. For the most part, software applications written for one operating system will not run on other operating systems. To make them do so means essentially rewriting them, and this is quite expensive.

2. The writing of software applications has large economies of scale. Almost all the costs are in the writing, debugging, and documenting, while the production of additional copies costs practically nothing.

3. As a result, software-application writers have a great incentive to write applications (or at least to write them first) for the operating system that has the largest number of users.

4. But users want to have operating systems for which large numbers of applications written and for which one can be sure future applications will also be written.

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[14] *St. Louis Convention & Visitors Comm'n v. National Football League*, 46 F. Supp. 1058 (E.D. Mo. 1997), *aff'd.* 154 F. 3d 851 (8th Cir. 1998). For a discussion of the case, see Fisher, Maxwell, and Schouten (2000).

[15] Those alternatives included both the building of a different kind of stadium and, since what St Louis wanted was prestige and attractiveness for their city, devoting the funds to other municipal purposes such as schools, hospitals, roads, etc..

[16] *United States of America v. Microsoft Corporation,* Civil Action No. 98-1232 TPJ (D.C.).

5. As a result, when one operating system gets ahead of its rivals (perhaps because it is better) and acquires more users, application writers will tend to write for it. This will make it more attractive to users which will, in turn, make it even more attractive to applications writers, and so forth.

This is what happened to Microsoft with Windows 95 (followed by Windows 98). It achieved monopoly power through this entirely natural phenomenon – the "applications barrier to entry" – in which rival operating systems and potential entrants were at a great disadvantage in their ability to attract software-application writers. (Had Microsoft remained content with that and not taken further actions to maintain its monopoly power by preventing the weakening of the applications barrier to entry, there would probably have been no antitrust case, but that is another story.[17])

The question to be asked here is that of the proper market definition – although, as I discuss below, I believe that market definition here was an unnecessary analytic step, as it usually is, despite the legal requirement.

The DOJ contended that the proper market consisted of operating systems for Intel-compatible personal computers (henceforth, simply "PCs"). Does this make sense? What about Apple computers? Do not users choose between PCs and Apple machines? How then can Apple be left out of the market?

Probably the first thing to note here is that it makes very little practical difference how this question is decided. The only thing that market definition really gets used for is market share. If Apple is left out, Microsoft's share is around 90%; if it is included, Microsoft's share is around 80%. Since share is only a rough guide anyway (see below), and since there was plenty of direct evidence that Microsoft enjoyed monopoly power (also discussed below), the same conclusion follows whether Apple is included or not.

Nevertheless, the question is worth discussing because of the way in which the facts bear on Apple as a constraint on Microsoft. If the issue had been one of an alleged monopoly of PC's, then the existence of Apple as a substitute might very well have mattered. In the *Microsoft* case, however, the allegation was one of monopoly in *operating systems* for PC's. For that purpose, the effect of Apple can be analyzed by asking whether, were Microsoft to raise the price of its operating system by ten percent, say, this would cause a substantial number of computer users to switch to Apple.

The answer here is surely in the negative, since the cost of Windows is only a small fraction of the cost of the average PC. Indeed, there was substantial deposition testimony on this point from PC manufacturers who were asked what they would do in such circumstances and replied that they would have no choice but to continue with Windows. In fact, when Microsoft imposed some onerous conditions on PC manufacturers, an executive from Hewlett-Packard (HP) sent Microsoft a letter saying that, had HP any

[17] See Fisher and Rubinfeld (2001) for a far more detailed analysis.

choice, it would not deal with Microsoft.[18] When one realizes that this was in the context of the *actual* price of Windows rather than the competitive price (which is difficult to ascertain but surely cannot have been higher than the actual price), the conclusion as to monopoly power is very clear.

Indeed, that conclusion requires no answer to the market definition question (although it implies one). This raises the question of why one should bother with market definition in the first place, to which I shall return.

Microsoft raised three market definition issues at trial. The first of these was that hand-held devices such as the Palm Pilot should be included in the market because they would replace the PC. Apart from the fact that such a statement was a prediction rather than an analysis of the situation in the years to which the trial referred, and apart from the fact that Bill Gates was stating publicly at the same time that the PC would always remain very important, this raises an analytic issue if correct. That issue is the same as the one just discussed as to Apple. Would an increase in the price of Windows cause computer users to substitute handheld devices? Again, the answer is clearly in the negative because the price of Windows is a small fraction of the price of the average PC. Given this, if handheld devices were to replace the PC in appreciable numbers, that would only mean that Microsoft would have monopoly power over a smaller market, not that its exercise of monopoly power would be appreciably constrained by the devices in question.

The second market definition issue was often raised implicitly by Microsoft pointing to examples of the fact that software generally is quite competitive with innovation weakening or destroying what appear to be entrenched positions. More explicitly, Microsoft claimed that the industry was so innovative that it could soon face severe competition from somewhere that it could not yet identify. The problem here, of course, is that the proposition put forward has only tangential relevance to the situation in operating systems where Microsoft's monopoly was protected by the applications barrier to entry. Further, claiming that an unknown innovation could destroy Microsoft's monopoly power, while it may be an appropriate argument as to remedy or, possibly, an argument that the case should not have been brought, simply does not bear on market definition or monopoly power in fact.

Finally, Microsoft raised an issue that is reminiscent of what I had to say about the IBM case and the erroneous omission of the plug-compatible manufacturers from the market. The principal acts by Microsoft that were alleged to be anti-competitive were directed at Netscape's internet browser and at Sun Microsoft's Java. Without going into unnecessary detail, these can both be described as innovations which, had they become very widely used, would have weakened or destroyed the applications barrier to entry. They would have done so not by themselves competing as operating systems but by encouraging software application writers to write for the browser or for Java rather than for the underlying operating system. Since both the browser and Java would run on non-Windows operating systems as well as on Windows (indeed, that was the whole point of Java), Microsoft feared that the operating system would become "commoditized", i.e.,

[18] Government Exhibit 309.

that operating systems would have to compete only on their underlying capabilities. It therefore set out to ensure that this would not happen.

On the market-definition front, Microsoft raised the argument that since the company had felt sufficiently threatened by the browser and by Java to take action against them, those innovations placed constraints on its power and hence should be included in the market under study. It is instructive to evaluate that argument.

In the first place, such an argument cannot be accepted as a general principle. If it were, then any firm acting to gain or, especially, preserve market power could defend on the basis that the very fact that it took predatory acts against others showed that it did not have monopoly power.

Secondly, even though the claim is reminiscent of the situation of IBM and the plug-compatible manufacturers in the sense that, in both cases, the government's market definition appears to imply that much of the action is taking place off the defined stage, the two cases are actually quite different. In the case of IBM, the prices and qualities of the plug-compatible machines were already constraints on IBM's pricing. That is because the price of an IBM "system" was simply the sum of the prices of the boxes of which it was comprised. Since the plug-compatible boxes were functionally identical to the corresponding IBM products, the customer could (and many did) easily replace the IBM boxes with the plug-compatible ones, obtaining a "system" which was only partially made by IBM if, indeed, it was produced by IBM at all. In other words, the plug-compatible manufacturers were already competing directly with IBM and constraining its pricing.

The case of Microsoft was quite different. The two products against which Microsoft took action were not themselves competing against Windows. Indeed, they were complements to operating systems rather than substitutes. The problem Microsoft faced was not that it had to lower its Windows' price to compete with the Netscape browser and with Java, but that those two products would open an avenue through which competition from other operating systems could come. To claim that this put them in the relevant market was like claiming that cars that can run on ethanol are themselves in the gasoline market.

4. Why Do Market Definition at All?

The discussion of *Microsoft* just given raises the question of whether market definition is an exercise that really needs to be performed. I begin with the arguments against such a necessity and then give those in favor.

In single-firm monopoly cases, market definition is generally undertaken primarily to obtain a measurement of market share. That measurement, in turn, is supposed to tell one something about the presence or absence of monopoly power.

In thinking about this, it is important to recognize that a large market share does not itself equate with monopoly power, even though judicial practice has tended in that direction. Monopoly power is the power profitably to raise prices above (or reduce quality below) the competitive level for a significant period of time. In other words, it is the power to raise prices above (or reduce quality below) the competitive level for a significant period of time without having business bid away by competitors, including new entrants. Market share is, at best, a very rough indicator of this. A small market share suggests that competitors would not have to do much to bid away business; a large market share suggests the opposite. Yet neither suggestion need be true, even in a properly defined market. A small share can be consistent with power if there are reasons that competitors cannot expand; more important, a large share can simply represent greater efficiency or product quality on the part of the alleged monopolist.

Unfortunately, courts have typically not recognized this directly. The classic locus for dicta on market share is Judge Learned Hand's opinion in the *ALCOA* case[19] where three different levels of market share are characterized as "not enough", "doubtful", and "certain" to signal monopoly power, respectively. Judge Hand then went on to carve out an exception for the case of share attained by "superior skill, foresight, and industry", saying "The successful competitor, having been urged to compete, is not to be turned on when he wins," but the damage was done. Ever afterwards, cases have revolved around market definition with the two sides attempting to define the market in such a way as to meet or fall short of Judge Hand's standards on market share.

What else could have been done? I believe it would have been better to continue to define monopoly power as above and to leave market share as a rough indicator thereof. As in *Microsoft*, the presence of power can sometimes be detected without share measurement. Further, as we have seen, the market definition exercise frequently has no clear answer, and attempting it can suppress necessary information (as in *Cellophane*).

The problem may be even more severe in Europe (and elsewhere) where an offense is described in terms of "abuse of a dominant position" and "a dominant position" is characterized in terms of market share (usually a smaller one than would raise a conclusive presumption of monopoly under the *ALCOA* standards). The danger here is twofold: First, such a standard assumes that market definition can be easily and unambiguously performed; this is not the general case. Second, that standard can have perverse incentive effects on firms that are approaching the crucial share by competing on the merits.[20]

Against the position that market definition is unnecessary, the objection might be raised that the analysis of anti-competitive acts in a monopolization case requires an exact specification of what is to be monopolized. I do not agree with this view. Putting aside the various tests that have been suggested, the *definition* of an anti-competitive act should

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[19] *United States v. Aluminum Company of America, et al.*, 148 F. 2d 416 (1945). For a more detailed discussion of the issues involved here, see Fisher, McGowan, and Greenwood (1983, pp. 2-4).
[20] On this effect, see Levin (1982).

be clear. An anti-competitive act by a single firm is one that is rationalized only by the monopoly rents that it obtains or protects. Properly interpreted, that is the standard at which the various tests aim.[21] To judge whether an act is perfectly competitive, then, one has to know whether there are monopoly rents. But, as we have seen, that does not require a precise (or perhaps any) answer to the market definition question.

So far, I have been discussing single-firm monopoly cases. When we come to merger (or other multi-firm) cases, similar problems arise. In the United States, it is customary to define the market and then compute the HHI concentration measure, drawing conclusions therefrom as to the likelihood of successful coordination among the (remaining) firms in the market. As I have elsewhere pointed out, however[22], economic theory gives us no really sound basis for mapping the HHI (or any other concentration measure) into the likelihood of successful coordination. Oligopoly theory is simply not so well-developed as that, and the likelihood of successful coordination depends on the facts of the particular industry involved. The best one can say for the employment of the HHI is that it may be a useful device for "triage", assisting the antitrust authorities in deciding where to put their scarce resources. That is no small gain, but it would be very undesirable were judicial standards to be formulated in HHI terms. That is especially so because market definition, with all its attendant difficulties, is a necessary prerequisite for HHI calculation.

All of this suggests that market definition is often a dangerous enterprise. So it is if market definition becomes an end in itself with the analyst losing site of its purpose. But there are reasons in favor of analyzing market definition if that is done correctly.

The object of the market definition exercise is to assist in the evaluation of the market power of a firm (or group of firms). As we have seen, this implies that market definition must be approached in terms of the constraints on the firm or firms in question. Even though there may be no single completely satisfactory answer to the market definition question, the process of analyzing demand and supply substitutability and the process of evaluating the relative strength of different constraints is indispensable to the analysis of market power itself.

In other words, the process of market definition, approached correctly, is the very process that must be followed to get to the heart of the matter at issue. While the exact settling of the market definition issue is not required for the correct analytic answer, and while there can well be more than one satisfactory market definition yielding the correct result, the correct approach to market definition will often be a considerable aid to the organization of the necessary analysis.

The economic expert can thus satisfy the legal requirement for market definition while correctly using that exercise to analyze the underlying issue of market power. That can

[21] "Properly interpreted" matters here, however. My formulation has been criticized as ruling out limit pricing or better products. That is not so, but this is not the paper in which to discuss such issues.
[22] Fisher (1987).

only be done, however, if market definition is approached with its analytic purpose firmly held in mind. As in the examples given above, market definition considered in other terms and taken as an end in itself can be a considerable danger.

References

Fisher, F.M. (1979). "Diagnosing Monopoly". 19 *Quarterly Review of Economics and Business,* No. 2 (summer). Reprinted in Fisher (1991).

Fisher, F.M. (1987). "Horizontal Mergers: Triage and Treatment". 1 *Journal of Economic Perspectives* No. 2 (Fall). Reprinted in Fisher (1991).

Fisher, F.M. (1991). *Industrial Organization, Economics, and the Law* (J. Monz, ed.). Cambridge, MA: MIT Press.

Fisher, F.M. (1993). "Reflections on Competition Policy". 17 *Investigaciones Economicas* (Segunda Epoca), , No. 3 (September). Reprinted in Fisher (1999).

Fisher, F.M. (1999). *Microeconomics: Essays in Theory and Applications* (M.-P. Schinkel, ed.). Cambridge, UK: Cambridge University Press.

Fisher, F.M., C. Maxwell and E. S. Schouten (2000). “The Economics of Sports Leagues and the Relocation of Teams: The Case of the St, Louis Rams.” 10 *Marquette Sports Law Journal,* No. 2 (Spring).

Fisher, F.M., J.J. McGowan, and J.E. Greenwood (1983). *Folded, Spindled, and Mutilated: Economic Analysis and U.S. v. IBM*. Cambridge, MA: MIT Press.

Fisher, F.M. and D. L. Rubinfeld (2001). *”U.S. v. Microsoft* - An Economic Analysis". XLVI *The Antitrust Bulletin*, No. 1 (Spring).

Kaysen, C. and D. Turner (1959). *Antitrust Policy*. Cambridge, MA: Harvard University Press.

Levin, Dan (1982). *Essays on Government Regulation under Different Market Structures.* Massachusetts Institute of Technology Doctoral Dissertation (unpublished).

Posner, R. (1976). *Antitrust Law: An Economic Perspective*. Chicago and London: University of Chicago Press.

Stocking, G.W. and W.F. Mueller (1995). "The Cellophane Case and the New Competition". 45 *American Economic Review* (March).