The Merger Guidelines and Market Definition: A Powerful Tool for Merger Analysis

Lawrence J. White*
Stern School of Business
New York University
Lwhite@stern.nyu.edu

Introduction

Merger analysis has been one of the crucial components of modern antitrust enforcement in the United States. Because the goal of modern antitrust policy has been to enhance the efficiency of the U.S. economy and because the unbridled exercise of market power generally is antithetical to that efficiency, the definition of markets has been central for much of antitrust enforcement. 1

Since 1982 2 the “horizontal merger guidelines” (HMGs) that were first developed and promulgated by the U.S. Department of Justice (DOJ) and subsequently adopted by the U.S. Federal Trade Commission (FTC) (and by other federal agencies that have merger review authority) have provided a robust and powerful analytical framework for defining markets for merger analysis.

This essay will provide a brief overview of that market definition paradigm and its strengths and limitations.

---

1 This sometimes referred to as “delineation”. 2 The major exception has been enforcement against price fixing, where the “per se” approach has meant that market definition is largely irrelevant for enforcement (but may be relevant for the demonstration of harm and the consequent recovery of damages). 3 There was an earlier set of HMGs, which were promulgated by the DOJ in 1968. These HMGs did not embody a robust analytical framework for market definition and soon fell out of use for merger analysis purposes.

* Forthcoming in Concurrences Global Antitrust Conference Proceedings, 2015. This paper is a written-up version of the oral presentation by the author at the Concurrences Global Antitrust Economics Conference, May 29, 2015, at George Mason University Law School.

Lawrence J. White is the Robert Kavesh Professor of Economics at the Stern School of Business, New York University. During 1982-1983 he was the Director of the Economic Policy Office (“Chief Economist”) at the Antitrust Division of the U.S. Department of Justice.
The basic paradigm

The basic idea that underlies the market definition paradigm in the HMGs – which was first enunciated by the DOJ in 1982\(^4\) – is that merger policy should be aimed at preventing mergers that would create or enhance market power (in the absence of sufficiently offsetting efficiencies). Accordingly, the first step should be to establish the boundaries of a “market” – the collection of sellers\(^5\) that might be able to exercise market power – and then determine whether the proposed merger might allow the merging firms (or the collection of firms more generally in the specified market) to exercise market power as a consequence of the merger.\(^6\)

The “mechanism” for this determination has come to be described as “the hypothetical monopolist” or “SSNIP” test. In conducting this test, the analyst asks, “If (starting from current circumstances) all of the firms in a tentatively designated market were to be combined into a single decision-making unit (a hypothetical monopolist), could that combined entity increase its profits by achieving a “small but significant nontransitory increase in price” (SSNIP)?\(^7\) If yes, then that collection of firms constitutes a relevant market for merger analysis (and the smallest such collection of sellers would

\(^4\) As Werden (2003) has pointed out, the basic idea was first developed by Adelman (1959). At the time that the market definition paradigm was first developed at the DOJ in early 1982, no one there was aware of Adelman’s earlier analysis.

\(^5\) Generally, it is the smallest group of such sellers that is the focus of the analysis. If the merger involves two or more firms that appear to be significant buyers, then comparable analyses should be applied to the potential exercise of market power by the buyers.

\(^6\) If, as is almost always the case, the merging firms are each multi-product firms, then this analysis is necessary for each overlapping product.

\(^7\) The HMGs specify that 5% is the magnitude of SSNIP that the enforcement agencies will usually use in their market definition analysis.
usually be selected as the relevant market); if no (because too many buyers would switch away to other sellers), then that collection of sellers would not constitute a relevant market, and the sample of sellers would have to be expanded until the SSNIP criterion is satisfied.

In essence, the SSNIP test guides the analysis toward finding the smallest market that is capable of being monopolized.

Once the relevant market has been delineated, the analysis turns to the subsequent steps for determining whether the proposed merger is likely to create or enhance market power. These steps include: measuring the existing concentration of the sellers in the relevant market; measuring the pro forma change in concentration that the merger would cause; making a judgment about the conditions of entry by outside firms into the market, as well as the ease by which smaller firms might expand their outputs; measuring buyer concentration (which would be relevant for a market that involves business-to-business sales); assessing the nature of information availability among the sellers and buyers in the market; assessing the typical pricing or marketing practices by the firms in the market; assessing the degree of complexity in the quality and service dimensions of the product at issue; and assessing the antitrust history of the sellers in the relevant market.

---

8 Notice that the determination of the relevant market focuses on the identification of sellers – since it is sellers that are the entities that could exercise the market power that antitrust policy cares about. The one exception arises if the sellers can practice significant price discrimination (market segmentation) toward a specific group of buyers; in that instance, that group could also be considered as a relevant market.

9 Any switching away by buyers in response to an increase in price could be toward sellers of the same product that are located in a different geographic area and/or toward sellers of a somewhat different product. The market definition paradigm thus encompasses both the concept of geographic markets as well as product markets.

10 The Herfindahl-Hirschman Index (HHI) – which is computed by summing the squared market shares of all of the sellers in the relevant market – is generally the basis for measuring seller concentration.
Although the HMGs (and especially the market definition paradigm) were quite controversial at the time of their original introduction in 1982, they have stood the test of time, as they continue to be the basis for modern antitrust enforcement in the U.S. And, in an important sense, they have met a “market test” in another important dimension: internationally: Most modern economies have competition laws and enforcement agencies;\textsuperscript{11} and many of them have adopted merger policies that follow the basic insights of the HMGs.

**Extending the paradigm to sellers of differentiated products**

The basic “story” of the HMGs that was just summarized was originally developed in the shadow of traditional oligopoly theory, whereby the exercise of market power occurs as a consequence of the jointly coordinated behavior of the “few” sellers in a concentrated market.\textsuperscript{12} In modern parlance, this is a theory of “coordinated effects” of a merger, and it best applies to markets where there is little or no differentiation among the products that are being sold: “commodities” (or homogeneous products). Although differentiated products could be covered – if they are few enough, sellers of differentiated products could coordinate a post-merger price increase (and recall that one of the follow-on criteria involves the complexity of quality and service) – there is an important aspect

\textsuperscript{11} As of 2009, the International Competition Network (ICN) – an international association of competition agencies – had a membership of 104 competition agencies from 92 jurisdictions; see \url{http://www.internationalcompetitionnetwork.org/uploads/library/doc608.pdf}.

\textsuperscript{12} It is important to remember that this traditional oligopoly theory of coordinated behavior need not involve explicit communication and collusion. Instead, the coordination could be entirely implicit: Each seller (among a few sellers) realizes that the joint interest of the group is best served by refraining from fiercely competitive behavior and realizes that the other (few) sellers are likely to realize this as well. This type of mutual recognition of joint interests is more likely to happen when the numbers of sellers are fewer, when the barriers to entry are higher and/or the difficulties of expansion by smaller sellers are greater, when it is easier for each seller to monitor the actions of the other sellers, etc. It is no accident that this list of conditions tracks closely the subsequent stages of the HMGs analysis after the relevant market has been delineated.
to differentiated products that is not captured by the coordinated effects analysis: the strength of buyers’ preferences among the differentiated products.

That gap was closed in the 1992 revision to the HMGs, which explicitly addressed the following issue: To the extent that there are buyers that currently buy from one of the two merging firms and whose runner-up preference is for the products of the other merging firm, then the competitive check that each firm pre-merger exerted toward the other firm with respect to these customers dissolves; and the profit-maximizing result for the post-merger firm is to raise its prices. This result is, of course, exacerbated if the post-merger firm can identify who these specific first choice/second choice (“trapped”) customers are and practice price discrimination by raising prices to them only; but the principle applies more broadly: So long as there are any first choice/second choice customers, the merged firm will be less constrained as a consequence of the merger and will find it worthwhile to raise its prices – at least by a little bit.

It is important to notice that this post-merger price effect does not require the cooperation of or coordination with any other firms that sell similar products (but see the “repositioning” issue that is discussed in the next paragraph). In this sense, any direct price consequence of the merger involves “unilateral effects” (i.e., the actions only of the merged firm) and not the “coordinated effects” of the original HMG analytical framework.

The size of this post-merger price increase will be determined by the relative numbers of such “trapped” customers and the strength of their preferences for the merging firms’ products, as compared with their preferences for the products of other (competing) firms. Further, in the spirit of “entry”, to the extent that other firms (that

---

13 See, for example, Ordover and Willig (1993).
produce and sell somewhat related products) reposition their products so as to make those products more appealing (post-merger) to these (previously) trapped customers, this will temper any post-merger price increase. Finally, merger-resultant efficiencies that reduce the relevant marginal costs will also temper any price increases and could cause price decreases.

Although, as was mentioned above, this type of analysis was explicitly included in the HMGs in 1992, it was the “major” revision to the HMGs in 2010 that caused these “unilateral effects” to be seen as the primary analytical approach for the HMGs. However, the seeds of the 2010 emphasis on unilateral effects were thoroughly planted in 1992; and in that sense the 2010 revision to the HMGs was less radical than is sometimes claimed.

With respect to market definition, however, there is one consequence of the unilateral-effects approach that has been under-appreciated: If the unilateral-effects analysis identifies a significant (e.g., at least 5%) price increase that seems likely (at least, prior to any consideration of potential efficiencies) to follow from a merger, then *this finding directly identifies a relevant market.* In essence, this finding indicates – with respect to these two products – that this will be a “two-to-one” merger or a “merger to monopoly”. This notion of monopoly may not be quite the same as the market power that a local electric utility could exercise if it were released from the restraints of local rate regulation. Nevertheless, if 5% is the criterion, then for merger analysis purposes the merger has created a monopoly.

In this context, the hypothetical monopolist (SSNIP) paradigm is redundant and unneeded, and could be a distraction. If a proposed merger involves firms that sell

---

14 See, for example, Farrell and Shapiro (2010).
products that clearly are in the differentiated (rather than homogeneous) category, then the analysis ought not to start with the hypothetical monopolist (SSNIP) pursuit. Instead, the likely overlapping products of the two firms should be identified, and then customer preferences should be ascertained (e.g., through surveys and/or through econometric studies that try to capture how customers responded when the relative prices of the two firms’ products have varied in the past).

Of course, even if significant unilateral effects are not found, it is possible that a coordinated effects analysis would be worthwhile, and a SSNIP approach would be necessary. But the analysis should start with the focus on the overlapping products and the possibility of first choice/second choice customers; and only subsequently (if needed) should the SSNIP approach be employed.

This unilateral effects approach with respect to the definition of a relevant market – that the finding that the merging parties could (post-merger) raise their prices by at least 5% automatically defines those two products as constituting a relevant market – may seem inconsistent with the summary offered above: that a relevant market (for the purposes of merger analysis) is one that can be monopolized. But, if the enforcement agencies are prepared to define a significant exercise of market power as a (post-merger) price increase of 5%, then a “market” in which this can happen – whether that market has been delineated through a SSNIP process or through the analysis of first choice/second choice customers – is the relevant market for merger analysis.

Monopolization cases (or abuse of dominance)

---

15 Such econometric studies are usually the basis for predictions of the price consequences of a differentiated-products merger, which are usually described as “merger simulation” analyses.
Market definition is needed in antitrust cases that involve allegations of non-merger behavior that has enhanced the market power of a seller that already has market power. The alleged behavior may involve predatory acts – typically involving price-cutting but can also extend to expansions of capacity – and/or vertical restraints (such as tying or exclusive dealing arrangements) that may raise rivals’ costs. In order for these actions to be linked to a motive – e.g., the seller was trying to extend its market power and/or was trying to ward off entry that would have threatened the seller’s market power and/or was trying to discipline a challenger so as to keep dominance status quo – the existing market power of the seller must be demonstrated. And, of course, this means that a market (within which the seller has been exercising the market power that has been enhanced/extended/protected, etc.) must be delineated.

Unfortunately, the SSNIP paradigm generally will not provide a useful guide for delineating a relevant market in such circumstances. The reason that this is so is important to grasp: The SSNIP paradigm is a test with respect to a prospective hypothetical monopolization of a market, whereas the usual allegation in these monopolization cases is that the defendant already has market power.16

Further, the posing of a SSNIP test with respect to an actually functioning enterprise ought generally to be a useless exercise. All profit-maximizing firms ought generally to be setting their prices at levels such that a further increase increases in prices

16 At least part of the reason why this issue continues to plague analysis in this area may well be terminological: Economists often (loosely) describe market power (or monopoly power) as the “power to raise price” above competitive levels. See some references in White (2008). Unfortunately, this is too loose. Economists’ standard “workhorse” monopoly model shows that a monopoly can maintain its price (and profits) above competitive levels. The “raise price” part is relevant only to describe the process of transition, whereby a competitive industry might transform itself into a monopoly through merger (and thus the hypothetical monopolist exercise of the HMGs) or the formation of a cartel. The failure to remember this distinction may well be part of the reason why the SSNIP test is proposed for monopolization cases.
ought not to be profitable. Thus, asking the SSNIP question – could the “XYZ Corporation” profitably achieve “a small but significant and nontransitory increase in price” from its current price level? – ought generally to yield the answer “No”, regardless of whether the firm is truly embedded in a highly competitive market environment or the firm truly possesses market power.

The failure to realize the uselessness of this question in this context has come to be described as the “Cellophane fallacy”, stemming from U.S. v. E.I. du Pont de Nemours & Co., 351 U.S. 377 (1956). In that case, the DOJ alleged that cellophane was a relevant market and that du Pont, as the producer of about 75% of cellophane in the U.S. (there was only one other producer), possessed market power. Du Pont, in its defense, claimed that the relevant market was all flexible packaging materials (which included glassine, polyethylene, waxed paper, aluminum foil, brown wrapping paper, etc.), within which du Pont held less than a 20% market share, and that du Pont had to meet the competition that was offered by the firms that produced these other materials and thus that du Pont did not possess market power.

A Supreme Court majority (4-3, with 2 abstentions), as well the (earlier) Federal District Court judge, sided with du Pont in this matter. In so doing, the Court neglected to realize that some other basis for the determination of the relevant market was needed: If (somehow) the relevant market really was cellophane, then (of course) du Pont would maintain a sufficiently high price of cellophane so that it was facing (at least some) competition from those other flexible packaging materials. Thus, by using the “facing

---

17 An exception would be firms (e.g., electricity distribution companies) that are subject to some form of profit-limiting governmental regulation.
competition” criterion, the Court would never be able to entertain the possibility that cellophane actually was the relevant market.

Unfortunately, there has been little progress since 1956 to help courts or litigants define relevant markets in these kinds of cases. As was just argued, a SSNIP test generally will not offer any help. The one exception has been pointed out by Werden (2000): If a monopolization case involves a prospective action by the defendant (and the plaintiff is, say, asking for an injunction), then – just as for merger analysis a SSNIP test is useful for delineating a relevant market for then judging whether a proposed merger may create or enhance market power – a SSNIP test may be useful in delineating a relevant market for then judging whether a proposed action (by the defendant) may create or enhance market power. Although such instances may exist, they don’t appear to be the common situation, where the plaintiff is complaining that past actions (e.g., predatory actions, or the imposition of a vertical restraint) have harmed the plaintiff and that the defendant undertook the actions so as to defend or expand its already-in-existence market power.

Prior to the early 1980s, evidence on profit rates might have helped in the demonstration of the existence of market power and thus (at least indirectly) helped in the delineation of the relevant market. As was noted above, the standard economics model of monopoly indicates that a monopolist should earn higher profits than would the firms in a competitive industry.\textsuperscript{18} However, a potent critique by economists in the early 1980s of the use of the accounting profits of companies for judgments about what were normal or

\textsuperscript{18} Indeed, in their critique of the District Court opinion in U.S. v. du Pont, Stocking and Mueller (1965) pointed out that du Pont’s profits in its cellophane business were substantially higher than its profits in its rayon business, where its market position was roughly comparable to du Pont’s claim as to its market position with respect to “flexible packaging materials”.

10
competitive profits and what were above-normal profits (and thus were, arguably, an indicator of market power) has largely eliminated the use of profits for this type of determination.19

Even if profit data are not available or considered to be reliable, price data may be able to help delineate a relevant market. Suppose that a plaintiff in a monopolization case claims that the relevant market for the sale of “widgets” is local metropolitan areas. Suppose further that good data on the relative prices of widgets and seller concentration and other relevant variables (e.g., the costs of selling widgets in those areas) can be collected across a suitable sample (i.e., a “cross-section” sample) of these metropolitan areas. In that case, statistical (typically, econometric) studies may be able to demonstrate that (controlling for other things) higher widget prices are positively associated with seller concentration in these metro areas – i.e., that widgets that are sold in metro areas constitute a market that can be monopolized. And this finding could then be used to support the plaintiff’s claim as to the relevant market (within which the defendant’s market share and other relevant market-based data could be used to examine the possibility that the defendant possessed market power and that its actions were intended to extend/defend/enhance that market power.

Such data are sometimes available – e.g., for airline markets, where decades of studies have generally established that city-pairs constitute relevant markets.20 However, it is far from clear – even in an era of “big data” – whether the example of airline data

19 See, for example, Benston (1982) and Fisher and McGowan (1983). However, it is this author’s belief that it was the Microsoft Corporation’s large profits that it was earning from the sales of its Windows operating system in the 1980s and 1990s that helped convince the Federal District Court and Circuit Court of Appeals for the D.C. Circuit that operating systems for personal computers was a relevant market and that Microsoft possessed market power within that market.

will prove to be the rule, or the exception, for efforts to delineate markets in monopolization cases.

In sum, with the ruling out of the SSNIP test as a general paradigm for monopolization cases, and the general unsuitability of accounting profit data, and the uncertainty as to whether suitable price data may be available, a robust paradigm for market definition that can be used in monopolization cases is badly needed. This remains one of the most important tasks for modern antitrust conceptual thinking.

Conclusion

The DOJ-FTC Horizontal Merger Guidelines (HMGs) have clearly met a “market test”: The original paradigm was introduced in 1982; and (with suitable modifications and updates) the HMGs remain as the tool that is used – by the enforcement agencies; by other litigants; and by the courts – for modern merger analysis in the U.S. Further, similar analytical tools have come to be adopted by enforcement agencies abroad.

Within the HMGs, the market definition paradigm – the hypothetical monopolist and the SSNIP test – that was also introduced in 1982 has also passed a market test, although this paradigm is best reserved for mergers where “coordinated effects” are considered to be the primary route through which a proposed merger might create or enhance market power.

21 Nelson and White (2004) have proposed a paradigm for market definition in monopolization cases that they describe as a SSNDP: “Would the preservation of the allegedly foreclosed [or predated upon] competitor or group of competitors have led to a small but significant nontransitory decrease in price (SSNDP) by the defendant”? Further details can be found in Nelson and White (2004) and are summarized in White (2008). That this proposed paradigm has not been put into wide practice leads one to believe that – at least so far – it has not “passed a market test” and that a suitable paradigm is still needed.
However, the SSNIP test does have its limitations: It is generally unneeded for mergers where “unilateral effects” are considered to be the primary route through which a merger might create or enhance market power. And it is generally unsuitable – indeed, it is likely to be dangerously misleading – for market definition in monopolization (and abuse of dominance) cases. It cannot be stated too often that a robust paradigm for market definition is still needed for this latter category of antitrust cases.

References


