

Market Definition and the Identification of Market Power in Monopolization Cases:
A Critique and a Proposal

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Abstract

Although there is agreement on the basic economic principles that should apply to monopolization cases, there is no widely accepted paradigm for market definition or the identification of market power in such cases. This contrasts with the SSNIP paradigm of the DOJ-FTC *Horizontal Merger Guidelines*, which has gained wide acceptance in the two decades since its introduction. Moreover, misguided notions of market definition in monopolization cases still fall into a repeat commission of the “cellophane fallacy” of *U.S. v. du Pont* (1956).

To correct this problem, we propose asking the following question in monopolization cases where exclusionary practices are alleged: Would preservation of the allegedly foreclosed competitor or group of competitors have led to a small but significant nontransitory decrease in price (SSNDP) by the defendant? This SSNDP test can help define the relevant market and, more importantly, can allow courts to focus directly on the anticompetitive effects of the defendant’s actions and thereby on the exercise of market power.

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I. Introduction

Private and government-sponsored antitrust cases that allege monopolization require plaintiffs to demonstrate that the defendant has market power.¹ It is conventional to determine whether a defendant has market power² by pursuing a series of subsidiary questions: (1) What is the relevant market in which the defendant sells? (2) What is the

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¹ Landes and Posner argue: “A finding of monopolization in violation of Section 2 of the Sherman Act requires an initial determination that the defendant has monopoly power -- a high degree of market power. A lesser but still significant market power requirement is imposed in attempted monopolization cases under Section 2. There is increasing authority that proof of market power is also required in Rule of Reason cases under Section 1 of the Sherman Act. Issues of market power arise even in cases involving per se rules of illegality. Proof of some market power (though perhaps little) is required in a tie-in case; and in a private price-fixing case, proof of effect on prices (i.e., proof of the exercise of market power), while unnecessary to establish liability, is necessary to establish damages.” William M. Landes & Richard A. Posner *Market Power In Antitrust Cases* 94 HARV. L. R. 937, 937-938 (1981).

² Throughout this essay we will use the terms “market power,” “monopoly power,” and “monopoly” more-or-less interchangeably, though we recognize that “monopoly” technically refers to a single seller that sells a distinct product and faces a downward sloping demand curve, as is portrayed in Figure 1, *infra* Section II. In addition, we recognize that monopolization and other antitrust laws have been interpreted to require firms to have substantial amounts of market power. See Landes & Posner, *supra* note 1 (stating that monopoly power involves “a high degree of market power.”); Phillip Areeda, Hebert Hovenkamp, and John Solow, ANTITRUST LAW (1995) (emphasizing that antitrust case law requires “monopoly power” to be “substantial.”); George A. Hay, *Market Power in Antitrust*, 60 ANTITRUST L. J. 808 (1992) (discussing the level of market power).

defendant's market share in that market? (3) Does the defendant's market share, when combined with other market characteristics (such as entry conditions), indicate that the defendant has market power?³ Because the definition of market is the starting point for this series of questions, the determination of the relevant market is crucial to the outcome of most, if not all, cases.

Unfortunately, while there is substantial agreement about fundamental economic relationships, such as the cross-elasticity of demand between products, that shape the contours of relevant antitrust markets, there is no standard paradigm for market definition in monopolization cases.⁴ This differs sharply from the situation that applies to merger cases, where the market definition paradigm that is embodied in the DOJ-FTC *Horizontal Merger Guidelines* is now a well-accepted methodology.

Historically, there was some attempt to use profit data (with little else in the way of supporting evidence) to identify market power and, often indirectly, to define the relevant market. However, this approach has proved to be too simplistic and susceptible to error. For example, as was pointed out in a set of articles two decades ago, the accounting data that were typically used to measure profits often were not accurate measures of the economic profits that can be generated by market power.

³ While this approach is conventional, there are cases where one can proceed without measuring market shares because other indicia of competitive position are more appropriate. For example, in developing markets, it may be more appropriate to look at the technical capabilities of the firms that are developing the technologies. In addition, it is important to recognize that even if the plaintiff demonstrates that the defendant has market power, the case does not stop there, of course. The plaintiff must then prove that the defendant used its market power in an anticompetitive way and without sufficient offsetting benefits. Nevertheless, the market definition step is typically a crucial initial hurdle for the plaintiff and a crucial initial defending point for the defendant.

⁴ This absence has been noted before. See, e.g., Thomas G. Krattenmaker, Robert H. Lande, & Steven Salop, *Monopoly Power and Market Power in Antitrust Law*, 76 GEO L. REV. 241 (1987); Lawrence J. White, *Wanted: A New Market Definition Paradigm for Monopolization Cases*, COMP. IND (1999); Lawrence J. White, *Present at the Beginning of a New Era for Antitrust: Reflections on 1982-1983*, 16 REV. IND. ORGANIZATION 131 (2000); Lawrence J. White, *An Appraisal of Antitrust Policy during the Clinton Administration*, in Robert W. Hahn, ed., HIGH-STAKES ANTITRUST: THE LAST HURRAH? 11 (2003).

Given the widespread acceptance of the *Merger Guidelines* approach to market definition in merger cases, one might think that it would be relatively straightforward to transfer this concept to the problem of defining markets in monopolization cases. However, this is not the case. Except for a few special instances, that paradigm cannot be applied without modification to monopolization cases. Indeed, its direct application (when a firm is actually exploiting market power) is likely to lead to the improper definition of relevant markets because of the “cellophane fallacy.”

In this paper we propose a new approach. This approach uses some of the concepts underlying the *Merger Guidelines* paradigm. However, instead of trying to define a market explicitly, our approach proceeds more directly to focus on the identification of the presence or absence of the *anticompetitive effects* of a defendant's behavior. In so doing, our approach explicitly identifies the presence of market power in conjunction with anticompetitive effects and reaches some implicit conclusions about market boundaries, but does not require explicit delineation of these boundaries. In essence, our approach focuses more directly on the presence or absence of the anticompetitive effects of a defendant's behavior, rather than focusing on demand-side substitution at current prices that is commonly used when applying the *Merger Guidelines*.⁵ Moreover, while our approach can be adapted to support existing legal approaches that have typically required the definition of a relevant market, it also produces evidence that may allow courts and economists to sidestep this step in the analysis by allowing the more direct identification of the exercise of market power.

⁵ Most mergers are analyzed at current prices. However (arguably, because of a potential “cellophane”-like problem, the *Guidelines* provide for the analysis at other prices if the current prices are believed to differ from competitive prices: “[T]he Agency will use prevailing prices of the products of the merging firms and possible substitutes for such products, unless premerger circumstances are strongly suggestive of coordinated interaction, in which case the Agency will use a price more reflective of the competitive price.” *Merger Guidelines*, §1.11.

Briefly, we propose asking the following “counter-factual” question in monopolization cases where exclusionary practices are alleged: “Would the preservation of the allegedly foreclosed competitor or group of competitors have led to a small but significant nontransitory decrease in price (SSNDP) by the defendant?” If so, then the defendant likely possesses market power, and the defendant’s actions are likely to have had an anticompetitive effect (and, implicitly, there is a relevant market that includes the defendant, and possibly other firms, in which the defendant could and did exercise market power). If not, then the defendant’s actions were not anticompetitive (implicitly, because the relevant market is sufficiently large so that the [counter-factual] presence of the non-foreclosed plaintiff would not have made a significant difference).⁶

The remainder of this paper will expand upon these ideas. In Section II we reproduce the standard economics concept of monopoly. One of our important points is to emphasize the static nature of the monopoly model -- that the monopolist *maintains* prices that are above competitive levels -- and that the concept of a monopolist’s *raising* its price is misleading, since *raising* the price applies only to a transition from a competitive market structure to a monopoly structure (or where a monopolist perceives a change in market conditions). Nevertheless, loose language by some economists (as well as non-economists) that links monopoly power with *raising* prices has led to unnecessary confusion and even error, including the repeating of the “cellophane fallacy.” In Section III we discuss the “cellophane fallacy” itself at greater length, since it lies at the center of much misguided thinking about market definition for monopolization cases. In Section IV we discuss the *Merger Guidelines* paradigm for market definition, since it provides an example of a successful paradigm (for merger analysis), but also one that has sometimes been misused for

⁶ After we developed our proposed SSNDP test, it was suggested to us that our test is the same as the suggestions found in Krattenmaker, Lande, & Salop at 257, *supra* note 4. Though we acknowledge the similarity of approach, we believe that our development of the two-stage “but for” process considerably clarifies the nature of the question being asked and the nature of the test to be applied.

monopolization cases (leading, again, to the "cellophane fallacy"). In Section V we propose and elaborate on our SSNDP test for anticompetitive effects in monopolization cases. And Section VI provides a conclusion.

II. Monopoly (Market Power)

Figure 1 presents a standard diagram that portrays the profit-maximizing outcome for a non-discriminating monopoly. The monopolist is selling a unique item, as is indicated by the demand curve that has a negative slope: At lower prices the monopolist would be able to sell more of the item (per unit of time); at higher prices the monopolist would be able to sell fewer units of the item. With marginal costs as indicated, the maximizing outcome for the monopolist is point **y** (representing the monopoly price and quantity, P_M and Q_M , respectively).⁷

Point **x** represents the competitive price and quantity (P_C and Q_C , respectively) that would prevail if the same demand curve were served by a group of sellers that were each price takers, that could easily enter and/or exit the industry, and that had cost structures such that the group's long-run supply curve was identical to the monopolist's marginal cost curve.

Monopoly point **y** represents an outcome where the price is higher and the quantity is lower than for the competitive point **x**. The social loss from the monopoly is the deadweight loss triangle, although the transfer of consumers' surplus from buyers to the monopolist clearly weighs importantly in the political support for antitrust policy.

One crucial aspect of the diagram and the monopoly outcome that it represents is that it is *static*. The maximizing outcome is one at which the monopolist *maintains* a price level that is higher than the competitive level. Thus, if we could observe a monopolist "at work," we should observe a high price (relative to the competitive price) and high profits or rents (relative to the competitive rate of return). Holding costs and other relevant variables constant, we should *not* observe the monopolist *raising* its price, except if we observed the firm being transformed from the competitive structure of point **x** to the monopoly seller of

⁷ Also, as all texts point out, the monopoly outcome occurs at the quantity at which marginal revenue (MR) equals marginal cost (MC). And the maximizing outcome can also be represented as $P_M = MC/(1+1/E)$, where P_M is the monopolist's profit maximizing price and E is the price elasticity of demand at that price.

point y .⁸ But rare is the instance where this transformation can be observed. Instead, most monopolization cases involve the allegations that a firm that already has market power has used or is using that position to exclude rivals and thereby enhance its power.⁹ Thus, the question of whether the accused firm *already* has market power has to be determined from observed *levels*, not from an observed transformation or movement from point x to point y . And just the observation of the seller's price alone at a particular point in time, without a basis for comparison, is not enough to indicate whether that price is consistent with point y or point x .

A second aspect of the outcome follows logically from the maximization concept that determines point y : *The monopolist would find a price increase above P_M to be unprofitable*, because its quantity would decline by too much -- i.e., it would lose too many sales.¹⁰

A third aspect flows from this last point. If we observe the monopolist at its maximizing outcome, then we will observe it losing some sales to other sellers of "something." Indeed, this competition at the margin is explicit in "dominant firm" models, where a "competitive fringe" of smaller firms (which are constrained in their expansion possibilities by production technology limitations or brand name/reputation limitations) limits but does not eliminate the market power of the larger (dominant) firm.¹¹

Virtually all professionally trained economists understand and would agree with the preceding discussion. Unfortunately, some prominent economists' writings, especially in

⁸ Similarly, we might observe the demand curve facing the monopolist becoming less elastic. This reduced elasticity could arise as a consequence of the monopolist's exclusionary actions vis-à-vis the plaintiff. But, unless we can observe the "before" as well as the "after" outcomes, we would not be able to observe the *raising* of the monopolist's price.

⁹ Krattenmaker, Lande, & Salop, *supra* note 4, raise the possibility that a previously competitive firm may find a means to exclude rivals and thereby achieve market power. We discuss this possibility in Section V *infra*.

¹⁰ This point is at the heart of the "cellophane fallacy," which is discussed in Section III *infra*.

¹¹ See, e.g., George J. Stigler, *The Dominant Firm and the Inverted Price Umbrella*, 8 J. L. ECON. 167 (1965).

connection with monopolization cases, have tended to muddy these points, by using the word “raise” rather than “maintain” and thus possibly suggesting to those less well versed in microeconomics the idea that the hallmark of market power is the (unexercised?) ability to “raise” prices from *observed* levels and that the apparent inability or unwillingness of an enterprise to “raise” its prices from observed levels implies that it does not have market power. Consider the following:

“It is the ability of a firm to raise prices or market inferior products while excluding competition that constitutes monopoly power.”¹² [seeming to suggest that the inability of an observed firm to raise its price profitably from observed levels implies that the firm does not possess market power]

“Monopoly power is by definition the ability to control (that is to raise) prices *without* inducing entry and expansion.”¹³ [seeming to suggest that the inability of an observed firm to raise its price profitably from observed levels implies that the firm does not possess market power]

“... substantial evidence was introduced at trial that [original equipment manufacturers of personal computers] would not shift to another operating system, even if the price of Windows rose significantly.”¹⁴ [which suggests, contrary to other arguments that they make, that Microsoft was charging prices below the monopolistic level]

“Economists usually define market power as the power to raise price above competitive levels.”¹⁵ [seeming to suggest that the inability of an observed firm to raise its price profitably from observed levels implies that the firm does not possess market power]

Further, major (and often cited) legal opinions in monopolization cases have employed similarly muddying language:

¹² Franklin M. Fisher, John J. McGowan, & Joen E. Greenwood, FOLDED, SPINDLED, AND MUTILATED: ECONOMIC ANALYSIS AND U.S. V. IBM 99 (1983).

¹³ *Id.*, 165.

¹⁴ Franklin M. Fisher & Daniel L. Rubinfeld, U.S. v. Microsoft: An Economic Analysis, in David S. Evans et al., DID MICROSOFT HARM CONSUMERS? TWO OPPOSING VIEWS 13 (2000).

¹⁵ David S. Evans & Richard L. Schmalensee, *Be Nice to Your Rivals: How the Government is Selling an Antitrust Case without Consumer Harm in United States v. Microsoft*, in Evans et al., DID MICROSOFT HARM CONSUMERS? TWO OPPOSING VIEWS 65 (2000).

“Market power is usually stated to be the ability of a single seller to raise price and restrict output...”¹⁶ [seeming to suggest that the inability of an observed firm to raise its price profitably from observed levels implies that the firm does not possess market power]

“Market power comes from the ability to cut back the market's total output and so raise price.”¹⁷ [seeming to suggest that the inability of an observed firm to raise its price profitably from observed levels implies that the firm does not possess market power]

“...a firm is a monopolist if it can profitably raise prices substantially above the competitive level.”¹⁸ [seeming to suggest that the inability of an observed firm to raise its price profitably from observed levels implies that the firm does not possess market power]

In these cases the economists and courts may have implicitly had in mind a comparative statics analysis that contrasts the pricing at a monopolistic equilibrium to that at a competitive equilibrium, since this is the comparison that is provided in most introductory microeconomic theory textbooks.¹⁹ However, the wording nonetheless could mislead others who do not have this fundamental paradigm in mind. Moreover, the comparative statics analysis that may have been intended requires information about the competitive price and quantity, which is usually not directly observable if a firm or group of firms is currently monopolizing.

¹⁶ Fortner Enterprises, Inc. v. United States Steel Corp., 394 U.S. 495, 503.

¹⁷ Ball Memorial Hospital, Inc. v. Mutual Hospital Insurance, Inc., 784 F.2d 1325, 1335 (1986).

¹⁸ U.S. v. Microsoft Corp., 253 F.3d 34, 22 (2001).

¹⁹ Some, if not all, of the authors of these quotes are likely to agree that, in the context of a monopolization case, using the test of raising prices above the current level is wrong (whatever its value in merger cases) and that they intended to advocate a standard that involves testing whether the firm has the ability to raise prices above "the competitive level." See, for example, Franklin M. Fisher, *Market Definition: A User's Guide*, in Finnish Competition Authority, Workshop on Market Definition: Compilation of Papers (2002). However, this position still leaves unexplained how to determine "the competitive level" when one can only observe the current price.

Again, our major point here is fundamental, simple, and worth repeating: *The observation that a firm cannot profitably raise its price from observed levels is insufficient to provide us with the basis for concluding that the firm does not possess market power.*

So, how can we distinguish between a firm that is a monopolist and one that is a competitor? There are two questions -- and possibly a third -- that might seem to offer help in distinguishing between a monopolist and a competitor but that in fact will not offer help in distinguishing between the two. The first is, "Can an observed firm profitably raise its prices for a sustained period of time?" Both the monopolist and the competitor should truthfully respond "No."²⁰ The second is, "Does this firm face competition (at the margin) at its current price?" Both parties can truthfully respond "Yes." The third is, "Does entry play a disciplining role?" For both competitive and monopolistic markets, the answer may be either "Yes" or "No." While competitive markets often have low barriers to entry, markets with high barriers to entry may be competitive if there are sufficient numbers of incumbent competitors. Similarly, while monopolistic markets may be insulated by high barriers to entry and prices may be constrained solely by demand-side substitution, prices may also be constrained by supply-side substitution (or potential entry) because the monopolist limits prices (as is portrayed in, e.g., the dominant firm model discussed above).²¹

A fourth question would seem to offer more help: "What is the price-elasticity of demand for the product that the firm sells?" The monopolist should respond with an

²⁰ While both monopolists and competitors may be able to raise prices for a short period and increase profits over that period, this strategy may not be sustainable over the long run because entry or other structural changes may make it unprofitable. As a result, sustainability of the elevated price is a key characteristic of monopoly power.

²¹ Stigler, *supra* note 11; see also Joe S. Bain, BARRIERS TO NEW COMPETITION (1956). Also, entry into a specific competitive industry might be difficult, but the number of incumbents and their elasticities of supply might both be sufficiently high, so that the absence of easy entry would not substantially affect the competitive outcome. In this case, we might get the perverse result that a competitive firm might answer "No," while a monopolist could answer "Yes."

elasticity that is finite and that satisfies the condition expressed in note 7 *supra*;²² a “perfect” competitor, who produces a commodity that is identical to the product sold by its rivals and who acts as a price-taker, should perceive an elasticity of demand that is near infinite.

However, although the homogeneous commodity world of the perfect competitor is a useful abstraction for highlighting fundamental points of microeconomic theory, most firms produce distinct products or services, for which they face demand curves that are substantially less than infinitely elastic.²³ But, as Chamberlin and Robinson recognized, even distinctive sellers may earn only competitive profit levels if entry by somewhat similar sellers is easy.²⁴ Further, the social loss from “monopoly” and the transfer from buyers to the seller that is associated with monopoly are absent from the Chamberlin/Robinson (“C/R”) model.²⁵ The equilibrium in this C/R entry model is portrayed for an individual seller in Figure 2, where entry and exit drive the only stable outcome: the tangency of the sloped demand curve that the firm perceives with its average cost curve, yielding a price of $P_{C/R}$ and a quantity $Q_{C/R}$.

²² Simple textbook models of monopolistic pricing indicate that monopolists will not operate on the inelastic portion of their demand curves since higher profits are available at higher prices where the demand is sufficiently elastic so as to make yet higher prices less profitable; *see* the formula in footnote 7 *supra*. However, one must consider the extent to which long-term demand is more elastic than short-term demand, since monopolists may find it profitable to constrain prices to the inelastic portion of a short-term demand curve to deter substitution that would occur over the long run if higher prices were charge.

²³ Put slightly differently, the demand curves of differentiated products may be “downward sloping.”

²⁴ Chamberlin described this as “monopolistic competition”; Robinson described it as “imperfect competition.” *See* Edward H. Chamberlin, *THE THEORY OF MONOPOLISTIC COMPETITION*, 7th edn. (1956); and Joan Robinson, *THE ECONOMICS OF IMPERFECT COMPETITION* (1933).

²⁵ There may still be a social loss from excessive variety or even inadequate variety, but this result is subtle and not directly related to any exercise of market power. As Spence and Dixit & Stiglitz separately demonstrated, if one takes the distinctiveness of the sellers’ products as exogenous, then the inefficiency relates to the inability of the sellers to achieve the lower costs that would accompany greater production volumes (if there were fewer varieties being sold) versus the gains from greater varieties of products and services that better match some buyers’ preferences. These competing arguments could imply either that there are too many varieties being sold, or there are too few. But market power is not a meaningful culprit in either scenario. *See* A. Michael Spence, *Product Selection, Fixed Costs, and Monopolistic Competition*, 43 *REV. ECON. STUD.* 217 (1976); and Avinash K. Dixit & Joseph E. Stiglitz, *Monopolistic Competition and Optimum Product Diversity*, 67 *AM. ECON. REV.* 797 (1977).

So, if both a socially inefficient monopolist and a C/R competitor can experience demand elasticities that are finite, then both can respond to the fourth question similarly. Again, it will be difficult to tell them apart.

A fifth question would seem to be definitive: “What are your profit levels (i.e., rates of return on invested capital)?” The monopolist earns above-normal profits; the C/R competitor earns only normal profits. And prior to the 1980s, profit data were an important part of prosecutors’/plaintiffs’ cases against alleged monopolizers.²⁶ While economists have long recognized that one must be careful when using accounting data to analyze market power,²⁷ this concern has increased over time.²⁸ Moreover, it has been pointed out that firms that have market power may not earn supranormal economic profits if they expend these profits on costly efforts to insulate themselves from competition²⁹ or if the monopolistic firms undertake unprofitable expenditures.³⁰ Although profitability data

²⁶ Further, some economists have suggested that the definition of “antitrust monopoly power” should include the requirement that the firm or group of firms that is alleged to have market power is earning “supranormal economic profits.” See Hay, *supra* note 2 at 814.

²⁷ As Bain pointed out: “The unadjusted accounting rate of profit, as computed by the usual methods from balance sheets and income statements, is *prima facie* an absolutely unreliable indicator of the presence or absence either of monopoly power or excess profits in the sense defined.” Joe S. Bain, *The Profit Rate as a Measure of Monopoly Power*, 55 Q. J. ECON. 291 (1941).

²⁸ Two key articles that criticized the use of accounting data are: George J. Benston, *Accounting Numbers and Economic Values*, 27 ANTITRUST BULL. 161 (1982); and Franklin M. Fisher & John J. McGowan, *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits*, 73 AMER. ECON. REV. 82 (1983). For example, Fisher and McGowan wrote: “there is no way in which one can look at accounting rates of return and infer anything about relative economic profitability or, a fortiori, about the presence or absence of monopoly profits.” Nonetheless, others have responded, arguing that there is “substantial evidence that accounting profits do, on average, yield important insights into economic performance.” William F. Long & David J. Ravenscraft, *The Usefulness of Accounting Profit Data: A Comment on Fisher and McGowan*, 74 AM. ECON. REV. 494 (1984). For others who are also less critical of the use of accounting data see: Stephen Martin, *The Misuse of Accounting Rates of Return: Comment*, 74 AM. ECON. REV. 501 (1984); John A. Kay & Colin P. Mayer, *On Applications of Accounting Rates of Return*, 96 ECON. J. 199 (1986); F.M. Scherer, *The Validity of Studies with Line of Business Data: Comment*, 77 AM. ECON. REV. 205 (1987).

²⁹ See e.g., Richard A. Posner, *The Social Costs of Monopoly and Regulations*, 83 J. POL. ECON. 807 (1975) (describing costly activities designed to secure profits).

³⁰ Harvey Leibenstein, *Allocative Efficiency vs. ‘X-Efficiency’*, 56 AM. ECON. REV. 392 (1966).

have not been wholly absent from monopolization cases since then, profitability data have figured far less prominently in prosecutors'/plaintiffs' cases (or, as is explained below, been used as part of a more sophisticated cross-sectional or time-series analysis of pricing behavior).

Is there anything left, short of a thorough, multi-faceted market analysis that considers a variety of indicia? In principle, a competitor's prices should be responsive to and move closely with those of its rivals. But, since the monopolist can face competition at the margin at observed prices, it too may be observed responding to the changes in prices of its "competitors."

For some industries where the relevant markets are (arguably) local (e.g., some banking products and services, airline city-pair routes, rail freight shipment point-to-point routes, many retail services), cross-sectional price data that is combined with market seller concentration data and other relevant data for local areas would permit statistical studies that could determine whether the markets are indeed local and whether market power is being exercised in some of them.³¹ But where markets are regional or national, so that there is insufficient cross-sectional variation to permit such statistical tests and inferences, this route will not be available.

Also, where a market has been subject to structural change, such as the increased concentration of a market through merger, economists have sometimes used time-series data to test for changes in prices with changes in concentration.³² However, this requires

³¹ See the discussion of the *Staples-Office Depot* case in Section IV *infra*. In essence, if there is sufficient cross-sectional variation in seller concentration and other indicia of the presence or absence of market power, the multiple market observations allow us to observe cross-sectionally some of Figure 1's point *x*'s, as well as some point *y*'s, and thus provide the appropriate basis for comparison. For a collection of such studies, see Leonard W. Weiss, CONCENTRATION AND PRICE (1989).

³² See, e.g., David M. Barton & Roger Sherman, *The Price and Profit Effects of Horizontal Merger: A Case Study*, 33 J. INDUS. ECON. 165 (1984). This study looks at changes in firm profits due to a merger and attempts to distinguish variations due to efficiencies from those due to anticompetitive effects.

controlling for changes in costs that may affect profits over time. Moreover, the acquisition of power may have been gradual and/or may have occurred a long time in the past.

Thus, the sharp distinction between a monopolist and a competitor that is maintained in economic models and is embodied in Figure 1 can blur upon application to observed firms that are alleged to have market power. Economists and courts can be left with distinctions based on gradations: We expect a firm with significant market power to face demand elasticities that are smaller than those faced by competitors (perfect or CR) over at least some portion of the relevant price range; we expect a firm with significant market power to exhibit less price sensitivity to actual and potential rivals' prices over at least some portion of the relevant price range; we expect a monopolist to be less threatened by potential entry than are competitive firms; and we expect a monopolist's reported profits, albeit imperfectly represented by accounting data, to be persistently higher.

Even if we accept that distinctions based on gradations are unavoidable, it still would be helpful to have a paradigm that ties together the market power analysis by providing a fundamental touchstone that can guide the multifaceted analysis. In particular, it would be helpful to have a core principle that would allow us to determine whether a firm has “sufficient” market power to warrant a monopolization accusation and to help us delineate market boundaries that should be used in this determination.

In the next Section we discuss a false route: the “cellophane fallacy.” We follow in Section IV with a successful market definition paradigm for merger analysis: the DOJ-FTC *Horizontal Merger Guidelines*. We will argue, however, that the market definition paradigm of the *Merger Guidelines* has only limited applicability to monopolization cases, and that the mis-application of that paradigm involves a re-commission of the “cellophane fallacy.” In Section V we will then offer our proposal.

III. The “Cellophane Fallacy”

On December 13, 1947, the U.S. Department of Justice (DOJ) began a civil suit against E.I. du Pont de Nemours & Co., charging that du Pont had monopolized the manufacture and sale of cellophane in the U.S. Six years later, a federal district court judge decided in favor of du Pont.³³ The DOJ appealed to the Supreme Court, which accepted certiorari and decided the case in 1956. The decision (by a 4-3 vote) again went in favor of du Pont.³⁴

The crucial issue for the case, at both the district court and Supreme Court levels, was whether du Pont had market power.³⁵ And, in turn, that issue hinged on market definition: Was the relevant market cellophane, as the DOJ claimed, in which case du Pont was likely to have market power?³⁶ Or was the relevant market “flexible wrapping materials,”³⁷ as du Pont claimed, in which case du Pont did not have market power?³⁸

Both the district court and the Supreme Court majority decided that the latter was the case. Crucial to those conclusions were the district court's and the Supreme Court

³³ U.S. v. E.I. du Pont de Nemours & Co., 118 F. Supp. 41 (1953).

³⁴ U.S. v. E.I. du Pont de Nemours & Co., 351 U.S. 377 (1956).

³⁵ The Supreme Court did also consider whether, even if du Pont did possess market power, the company had abused that power, and the Court concluded that it had not. But the major issue was that of the possession of market power.

³⁶ From the 1920s until 1951 there were only two sellers of cellophane in the U.S.: du Pont, and the Sylvania Industrial Corporation of America. The latter firm sold its cellophane under an agreement with du Pont (reached in 1933, as the settlement to a patent infringement suit brought by du Pont) that included royalties (paid by Sylvania to du Pont) and that limited Sylvania's output. From 1933 through 1950 du Pont supplied about 76% of the market, and Sylvania supplied 24%. See George W. Stocking & Willard F. Mueller, *The Cellophane Case and the New Competition*, 45 AM. ECON. REV. 29 (1955); and 118 F. Supp. 41, 116 (1953).

³⁷ “Flexible wrapping materials” included cellophane, kraft paper, waxed paper, aluminum foil, polyethylene, pliofilm, glassine, parchment, Saran, and cellulose acetate.

³⁸ Du Pont's share of the “flexible wrapping materials market” was less than 20%; specifically, it was 17.9% in 1949. See 118 F.Supp. 41, 111 (1953).

majority's perceptions of a high cross-elasticity of demand between cellophane and other flexible wrapping materials. The district court concluded:

"Du Pont has no power to set cellophane prices arbitrarily. If prices for cellophane increase in relation to prices of other flexible packaging materials it will lose business to manufactures of such materials in varying amounts for each of du Pont cellophane's major end uses. Relative increases would make competition more difficult to obtain new business."³⁹

"Under market conditions which have prevailed, du Pont does not possess power to raise cellophane prices without regard for competitive pressures. The market would penalize any attempt to do so with lower sales and smaller profits."⁴⁰

"Great sensitivity of customers in the flexible packaging markets to price or quality changes, in final analysis reflects the fact these customers have adequate alternatives to purchasing from du Pont. Price sensitivity of these customers is a reason why du Pont's control over its prices is not such as to give it monopoly power. Competitive influences in the flexible packaging markets place limitations upon du Pont's pricing policies and procedures. They force reduction of du Pont's prices and deny it power to raise prices in the manner of a monopolist."⁴¹

And the Supreme Court majority similarly found:

"But despite cellophane's advantages, it has to meet competition from other materials in every one of its uses."⁴²

"We conclude that cellophane's interchangeability with the other materials mentioned suffices to make it a part of this flexible packaging material market."⁴³

"... it seems to us that du Pont should not be found to monopolize cellophane when that product has the competition and interchangeability with other wrappings that this record shows."⁴⁴

³⁹ 118 F. Supp. 41, 179 (1953).

⁴⁰ 118 F. Supp. 41, 206 (1953).

⁴¹ 118 F. Supp. 41, 207 (1953).

⁴² 351 U.S. 377, 399 (1956).

⁴³ 351 U.S. 377, 400 (1956).

⁴⁴ 351 U.S. 377, 404 (1956).

Note, however, that the district court and the Supreme Court majority were observing the cross-elasticities and the interchangeability of cellophane with other materials *at the observed (maximizing) price that du Pont was charging*. It should come as no surprise that at that price, du Pont's cellophane was "interchangeable" and "competitive" with other materials -- irrespective of whether du Pont had or did not have market power.

Stocking and Mueller, in an article⁴⁵ commenting on the district court's decision, recognized this problem. They argued that cellophane was the relevant market and that du Pont had market power, based on evidence that du Pont's prices had moved independently of the prices of other flexible wrapping materials, and vice-versa, and that du Pont's profits in cellophane were substantially higher than from its manufacture and sale of rayon,⁴⁶ where it faced 15-18 other producers of the same item and where its market share (less than 20%) was about the same as its 17.9% "share" of the "flexible wrapping materials market."⁴⁷

The "cellophane fallacy" is now a well-established phrase in the antitrust lexicon. Nevertheless, the temptation persists for some analysts to draw conclusions about market power (or its absence) by asking whether an observed firm could profitably raise its prices from observed levels.

⁴⁵ Stocking & Mueller, *supra* note 36.

⁴⁶ Stocking & Mueller, *supra* note 36. They drew on data found in Jesse W. Markham, *COMPETITION IN THE RAYON INDUSTRY* (1952).

⁴⁷ The Supreme Court's minority dissent in the case argued that cellophane was the relevant market and that du Pont should be found to have monopolized that market. It quoted from the Mueller & Stocking article, *supra* note 35, and cited the independent pattern of pricing and the high profits. But it did not quite embrace the point concerning a monopolist's facing competition at the margin. *See* 351 U.S. 377, 414 (1956).

IV. The SSNIP Test for Prospective Mergers

For the past two decades the federal antitrust enforcement agencies have been using a specific paradigm for market definition in their analyses of prospective mergers.⁴⁸ The DOJ-FTC *Horizontal Merger Guidelines* define a relevant market, for the purposes of assessing the potential anticompetitive nature of a prospective merger as follows:

“Absent price discrimination, the Agency will delineate the product market to be a product or group of products such that a hypothetical profit-maximizing firm that was the only present and future seller of those products (‘monopolist’) likely would impose at least a ‘small but significant and nontransitory’ increase in price.”

This last phrase has come to be known as the “SSNIP” test. A 5% price increase that can be sustained for one year is often used for the SSNIP test.

In essence, the *Merger Guidelines* define a relevant market as one in which market power could be exercised or enhanced. The subsequent provisions of the *Merger Guidelines* then develop the criteria for asking whether any specific proposed merger is likely to permit the merged firm (unilaterally or collectively with other firms in the market) to exercise market power that was not previously present (or enhance and strengthen any existing market power).

The *Merger Guidelines*, and especially its market definition paradigm and the SSNIP test, have proved durable and successful in two decades of merger analyses.⁴⁹

⁴⁸ The market definition paradigm described below was first proposed by the DOJ in 1982, which immediately began using the paradigm for its merger analyses. See White, “Present...,” *supra* note 4. The *Guidelines* were modestly revised in 1984 and more substantially revised in 1992, when the FTC officially became a co-author (although the FTC had been using the *Merger Guidelines* paradigm from the mid 1980s onward; *see, e.g.*, Lawrence J. White, *Application of the Merger Guidelines: The Proposed Merger of Coca-Cola and Dr Pepper*, in John E. Kwoka, Jr., and Lawrence J. White, eds., *THE ANTITRUST REVOLUTION: THE ROLE OF ECONOMICS*, 2nd edn., 76 (1994)). They were modestly revised again in 1997. They can be found at <http://www.usdoj.gov/atr/public/guidelines/hmg.htm>.

⁴⁹ For a recent collection of assessments of the applications of the *Merger Guidelines*, see Jonathan B. Baker, *Responding to Developments in Economics and the Courts: Entry in the Merger Guidelines*, accessible at <http://www.usdoj.gov/atr/hmerger/11252.htm>; William J. Kolasky & Andrew R. Dick, *The Merger Guidelines*

Unfortunately, the SSNIP test cannot generally be applied to monopolization cases. To ask whether the defendant could profitably increase its price by a “small but significant nontransitory” amount would run afoul of the “cellophane fallacy” discussed above. Both a competitor and a monopolist (say, du Pont circa 1947) should truthfully answer “no” to the question, “Could you profitably raise your price by 5% and sustain it for a year?”

There are, however, limited circumstances in which the *Merger Guidelines* paradigm could be used for market definition purposes in monopolization cases. First, the SSNIP test could be useful for defining the market in monopolization cases in which a defendant’s *proposed* monopolization practice (e.g., some exclusionary measure) has been stayed by an injunction and defendants have not already obtained and exploited market power.⁵⁰ In that context, the SSNIP test properly defines a market in which market power could be exercised, and then the remainder of the case could focus on whether the defendant’s proposed practice would likely create or enhance market power (and whether there are offsetting efficiencies, etc.).

Second, the results of a SSNIP test used in an earlier a merger case might be used in a subsequent monopolization case that involves the same products and geographic areas and that follows shortly after the merger analysis (so that structural changes are unlikely to have occurred that could have changed the dimensions of the relevant market). Let us offer as an example a hypothetical follow-on to the real-life *Staples-Office Depot* merger case.⁵¹ The

and the Integration of Efficiencies into Antitrust Review of Horizontal Mergers, accessible at <http://www.usdoj.gov/atr/hmerger/11254.htm>; David Scheffman, Malcolm Coate, & Louis Silva, *20 Years of Merger Guidelines Enforcement at the FTC: An Economic Perspective*, accessible at <http://www.usdoj.gov/atr/hmerger/11255.htm>; Gregory J. Werden, *The 1982 Merger Guidelines and the Ascent of the Hypothetical Monopolist Paradigm*, accessible at <http://www.usdoj.gov/atr/hmerger/11256.htm>; Oliver E. Williamson, *The Merger Guidelines of the U.S. Department of Justice -- In Perspective*, accessible at <http://www.usdoj.gov/atr/hmerger/11254.htm>.

⁵⁰ This point is made by Gregory J. Werden, *Market Delineation under the Merger Guidelines: Monopoly Cases and Alternative Approaches*, 16 REV. IND. ORG.. 211 (2000).

⁵¹ For discussions of the *Staples-Office Depot* case, see Serdar Dalkir & Frederick R. Warren-Boulton, *Prices, Market Definition, and the Effects of Merger: Staples-Office Depot (1997)*, in John E. Kwoka, Jr., & Lawrence J. White, eds., *THE ANTITRUST REVOLUTION: ECONOMICS, COMPETITION, AND POLICY*, 4th edn. 152 (2004);

crucial argument in that case was the FTC's position (followed and supported by a district court opinion⁵²) that office super stores (OSSs) in metropolitan areas were a relevant market for analyzing the proposed merger of Staples and Office Depot. The FTC argued (as was suggested by simple price comparisons, more refined econometric analyses, and the company documents of the merging parties) that prices for office products at Staples and Office Depot stores were highest in metropolitan areas where only one OSS chain had stores, second highest where two OSS chains⁵³ had stores, and lowest where all three OSS chains had stores.⁵⁴ In essence, metropolitan OSSs were a market in which market power could be (and in some markets had been) exercised.⁵⁵

Suppose that, subsequently, an OSS entrant into a specific metropolitan area, where only a single OSS chain (say, Staples) was present, claimed that Staples had deliberately acquired all of the suitable sites at which an OSS could be located, thereby excluding the entrant. The threshold question -- are metropolitan OSSs the relevant market? -- has already been answered in the affirmative by the FTC in the *Staples-Office Depot* case, from the cross-section price evidence.⁵⁶ And, by assumption, Staples is the only OSS in the specific market in question. The case could then proceed to the questions of whether Staple's actions were in fact exclusionary, what effects they had, and whether there were offsetting efficiency gains.

Jonathan B. Baker, *Econometric Analysis in FTC v. Staples*, 18 J. PUB. POL. MARKETING 11 (1999); Lawrence J. White, *Staples-Office Depot and UP-SP: An Antitrust Tale of Two Proposed Mergers*, in Daniel J. Slottje, ed., MEASURING MARKET POWER 153 (2002); and Jerry A. Hausman & Gregory K. Leonard, *Documents versus Econometrics in Staples* (no date), accessible at <http://www.antitrust.org/cases/staples/hausleon.html>.

⁵² *Federal Trade Commission v. Staples, Inc.*, 970 F. Supp. 1066 (1997).

⁵³ Office Max was and is the third significant OSS chain.

⁵⁴ For a contrary view, see Hausman & Leonard, *supra* note 51.

⁵⁵ The FTC also found that prices fell when there was entry by a new brand of OSS into a metropolitan area that had previously had only a single brand of OSS.

⁵⁶ Equivalently, of course, the plaintiff could collect the same cross-section pricing data, conduct its own statistical analysis, and (presumably) reach the same conclusion.

But most monopolization cases do not provide settings that allow either of these two uses of the SSNIP test. Consequently, an alternative approach is required.

We now turn to our proposal.

V. A Proposed SSNDP Test for Monopolization Cases

A. The proposal.

Suppose that company P (Plaintiff) sues company D (Defendant), claiming that D's exclusionary practices⁵⁷ have prevented P from competing.⁵⁸ We propose a two-stage procedure for determining whether D's actions had a significant anticompetitive effect:

- 1) Estimate what P's "but for" output⁵⁹ would have been in the absence of D's practices.⁶⁰
- 2) Ask whether P's "but for" additional output would have caused a "small but significant nontransitory *decrease* in the price" that D would have charged.⁶¹

⁵⁷ Our proposal can be used to analyze other types of monopolization cases besides cases involving exclusionary practices.

⁵⁸ Or a government agency could be the plaintiff, claiming that there are one or more P's that have been excluded.

⁵⁹ Proper consideration of this matter should include not only the specific firm P that is bringing the suit but also any other similarly situated firms that would have been affected by D's actions. With respect to P, it may be important to consider its long-run output; otherwise, D may be able to undertake actions that foreclose a foothold entrant that would have been able to increase its market share over time or a somewhat larger firm that would have had an even more substantial effect on price (e.g., under the entry standard in §3.4 of the DOJ Guidelines, the firm would have had been large enough to have a "sufficient" effect to discipline the market). This caveat is required because the entry (non-foreclosure) of a fringe firm by the monopolist may not (by itself) have a significant effect on price, even though the monopolist has market power in a well-defined market and is undertaking conduct that has anticompetitive effects. Similarly, it may be the case that a non-foreclosed P could have matured into a significant challenger to D, even if it initially is small at the time of the alleged exclusion. Again, it is important to take into account this long-run view of P's output. As a result, our discussion in this section encompasses this broader view of "P." Given this, an interesting and important issue, is how to account for the "reputation" effect that D's actions might have on future P's that may not be currently identifiable. This issue was explicitly raised in U.S. v. AMR et al., 140 F.Supp. 2d 1141 (2001); 335 F.3d 1109 (2003). For a discussion, see Aaron S. Edlin & Joseph Farrell, *The American Airlines Case: A Chance to Clarify Predation Policy (2001)*, in Lawrence J. White & John E. Kwoka, Jr., eds., *THE ANTITRUST REVOLUTION: ECONOMICS, COMPETITION, AND POLICY*, 4th edn. 502 (2004).

⁶⁰ In some markets, such as bid markets, it may be impractical to estimate market shares or a specific "but for" output for P. In such instances, the two-part test can be modified to ask the following: 1) What would P's long-run competitive capabilities have been? 2) Would P's unconstrained presence have caused a "small but significant *decrease* in the price" that D would have charged?" In some cases, these price effects may be reflected in the failure to develop and/or offer improved products that would have been marketed if P had not been foreclosed and D faced competition from P.

⁶¹ This decrease in price may be in a related market, as has been argued would have been true in the Microsoft

The combination of the two stages can be described as a “SSNDP” test. The same magnitudes as typically apply to the *Merger Guidelines*' SSNIP test seem reasonable: e.g., a 5% decrease, sustained for at least one year.

If the answer to stage 2 is “yes,” then D’s actions are likely to have had an anticompetitive effect. Explicit in this result is the conclusion that D likely possesses market power (and exercised it vis-à-vis P).⁶² Implicit is the conclusion that there is a relevant market within which D could exercise that market power, although our SSNDP test does not explicitly delineate that market, nor does it require that a market be defined.⁶³

We will address *infra* some cautionary restraints that we believe are important in interpreting “yes” answers. But one is so important that we wish to address it here: Suppose that an entrant, perhaps through overly optimistic miscalculation, adds substantial capacity to a competitive market, driving prices below sustainable equilibrium levels. The entrant may be the weakest firm in this situation and may exit.⁶⁴ In any event, it sues one or more of the incumbents, charging that their decreased prices in response to its entry are exclusionary (predatory) and anticompetitive. It may well be the case that the entrant’s effects on one or more of the incumbents would be such that the SSNDP test would be answered “yes.” Nevertheless, so long as the defendant can demonstrate that its actions

case, where Microsoft’s actions in “making life difficult” for Netscape in its sales of browsers were primarily intended to protect Microsoft’s market power in its Windows operating system. In some cases, such as those involving differentiated products, it may be necessary to consider whether D might implement a strategy of maintaining monopoly prices for infra-marginal customers, while allowing marginal customers to move to P. As a result, the test can require consideration of whether the prices paid would have been lower for some of D’s former or potential customers, even though D would not have lowered prices itself.

⁶² There may still be exonerating circumstances that would allow D to avoid being found guilty of monopolization -- e.g., D’s actions had sufficiently large efficiencies.

⁶³ It may be possible to identify other firms that are in the relevant market by considering what firms and products are substitutes for D’s and P’s products at the lower price that would have resulted from P’s unforeclosed output. But see our discussion *infra* of an apparently competitive firm that nevertheless can exercise significant exclusionary market power vis-à-vis an entrant.

⁶⁴ When incumbents use non-price strategies to foreclose an entrant, one must consider whether the entrant’s exit is attributable to the incumbent’s non-price strategy.

were not specifically targeted at the entrant – i.e., that it was reacting to market conditions, and that the profitability of its response was not predicated on its expectation of the demise of the entrant⁶⁵ -- the defendant(s) should not be found guilty of an antitrust violation.

Returning to the general application of the SSNDP test, we believe that if the answer to stage 2 is “no,” then D’s actions are deemed not to have had an anticompetitive effect. This could occur for at least two reasons: At stage 1, D’s actions could be found to have had little or no effect on P’s “but for” output -- e.g., because D’s actions were not truly exclusionary, or because P’s output would have declined anyway because of other circumstances (e.g., P’s own managerial difficulties). At stage 2, the “but for” additional output⁶⁶ from stage 1 could have had little effect on D’s price because perceived actual and potential competitors have kept prices at competitive levels or because the additional output is so small relative to the sum of the output of D and of the other firms that produce commodities that are similar or identical to D’s that again the price consequences are de minimus.⁶⁷ Note that with respect to this “no” answer we do not reach any conclusion as to whether D has market power⁶⁸ or with respect to a delineation of the market boundaries. However, we do not need to do so, since the absence of an anticompetitive effect answers the question that needs answering.⁶⁹

⁶⁵ These are the criteria suggested by Janusz A. Ordover & Robert D. Willig, *An Economic Definition of Predation: Product and Product Innovation*, 91 YALE L. J. 8 (1981). These criteria have been raised anew in the *American Airlines* case, 140 F.Supp. 2d 1141 (2001); 335 F.3d 1109 (2003); see Edlin & Farrell, *supra* note 59.

⁶⁶ We again emphasize, however, that it is P’s long-run unforecasted output that should be used for the SSNDP test.

⁶⁷ On this last point, P’s “but for” additional output might make little difference in a very large market, or it might be absorbed through output reductions by one or more incumbents.

⁶⁸ Despite the absence of a price effect with respect to P and its “but for” output, firm D might nevertheless have market power in the traditional sense of Figure 1, *supra* Section II. For example, while P did not affect prices, this may be because P’s product was not close enough of a substitute, leaving open the possibility that D has market power because it faces no close substitutes.

⁶⁹ There is no anticompetitive effect since there was no effect on price or on other indicia of market performance.

Our SSNDP test is exclusively a price-effects test, and not a test of quantity effects, for an important reason: We want to avoid overly broad attributions of anticompetitive effects. For example, suppose that P's "but for" output addition would have been absorbed by reductions in output by one or more incumbent firms. This is what we would expect to observe in a competitive market with a highly elastic industry supply curve. We see little competitive harm from P's exclusion in most circumstances⁷⁰ and thus would be reluctant to label the outcome "anticompetitive" and implicitly to identify incumbents with the exercise of market power.

By contrast, suppose that D is one among a handful of firms who sell similar or identical items, all of whom behave as price takers, and D's exclusionary practices are found to have had a sufficiently large effect on P that our SSNDP test is answered with a "yes." In this case, even though we might have identified D and its rivals as "competitive" prior to D's actions vis-à-vis P, the fact that D's exclusionary practices did have significant price consequences⁷¹ is an indication that, at least with respect to preventing a rival's expansion (and whose expansion would have had a significant effect on price), D has behaved anticompetitively -- and in this respect exercised market power.⁷²

⁷⁰ We recognize that, even with no price effect, the exclusion of P would mean the loss of any producer's surplus that P might have earned in the "but for" scenario and that this forgone surplus might be greater than the actual surplus earned by an incumbent on the equivalent output. But we see no way of practicably measuring and taking this net loss of surplus into account. Also, it is possible that one or more colluding incumbents in an explicit or implicit cartel would have accommodated P's additional output by decreasing their own output rather than cutting price and risking a destabilization of their arrangement. Here the incumbents do have market power, which would be ignored by our focus on price effects. By using a broad definition of P's "but for" output, *see* note 59 *supra*, we have attempted to address the possibility that a dominant firm or group of collusive firms may accommodate the entrant by reducing output sufficiently to sustain the monopoly price. Absent this consideration, the price effect would be understated, and/or exclusionary behavior that eliminated toehold entrants would be missed.

⁷¹ This could be true if entry is difficult and if D and all of its rivals have supply curves (marginal costs) that are rising significantly.

⁷² This is an example of Krattenmaker, Lande, & Salop's phenomenon, footnote 4 *supra*, of a competitive firm's being able to use exclusionary practices to acquire market power. For example, consider a group of competitors that control a standard setting organization. While these firms may compete with respect to the supply of "old widgets," they may use their control over the standard setting organization to prevent entry by a supplier of "new widgets." When entry by the "new widget" manufacturer would lower old widget

B. Some applications.

We can suggest some (in principle) applications of our SSNDP test to a few recent major monopolization cases. We will describe these applications from the perspective of how the plaintiff might have argued its case with the use of the SSNDP test.⁷³

1. U.S. v. Microsoft.⁷⁴ In the absence of Microsoft's actions that "made life difficult" for Netscape, Netscape's expanded presence (plus Sun Microsystem's Java programming language) would have caused Microsoft to have charged a significantly lower price for its Windows operating system.

2. U.S. v. AMR et al.⁷⁵ In the absence of American Airlines' flight capacity expansions on the city-pair routes that had been entered by Vanguard, Western Pacific, and SunJet, these entrants' continued presence on these routes would have caused American to have charged significantly lower fares.

3. U.S. v. Visa & MasterCard.⁷⁶ (a) In the absence of the two credit card networks' prohibitions on their members' issuance of the cards of any other network, Discover and American Express (and possibly other networks) could have expanded their card issuances, which would have caused Visa and MasterCard to have reduced their fees and to have offered additional features (which would effectively have meant a holding-quality-constant price reduction). (b) In the absence of the governance structures of the two networks (which

prices, perhaps even forcing "old widgets" from the market, the old widget manufacturers have market power, which they exercise when they foreclose entry. Similarly, control over an essential facility by one or more incumbent widget suppliers, which allows them to deter the introduction of new widgets, could have this same price effect and thus evidence market power.

⁷³ We are not necessarily endorsing these plaintiffs' perspectives.

⁷⁴ 253 F.3d 34 (2001).

⁷⁵ 140 F.Supp. 2d 1141 (2001); 335 F.3d 1109 (2003).

⁷⁶ 163 F.Supp. 2d. 322 (2001); 2003 U.S. App. LEXIS 19281.

allowed major issuers of credit cards in one network to be on the board of directors of the other network), innovation in credit cards would have been more rapid (which, again, would have meant a holding-quality-constant price reduction).

4. Wal-Mart et al. v. Visa & MasterCard.⁷⁷ In the absence of Visa and MasterCard's insistence that retailers must accept all payment cards that have their respective logos, the two networks would have faced more competition in debit cards and would have significantly reduced their fees associated with their off-line debit cards.

5. Toys "R" Us, Inc. v. F.T.C.⁷⁸ In the absence of Toys "R" Us's restraints on toy manufacturers' sales of toys to warehouse clubs, warehouse clubs would have had larger sales and Toys "R" Us's prices for those toys would have been significantly lower.

C. Some Issues

1. The Chamberlin/Robinson competitor. Any monopolization test cannot avoid the issue of how to deal with the distinct seller who faces a downward sloping demand curve but who does not exercise significant market power (i.e., a Chamberlin/Robinson competitor) -- but who may be sued and charged with exclusionary behavior. As a concrete but hypothetical example, imagine that Sam, the owner of Sam's Corner Delicatessen, convinces his departing general manager Nora, to sign a "no compete" contract before she leaves. Immediately after cashing her severance check, however, Nora sues Sam, arguing that the contract should be voided, because it is exclusionary and anticompetitive. Even if Nora's Mid-Block Eatery could have caused Sam to drop his prices by more than 5%, it doesn't mean that this contract was anticompetitive. For example, it would not be anticompetitive if there are other equally well-positioned entrants that can cause the same price effect.

⁷⁷ 280 F.3d 124 (2001).

⁷⁸ 221 F.3d 928 (2000).

2. Innovation. It is possible that the excluded firm P would have been an innovator, producing items that would have taken sales away from D, not by itself but in combination with other innovative products. Nevertheless, our SSNDP test is likely to reach a sensible conclusion. If D's practices were intended to inhibit P's innovation, then it is likely that D feared P's direct or indirect competition and the consequences for D's prices.⁷⁹

3. Exclusionary reputation. As we briefly mentioned in footnote 59 *supra*, our SSNDP test might find that firm P had been excluded but that it was too small to have otherwise precipitated a 5% price decrease from D.⁸⁰ Nevertheless, D's exclusionary actions may earn it a reputation, which would deter future P's (who are currently not identifiable) from even coming forward. As courts have recognized, this can be a difficult empirical question for monopolization tests (see e.g., U.S. v. AMR et al., 140 F.Supp. 2d 1141 (2001); 335 F.3d 1109 (2003)).

4. An absence of exclusion? Suppose that an enforcement agency were to bring a "pure" structural case, with no allegations of exclusionary conduct, against firm D.⁸¹ For example, a case could involve allegations of collusive behavior, including the adoption of facilitating practices. Although rare, such cases have been brought.⁸² For such cases, our

⁷⁹ The same logic would apply if D was a full-service seller and X was a discounter or industry maverick.

⁸⁰ We have addressed this problem by defining "P's output" to include the output of other similarly situated firms that would have been affected by D's actions.

⁸¹ However, past government "structural" cases have usually included allegations of excluded parties. For example, in the *Cellophane* case the government alleged that du Pont had discouraged other firms from entering into the production of cellophane; see 351 U.S. 377, 425 (1956). In *Alcoa*, the government argued that Alcoa had preemptively gained control of crucial inputs, such as hydro power sites and bauxite supplies; see U.S. v. Aluminum Co. of America et al., 148 F.2d 416 (1945); and Thomas G. Krattenmaker & Steven Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L. J. 209 (1986); but see also John E. Lopatka & Paul E. Godek, *Another Look at Alcoa: Raising Rivals' Costs Does Not Improve the View*, 35 J. L. ECON. 311 (1992). Similar allegations were raised in U.S. v. United Shoe Machinery Corp., 110 F. Supp. 295 (1953); see also Carl Kaysen, UNITED STATES V. UNITED SHOE MACHINERY CORPORATION: AN ECONOMIC ANALYSIS OF AN ANTI-TRUST CASE (1956).

⁸² See, e.g., E.I. Du Pont de Nemours & Co. v. FTC, 729 F.2d 128 (1984). For a discussion, see George A. Hay, *Facilitating Practices: The Ethyl Case* (1984) in John E. Kwoka, Jr., and Lawrence J. White, eds. THE ANTITRUST REVOLUTION: ECONOMICS, COMPETITION, AND POLICY, 3rd edn., 182 (1999).

SSNDP test could be modified to ask what the price effect would be if another firm that produced the same product as D entered and behaved competitively.

5. Empirical support. We recognize that our SSNDP test requires two levels of empirical support. First, the “but for” output of P must be estimated;⁸³ then the consequence for D’s prices⁸⁴ of P’s “but for” additional output must also be estimated. Both of these stages involve investigations of the counterfactual and thus pose difficult empirical questions.⁸⁵ However, two decades ago, after the introduction of the SSNIP paradigm for merger analysis, some commentators expressed concerns about the ability of the SSNIP paradigm to be supported by empirical evidence. As proved to be the case for the SSNIP paradigm, the point of developing a paradigm of this type is to make sure that the right questions are being asked so that all available evidence can be brought to bear on a central issue. Moreover, as has been true for the SSNIP test, once the right paradigm is in place, economists are better able to focus their talents on developing ways of measuring the critical elasticities and loss ratios that underlie the key economic relationships that define the market and determine if a firm or group of firms have market power in that market.

⁸³ As explained above, alternatively P’s “but for” competitive significance must be evaluated.

⁸⁴ As is conventional in this type of discussion, this assumes the anticompetitive effects are limited to prices. As pointed out above, anticompetitive effects may also take the form of a reduction in the quality of the product offerings at a given price.

⁸⁵ We are especially wary of the tendency of excluded firms to make liberal estimates of their “but for” output. For a critique of one such instance, see Frederick R. Warren-Boulton, *Resale Price Maintenance Reexamined: Monsanto v. Spray-Rite*, in John E. Kwoka, Jr., and Lawrence J. White, eds., *THE ANTITRUST REVOLUTION: ECONOMICS, COMPETITION, AND POLICY*, 3rd edn. 364 (1999).

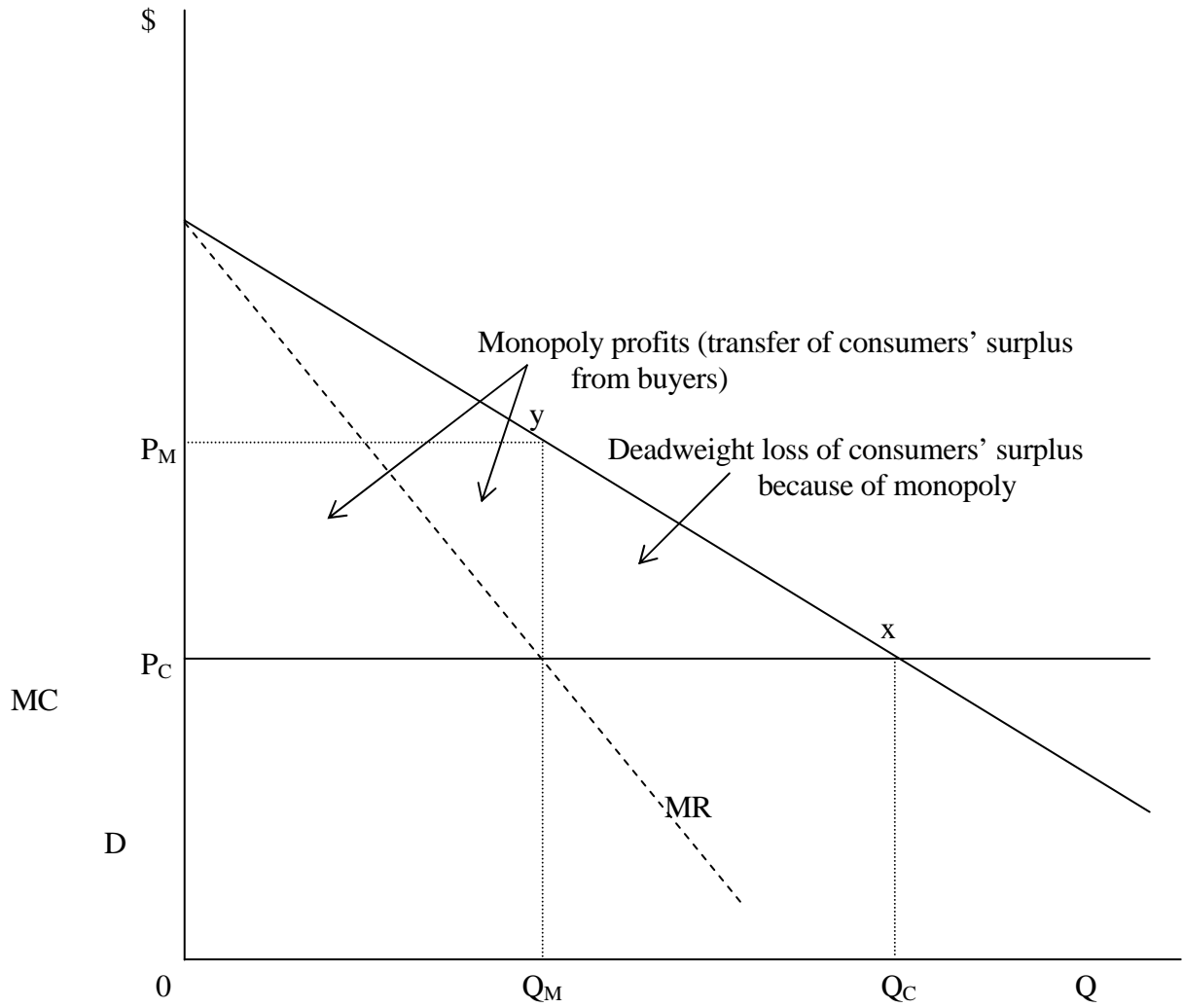
VI. Conclusion

The current absence of a common paradigm for market definition and the identification of market power in monopolization cases is a serious problem for modern antitrust. Absent a paradigm that is similar to the SSNIP paradigm that is used in merger analysis, economists and jurists are prone to re-committing the “cellophane fallacy” or otherwise making ad hoc assumptions to achieve a specific result.

To address this problem we propose a SSNDP test: If firm P claims to have been the victim of D's exclusionary practices, what would P's output have been in the “but for” world of the absence of these practices and would P's additional output have caused a “small but significant nontransitory *decrease* in the price” that D would have charged? This SSNDP test provides indirect inferences as to the delineation of the relevant market and, more importantly, allows one to focus directly on the likely anticompetitive effects of D's actions and thereby on the exercise of market power.

We believe that our SSNDP test can be implemented empirically and represents a way, comparable to the SSNIP test of the *Horizontal Merger Guidelines*, of providing traction for this important starting point in monopolization cases.

Figure 1: A Comparison of Monopoly and Competition



P_C = competitive price
 Q_C = competitive quantity
 P_M = monopoly price
 Q_M = monopoly quantity

Figure 2: The “Tangency” Equilibrium for a Chamberlin/Robinson Competitor

