

Lessons from the evolution of merger guidelines in the United States

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Abstract

Merger Guidelines in the United States were developed to provide antitrust guidance to businesses considering merging. The current process for defining markets was introduced in the 1982 Merger Guidelines, and was based on court cases and scholarly research stretching over many decades. The basic approach is to select a group of products that might constitute a market and analyze whether, if these products were produced by a monopoly, the firm could profitably increase price. This approach is not without controversy and challenges, but it remains a core approach. More recently the role of developing market definitions has been diminished by the development of tools for looking at product substitutability more directly. In this paper we examine the development of market analysis for mergers in the United States with the goal of elucidating the importance of the evolution of the Guidelines for businesses. .

Keywords: mergers, Department of Justice, antitrust, Merger Guidelines

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1. Introduction

Mergers are a common means for companies to restructure themselves in response to deregulation, technology change, a desire to achieve scale, and the like. Because mergers can lessen competition, antitrust regulators and sector regulators scrutinize many mergers, with the potential of stopping individual mergers them from occurring. This potential creates risks for firms that are interested in merging. Antitrust regulators in the United States have sought to diminish this risk by developing guidelines for how they will analyze proposed mergers, with particular emphasis on how to define markets. In this paper we examine the development of these guidelines and derive insights for merging companies.

Defining relevant markets is often a critical stage in assessing market competition; the process is complex, and no foolproof method is known even though there exist commonly accepted practices. If the market is defined too narrowly, then market analysis is likely to overestimate the likelihood that firms possess market power. Conversely, if the market is defined too broadly, then it may appear that no firms, even monopolists, have market power, even though at least some firms are able to receive supernormal profits by limiting output. If no firms possess market power, regulation is unlikely to improve social welfare outcomes because market forces already provide customers with opportunities to choose among rivals that are competing to earn the customers' business. Jonathan Baker observes that throughout the history of antitrust litigation in the United States, market definition has determined case outcomes more than any other issue. (Baker 2007)

The U.S. approach for defining what is termed the "relevant market"¹ has remained essentially the same for several years, but it is not without controversy.² The approach examines

¹ "Relevant market" and "antitrust market" are terms for defined markets in antitrust in the United States.

² See, for example, Carlton (2007), Baker (2007) and Werden (1992).

markets in two dimensions – product aspects and geographic aspects. In considering the product aspects, authorities attempt to determine whether products with similar attributes that customers view as effective substitutes are reasonably available. Regarding geography, the U.S. approach recognizes that customers can be limited by geography in their search for products and so examines the degree to which firms possess market power within certain geographic boundaries. Both dimensions are analyzed using a hypothetical monopolist test, which considers whether a hypothetical monopolist within the product or geographic boundaries in question would be able to profitably raise and maintain prices above competitive levels. If the hypothetical monopolist cannot, then the market boundaries in question are deemed too narrow, and the hypothetical monopolist test is applied to a slightly broader potential relevant market. In the scholarly literature, Areeda and Turner (1978) and Sullivan (1977) expressed this basic idea, and a 1978 DOJ report to Congress is the first known published formulation of the paradigm explicitly referencing a “hypothetical monopolist.”³

In the U.S. market definition focuses on demand-side substitutability, which centers on customers’ willingness and ability to substitute among the products in question. Supply-side substitutability focuses on other firms’ willingness and ability to defeat an attempted price increase by shifting production from one product to the product in question. While the European Commission considers both demand-side and supply-side substitutability when defining the relevant product and geographic markets, in the U.S., supply-side substitutability is considered only later when the regulator examines existing and potential participants in the market and also barriers to entry. It is unclear that the two approaches give different results.

³ U.S. Department of Justice, Antitrust Division, Competition in the Coal Industry 2627 (report to Congress pursuant to Section 8 of the Federal Coal Leasing Amendments Act of 1975) (May 1978).

These standard approaches to market definition rely upon market information and product features that are believed to exist at a particular point in time and therefore are not dynamic. If called upon to re-analyze a market, perhaps because of a new proposed merger in a market that had been recently considered, the U.S. authorities would likely draw upon previous analyses and incorporate any new evidence that might be available.

The goal of this paper is to expound upon how the U.S. approach could be used to examine changing product and geographic markets and draw lessons for the future. The evolution of this approach is critical for businesses to recognize as they operate in changing industries and seek guidance from both the Guidelines and court cases. The paper proceeds in the next section with a historical background that examines the development of market delineation as a first step in structural analysis, the contributions of litigated cases and scholarly research, and the development and refinement of the U.S. Department of Justice (DOJ) Merger Guidelines (hereafter, Merger Guidelines). Section 3 describes the Merger Guidelines' approach to defining relevant product and geographic markets. Section 4 examines reviews and critiques of the Merger Guidelines, and the final section is the conclusion.

2. Historical Background

2.1. Context for the First Merger Guidelines

The 1968 Merger Guidelines were the DOJ's first antitrust guidelines.⁴ Although these guidelines reflected primarily the dislike for large enterprises (Shapiro 2010), the notion of delineating markets has a history in both economics and law. The early economics literature implicitly defined market boundaries by explaining that trade occurs freely throughout a market, so arbitrage limits price differentials to differences in production costs, most notably transportation costs. (Stigler 1942; Marshall 1920) Bane (1952) introduced substitutability as a

⁴ [1981] 1 Trade Reg. Rep. (CCH) ¶ 4510.

method for determining markets by defining an industry as firms producing close substitutes based upon their cross-elasticity of demand.⁵ Machlup (1952) added cross-elasticity of supply as a factor to consider for delineating markets.

Merger guidelines employ the term “relevant market” to identify the boundaries within which the antitrust regulators will search for market power.⁶ The earliest use of the term “relevant market” in a reported court case was *United States v. Columbia Steel Co.*⁷ The Supreme Court, which decided the case in 1948, recognized the complexity of defining the relevant market and declined to establish rules. Subsequently in the *Cellophane*⁸ case, the Delaware District Court (in 1953) and the U.S. Supreme Court (in 1956) made much-criticized decisions regarding market definition. The case weighed whether Du Pont as the owner of cellophane exercised market power in the market for flexible wrapping materials. The Supreme Court found that there existed a substantial cross-elasticity between cellophane and other flexible wrappings, and that cellophane and these other wrappings had reasonable interchangeability, and therefore Du Pont had not exercised market power. What the courts failed to recognize was that if Du Pont had market power within the market that included cellophane and raised its price to the monopoly level, then it was already exercising market power, so much so that any further increase in price would cause customers to migrate in sufficient numbers so as to render the attempt at a further price increase unprofitable.⁹ (Stocking and Mueller 1955) Despite this error,

⁵ Cross-elasticity of demand refers to the impact that a price change in one product has on the demand for another product.

⁶ US DOJ & FTC Horizontal Merger Guidelines (2010), page 3.

⁷ 334 U.S. 495, 508 (1948).

⁸ *Cellophane*, 118 F. Supp. at 41-233; *Cellophane*, 351 U.S. at 380.

⁹ The failure of the Supreme Court to consider the possibility that the increased cross-elasticity of demand between cellophane and other flexible wrapping may have been due to the fact that DuPont already was charging a monopoly price has been referred to as the "Cellophane fallacy." The error occurs when defining markets by cross-elasticity of demand without a reference price.

the Court did establish the principle that market definition rests solely on buyer substitution possibilities, which has been foundational in the Merger Guidelines. (Baker 2007)

The 1950 Celler-Kefauver Act marked the beginning of what some consider modern merger law in the United States.¹⁰ (Kolasky and Dick 2003) The first case to come before the Supreme Court under Celler-Kefauver was *Brown Shoe*,¹¹ which involved the third and eighth largest shoe retailers. If combined, the merged company would have had about 5 percent of retail shoe sales in the United States, but the Court concluded that the market was "fragmented" in that while many cities had a large number of competitors, not all cities did. The Court concluded that effective competition had to be identified with reference to the product market and also the geographic market:

The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it. However, within this broad market, well defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes. The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors. (footnotes omitted)

The criteria to be used in determining the appropriate geographic market are essentially similar to those used to determine the relevant product market. Congress prescribed a pragmatic, factual approach to the definition of the relevant market, and not a formal, legalistic one. The geographic market selected must, therefore, both "correspond to the commercial realities" of the industry and be economically significant. Thus, although the geographic market in some instances may encompass the entire Nation, under other circumstances, it may be as small as a single metropolitan area. (footnotes omitted)

Two years later, the Court emphasized the importance of limiting market power in the *Philadelphia National Bank* case,¹² in which the second and third largest commercial banks in Philadelphia proposed to merge. The merged bank would have had a 30 percent market share and

¹⁰ The Celler-Kefauver Act gave authorities stronger ability to limit vertical and conglomerate mergers.

¹¹ *Brown Shoe Co. v. U.S.*, 370 U.S. 294 (1962).

¹² *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963)

the combined market shares of the leading firms would have increased 33 percent. In deciding the case, the Court established that there should be a strong, although rebuttable presumption of illegality for mergers that significantly increase market concentration, stating that "[c]ompetition is likely to be greatest when there are many sellers, none of which has any significant market share."

In the 1966 *Von's Grocery*¹³ case the Court focused on a simple numerical examination of market concentration. The Court determined that it was unlawful for two grocery store chains, holding a combined share of 7.5 percent of the grocery market in Los Angeles, to merge because the four leading firms accounted for 24.4 percent of sales, and the top eight firms accounted for 40.9 percent. The Court did not analyze the likely competitive effects of the merger, they simply quantified market concentration.

Concomitant with these cases was an economic debate on the foundations for antitrust analysis. Joe S. Bain (1956) and George Stigler (1942, 1964, 1968) represented contrasting views. Bain emphasized the effect of market structure on firm conduct and industry performance, resulting in the structure-conduct-performance (SCP) paradigm. His work emphasized how structure created entry barriers that prevented new competition even when incumbents received super competitive profits. Stigler (1968) also examined market concentration, but did not take structure as given and examined the role of government intervention in limiting competition. He questioned the common assumptions about capital market imperfections, identified practices previously thought to hinder competition as actually indicating healthy competition, and explained the role of regulation, patents, tariffs and other government action in limiting competition.

¹³ *United States v. Von's Grocery Co.*, 384 U.S. 270, 301 (1966) (Stewart, J., dissenting).

The court cases, more than the economic debate, provided the foundation for the 1968 Merger Guidelines. The Guidelines appear to derive from Kaysen and Turner (1959), at least in part because Turner was head of the DOJ's Antitrust Division at the time of the adoption of these Merger Guidelines. Kaysen and Turner emphasized direct comparisons of firms and markets via benchmarks, but the 1968 Merger Guidelines were more stringent, adopting market share limits based on recent merger decisions by the courts. The DOJ career staff was skeptical of providing guidelines, but agreed that doing so decreased industry risk. (Williamson 2002)

2.2. The 1982 Merger Guidelines

Economic analysis began to play a more significant role in both court cases and DOJ guidelines in the 1970s and 1980s. The Supreme Court's 1974 decision in *United States v. General Dynamics Corp*¹⁴ was the first such case. It involved the proposed merger of two firms engaged in the production and sale of coal. Moving beyond a simple market share analysis, the Court held that General Dynamics' market share did not reflect the company's competitive position because a substantial portion of its coal reserves were already committed under contract and the company's depleted reserves limited its ability to manipulate coal prices or exercise market power.

Furthering the reliance on economic analysis, the 1982 Merger Guidelines made a significant advance in how markets could be defined. (Shapiro 2010) The Guidelines adopted the hypothetical monopolist concept¹⁵ and identified three factors that could constrain market power:

¹⁴ *United States v. General Dynamics Corp.* 415 U.S. 486 (1974).

¹⁵ The hypothetical monopolist test is used as a framework to determine if a relevant product market is properly defined as a first step before it is determined whether a company has monopoly power in that market. In applying the test, the question posed is whether a hypothetical monopolist can profitably impose a small but significant and non-transitory increase in price in the product market as defined. If so then the market is correctly defined, and from here the analysis could go forward to determining whether antitrust laws are being violated if the company at issue

demand substitutability, supply substitutability, and entry. The economic logic was understandable and the approach was practical. Demand substitutability referred to customers' willingness to substitute one product for another. Supply substitutability and entry referred to the ability of producers not currently selling the particular product to begin doing so.¹⁶ The 1982 Merger Guidelines also introduced the Herfindahl-Hirschman Index (HHI), a market concentration index calculated as the sum of the squares of the market shares of all the firms in a market.¹⁷ The HHI concentration measure is related to Stigler's oligopoly theory (Stigler 1964) and was the foundation of the DOJ's collusion analysis. (Shapiro 2010; Scheffman, Coate and Silva 2002)

2.3. Revisions

The Merger Guidelines have been changed over time, expanding on the core of the 1982 version. The 1984 Merger Guidelines modified the 1982 version by explaining that using a five percent price increase in the hypothetical monopoly test was not a rule, that price assumptions were to be calibrated to existing prices, that foreign competition would be treated like domestic competition, that efficiencies would be considered, and that standards for failing divisions would be similar to those applied to failing firms. The 1992 version of the Merger Guidelines were the first to be issued jointly by the DOJ and the Federal Trade Commission (FTC).¹⁸ They were

has too much market power. If not, then the relevant product market is defined too narrowly and must be expanded. Legal Information Institute, available at http://www.law.cornell.edu/wex/hypothetical_monopolist_test

¹⁶ The difference between the two being that entry required more than one year for the new supply to occur because of the new investment needed for production and distribution.

¹⁷ By squaring the market shares, the HHI gives relatively greater weight to larger firms in the market.

¹⁸

again modified in 1997, introducing unilateral effects¹⁹ and a more sophisticated analysis of entry. (Shapiro 2010; Scheffman, Coate and Silva 2002)

Under the 1992 Merger Guidelines, defining relevant markets began with product markets, explored the hypothetical monopolist test, and concluded with geographic markets. In these Guidelines, market definition focused solely on the demand side:

A market is defined as a product or group of products and a geographic area in which it is produced or sold such that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future producer or seller of those products in that area likely would impose at least a ‘small but significant and nontransitory’ increase in price, assuming the terms of sale of all other products are held constant. A relevant market is a group of products and a geographic area that is no bigger than necessary to satisfy this test. The ‘small but significant and nontransitory’ increase in price is employed solely as a methodological tool for the analysis of mergers: it is not a tolerance level for price increases.²⁰

Supply side issues were considered in the identification of firms that may participate in the relevant market.²¹

The 1992 Merger Guidelines provided that the relevant considerations for analyzing likely buyer reactions to the price increase included:

- (1) evidence that buyers have shifted or have considered shifting purchases between products in response to relative changes in price or other competitive variables;
- (2) evidence that sellers base business decisions on the prospect of buyer substitution between products in response to relative changes in price or other competitive variables;
- (3) the influence of downstream competition faced by buyers in their output markets; and
- (4) the timing and costs of switching products.²²

¹⁹ More specifically, according to Section 6.1 of the 2010 Merger Guidelines, unilateral effects are as follows: “A merger between firms selling differentiated products may diminish competition by enabling the merged firm to profit by unilaterally raising the price of one or both products above the pre-merger level. Some of the sales lost due to the price rise will merely be diverted to the product of the merger partner and, depending on relative margins, capturing such sales loss through merger may make the price increase profitable even though it would not have been profitable prior to the merger.”

²⁰ U.S. Department of Justice, “1997 Merger Guidelines.” <http://www.justice.gov/atr/hmerger/11251.htm>. (Accessed May 13, 2013.)

²¹ Ibid.

²² U.S. Department of Justice, “1997 Merger Guidelines.” <http://www.justice.gov/atr/hmerger/11251.htm>. (Accessed May 13, 2013.)

Acceptable evidence of likely buyer substitution could be divided into five categories (Baker 2007):

- (1) Past buyer responses, including estimates of demand elasticities and econometric analyses of natural experiments.
- (2) Buyer surveys, including formal survey instruments, informal customer interviews, and bidding data.
- (3) Product characteristics, including technical properties, geographic availability, switching costs, and shipping costs.
- (4) Seller conduct, including possible rivals' responses to price and product changes.
- (5) Views of industry experts, such as industry consultants, trade associations, and stock analysts.

In conducting analyses, the DOJ generally used prevailing product prices for the products in question and the possible substitutes. If, however, the DOJ determined that prevailing prices resulted from coordinated interaction, the agency used prices that it believed to be more reflective of competitive market conditions. The Department also could use likely future prices that would prevail absent the merger being investigated if such prices could be predicted with reasonable reliability, such as price changes that would result from changes in regulations that affect prices.²³

The analysis of product market definition to this point assumed that price discrimination would not be profitable for a hypothetical monopolist. If firms can profitably raise prices to a targeted group of customers, then the agencies may define the relevant markets to recognize these susceptible groups. The possibility of price discrimination affects market definition, market share analysis, and the evaluation of competitive effects.

²³ U.S. Department of Justice, "1997 Merger Guidelines." <http://www.justice.gov/atr/hmerger/11251.htm>. (Accessed May 13, 2013).

For price discrimination²⁴ to occur, the relevant suppliers must be able to price differently to targeted customers by segmenting the market either through direct observation of customer types or self-selecting pricing schemes. The suppliers also must ensure that the targeted customers are unable to engage in arbitrage, perhaps by reselling to other customers.

In cases where prevailing prices reflected price discrimination – i.e., situations where a hypothetical monopolist could identify and price differently to targeted buyers who could not substitute to other products or be resold the product in question by other buyers – the DOJ identified product markets consisting of a particular use or uses by groups of buyers.

To determine the relevant geographic market, the DOJ would follow a process similar to that used for product markets. It would begin with a small geographic region – the location of each merging firm or of each plant in the case of a multiplant firm – and assume that a hypothetical monopolist was the only present or future producer of the relevant product at locations in that region. It then would perform the SNNIP test, holding constant the terms of sale for all products outside the assumed region. If the locations outside the region were sufficiently attractive that the price increase would result in a reduction in sales large enough that the price increase unprofitable, the tentatively identified geographic area would be considered to be too narrow.

As in the case of delineating a product market, the DOJ considered:

²⁴ There are three types of price discrimination typically recognized in economics. First degree price discrimination is individual pricing, where a firm prices its product differently for each customer. Engaging in this form of price discrimination depends upon the firm being able to accurately identify customers and prohibiting resale between customers. Second degree price discrimination encompasses offering differentiated products that are designed to attract specific market segments based upon their willingness to pay. This form of price discrimination depends upon the firm's ability to design such products in a way that separates the market segments and limits arbitrage. The third form of price discrimination is group pricing, where a firm offers discounts or other special pricing to particular groups. For example, firms may offer special prices to the elderly. As with other forms of price discrimination, this form requires the firm to accurately identify the customers and limit resale.

- (1) evidence that buyers have shifted or have considered shifting purchases between different geographic locations in response to relative changes in price or other competitive variables;
- (2) evidence that sellers base business decisions on the prospect of buyer substitution between geographic locations in response to relative changes in price or other competitive variables;
- (3) the influence of downstream competition faced by buyer in their output markets; and
- (4) the timing and costs of switching suppliers.²⁵

when analyzing the reactions of buyers to a price increase. The agency applied the smallest market principle, as it did in the product market case.

In situations where price discrimination existed, the analysis of geographic market definition considered “additional geographic markets consisting of particular locations of buyers for which a hypothetical monopolist would profitably and separately impose at least a ‘small but significant and non-transitory increase in price.’”²⁶

3. Examination of the 2010 Merger Guidelines’ Approach to Defining Relevant Product and Geographic Markets

The most recent Merger Guidelines were adopted in 2010 and provide tools for estimating competitive effects that do not require market definition. For example Upward Pricing Pressure Analysis is referenced, and this method of analysis does not require the definition of markets (Farrell and Shapiro 2010). The 2010 Guidelines acknowledge that defining markets is more difficult in differentiated product markets than in markets of fungible products, and that results of market analyses can vary depending on the starting point of the analysis. Furthermore they

²⁵ U.S. Department of Justice, “1997 Merger Guidelines.” <http://www.justice.gov/atr/hmerger/11251.htm>. (Accessed May 13, 2013).

²⁶ Another geographic dimension is whether a firm from a different location would expand its products into the market in question.

place additional emphasis on incentives for unilateral price increases and methods for measuring them.²⁷ In the Guidelines, market definition continues to focus on the demand side:

Market definition focuses solely on demand substitution factors, i.e., on customers' ability and willingness to substitute away from one product to another in response to a price increase or a corresponding non-price change such as a reduction in product quality or service. The responsive actions of suppliers are also important in competitive analysis. They are considered in these Guidelines in the sections addressing the identification of market participants, the measurement of market shares, the analysis of competitive effects, and entry.²⁸

The Guidelines also continue to recognize that customers have options in terms of both product characteristics and geographic space.

Customers often confront a range of possible substitutes for the products of the merging firms. Some substitutes may be closer, and others more distant, either geographically or in terms of product attributes and perceptions. Additionally, customers may assess the proximity of different products differently. When products or suppliers in different geographic areas are substitutes for one another to varying degrees, defining a market to include some substitutes and exclude others is inevitably a simplification that cannot capture the full variation in the extent to which different products compete against each other.²⁹

The Merger Guidelines still are designed mainly to provide guidance to firms on how the DOJ and the FTC will view mergers but admit sufficient flexibility to allow the agencies to adapt their analyses to the facts of particular cases. In the agencies' views, a merger enhances market power if it encourages or enables higher prices, reduced output, diminished innovation, or other customer harm. These results can occur by eliminating competition between the merging parties (unilateral effects) or by increasing the risk of coordinated, accommodating, or interdependent behavior among rivals (coordinated effects).

²⁷ U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

²⁸ U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

²⁹ U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

The Guidelines identify five types of evidence of enhanced market power that the agencies consider:

1. **Actual Effects Observed in Consummated Mergers:** The agencies examine the results of past mergers to learn the actual competitive impacts.
2. **Direct Comparisons Based on Experience:** Related to the observation of actual effects, the agencies look for “natural experiments” and evidence based on variations among markets similar to the markets in question.
3. **Market Shares and Concentration in a Relevant Market:** The agencies continue to consider the merging parties’ market shares, the level of concentration, and the change in concentration caused by the merger.
4. **Substantial Head-to-Head Competition:** The agencies consider whether the merging firms have been, or would likely become, head-to-head competitors.
5. **Disruptive Role of a Merging Party:** The agencies consider whether a merger eliminates a “maverick” firm that disrupts markets to the benefit of customers.

In considering these types of evidence, the agencies gather information and opinions from the merging parties, customers, other industry participants, and industry observers.

The agencies at times use diversion ratios to examine the extent of direct competition between products of merging firms. According to the 2010 Guidelines, a “diversion ratio is the fraction of unit sales lost by the first product due to an increase in its price that would be diverted to the second product.” For example, an agency through empirical analysis or other means determine that a 10 percent price increase in product *A* sold by merging firm 1 would cause a 100,000 increase in the unit sales of product *B* sold by merging firm 2. If this 100,000 figure is sufficiently close the number of unit sales loss for product *A*, then the two products could be viewed as close substitutes. Such a price increase might be profitable for the merged firm if, for example, the profit margin on product *B* is greater than that for product *A*.^{3.1}

The Role of Market Definition

Market definition plays two roles in the new guidelines. In one role it helps the agencies identify the line of business and the areas of the country in which competitive concerns may

arise. Market definition also allows the agencies to identify market participants, measure market shares, and estimate market concentration.

Market shares of different products in narrowly defined markets are more likely to capture the relative competitive significance of these products, and often more accurately reflect competition between close substitutes. As a result, properly defined antitrust markets often exclude some substitutes to which some customers might turn in the face of a price increase even if such substitutes provide alternatives for those customers. However, a group of products is too narrow to constitute a relevant market if competition from products outside that group is so ample that even the complete elimination of competition within the group would not significantly harm either direct customers or downstream consumers.³⁰

3.2. Product Market Definition

As in the 1992 Merger Guidelines, the 2010 Guidelines define product markets using the hypothetical monopolist test to identify a set of products that are reasonable substitutes for a product sold by one of the merging firms. Because degree of substitutability matters, groups of products may satisfy the test, and thus constitute a product market, without including the full range of substitutes from which customers choose. The Merger Guidelines illustrate this point with an example.

Example 5: Products A and B are being tested as a candidate market. Each sells for \$100, has an incremental cost of \$60, and sells 1200 units. For every dollar increase in the price of Product A, for any given price of Product B, Product A loses twenty units of sales to products outside the candidate market and ten units of sales to Product B, and likewise for Product B. Under these conditions, economic analysis shows that a hypothetical profit-maximizing monopolist controlling Products A and B would raise both of their prices by ten percent, to \$110. Therefore, Products A and B satisfy the hypothetical monopolist test using a five percent SSNIP, and indeed for any SSNIP size up to ten percent. This is true even though two-thirds of the sales lost by one product when it raises its price are diverted to products outside the relevant market.³¹

³⁰ U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

³¹ U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

According to the Guidelines, the incentive to raise prices depends on diversion ratios between the products of the merging firms and on profit margins earned on those products. In reflecting on customers' likely responses to higher prices, the agencies consider:

- how customers have shifted purchases in the past in response to relative changes in price or other terms and conditions;
- information from buyers, including surveys, concerning how they would respond to price changes;
- the conduct of industry participants, notably:
 - sellers' business decisions or business documents indicating sellers' informed beliefs concerning how customers would substitute among products in response to relative changes in price;
 - industry participants' behavior in tracking and responding to price changes by some or all rivals;
- objective information about product characteristics and the costs and delays of switching products, especially switching from products in the candidate market to products outside the candidate market;
- the percentage of sales lost by one product in the candidate market, when its price alone rises, that is recaptured by other products in the candidate market, with a higher recapture percentage making a price increase more profitable for the hypothetical monopolist;
- evidence from other industry participants, such as sellers of complementary products;
- legal or regulatory requirements; and
- the influence of downstream competition faced by customers in their output markets.³²

3.3. Critical Loss Analysis

The Guidelines allow for a "critical loss analysis" to corroborate evidence from produce market definition.

³² U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

Critical loss analysis asks whether imposing at least a SSNIP on one or more products in a candidate market would raise or lower the hypothetical monopolist's profits. While this "breakeven" analysis differs from the profit-maximizing analysis..., merging parties sometimes present this type of analysis to the Agencies. A price increase raises profits on sales made at the higher price, but this will be offset to the extent customers substitute away from products in the candidate market. Critical loss analysis compares the magnitude of these two offsetting effects resulting from the price increase. The "critical loss" is defined as the number of lost unit sales that would leave profits unchanged. The "predicted loss" is defined as the number of unit sales that the hypothetical monopolist is predicted to lose due to the price increase. The price increase raises the hypothetical monopolist's profits if the predicted loss is less than the critical loss.

...(H)igh pre-merger margins normally indicate that each firm's product individually faces demand that is not highly sensitive to price. Higher pre-merger margins thus indicate a smaller predicted loss as well as a smaller critical loss. The higher the pre-merger margin, the smaller the recapture percentage necessary for the candidate market to satisfy the hypothetical monopolist test.

Even when the evidence necessary to perform the hypothetical monopolist test quantitatively is not available, the conceptual framework of the test provides a useful methodological tool for gathering and analyzing evidence pertinent to customer substitution and to market definition. The Agencies follow the hypothetical monopolist test to the extent possible given the available evidence, bearing in mind that the ultimate goal of market definition is to help determine whether the merger may substantially lessen competition.^{33 34}

3.4. Geographic Market Definition

Markets are considered bounded by geography and the scope of geographic markets is viewed to depend on transportation costs, although other factors, such as language, regulations, and trade barriers may impede transactions. The significance of competition from foreign firms also may be affected by exchange rates, such that fluctuations in exchange rates are factored into the analyses. When price discrimination is absent, the Guidelines state that geographic markets normally will be based on the locations of suppliers, although in some industries such as

³³ U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

³⁴ For additional work on critical loss, see Katz and Shapiro (2003, 2004).

telecommunications and media, the more relevant approach is to base the analyses on customer locations.

Supplier-location-based geographic markets include the region from which sales are made. Competitors are considered to include firms with relevant production, sales, or service facilities in that region. Some customers may be located outside the region. Evidence considered for geographic markets based on supplier locations include:

- how customers have shifted purchases in the past between different geographic locations in response to relative changes in price or other terms and conditions;
- the cost and difficulty of transporting the product (or the cost and difficulty of a customer traveling to a seller's location) in relation to its price;
- whether suppliers need a presence near customers to provide service or support;
- evidence on whether sellers base business decisions on the prospect of customers switching between geographic locations in response to relative changes in price or other competitive variables;
- the costs and delays of switching from suppliers in the candidate geographic market to suppliers outside the candidate geographic market; and
- the influence of downstream competition faced by customers in their output markets.³⁵

3.5. Market Participants

The Guidelines consider all firms currently earning revenues in the relevant market to be market participants, including vertically integrated firms to the extent that this reflects their competitive significance. Other firms that could be included are:

- Firms not currently earning revenues in the market, but that have committed to entering in the near future; and

³⁵ U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

- Firms that are likely to provide rapid supply responses with direct competitive impact in the event of a small price increase (called “rapid entrants”).

3.6. Applying the Merger Guidelines

Controversy exists over applying the Merger Guidelines. One issue concerns specifying the initial product or region. Sometimes detailed market information is unavailable so that in practice the analysis begins with a larger aggregate. As a general rule, the initial product or geographic region should include the products or areas that are alleging to be harmed in the review. (Baker 2007)

Changes in supply technologies impact considerations of market size. (Baker 2007) For example, television news produced by the South African Broadcasting Corporation was traditionally a market bounded by broadcasting technology and by the borders of South Africa. With the expansion of broadband, broadcast news by the BCC is now part of the market for many South Africans and the South African Broadcasting Corporation’s own content can be provided to universities and expatriates outside of the country.

Some analyses under the Merger Guidelines have used price comparisons to inform market definition. (Baker 2007) The underlying theory is that parallel price movements should imply that products are in the same market. However, there could be multiple reasons for prices to move in comparable patterns, including parallel changes in costs and similar income elasticities of demand.

Critical loss analysis also has been used in applying the Merger Guidelines, but not without controversy. The approach uses a benchmark “critical loss” in sales to determine whether a SSNIP would be profitable to a hypothetical monopolist. (Baker 2007) The underlying theory is that if price-cost margins are high (conversely, low), then a smaller (conversely, larger)

sales loss is unprofitable, and that high margins imply that firms have exercised market power. However, the theory is based on several underlying assumptions that may not hold. (Baker 2007) Some analysts argue that recent changes in critical loss analysis – namely accepting diversion as a substitute for actual loss³⁶ – almost guarantees narrowly defined markets, which would lead to erroneous findings of market power. (Simons and Coate 2013)

4. Critiques and Future Directions

The influence that economic opinion has on the Merger Guidelines has grown over the years. In this section we identify areas where economic critiques of antitrust point to possible future modifications of the Guidelines.

4.1 Criticisms of Supply-side Considerations

Some jurisdictions, most notably the European Commission, incorporate supply-side substitution in the market definition phase of competitive analysis rather than in the market analysis phase. As Baker (2007) explains, the concern is not whether to consider supply-side issues, but at what stage of the analysis to do so. He supports the Merger Guidelines approach of considering supply-side later in the analysis, because incorporating the supply-side substitution in the market definition stage can lead to confusion. To illustrate, he offers an extended analogy of a market for insulated copper wiring used to conduct electricity. The question addressed in the analogy is whether insulated aluminum wiring is in the same market as insulated copper wiring. The answer is, “no”, from a customer perspective because the products are not easily substituted. However, some producers of insulated aluminum wiring can economically switch to producing insulated copper wiring. This available production capacity can and should be considered in identifying the degree of firms’ market power, but including insulated aluminum wiring in the

³⁶ Diversion is the amount of sales lost to rivals resulting from a unilateral price increase, estimated using the Lerner Index. Actual loss, or more specifically predicted actual loss, is the loss in sales predicted by market analysis. (Simons and Coate 2013)

market definition stage would overstate the alternative supply that customers actually have because not all of the capacity is available.

4.2. Adapting Market Definition to Anticompetitive Concerns

Baker also addresses difficulties of adapting market definition in cases involving anticompetitive conduct. (Baker 2007) These cases are retrospective in nature, so the analytical approaches must be adjusted. Market definition analyses should be based on identifying the but-for price, i.e., SSNIP increase relative to the price that would have prevailed but-for the conduct. If the alleged harm is prospective, then the analysis is based on prices as established in the Guidelines.

Identifying but-for prices is complex and controversial. In an alleged collusion case, the but-for price might implicitly incorporate the case's conclusion, i.e., if the analysis assumes that but-for prices are lower than (conversely, the same as) current prices, the analysis implicitly assumes that collusion has (conversely, has not) occurred.³⁷ This dilemma highlights the *Cellophane Fallacy*, which notes that monopoly-like prices are already at a level at which customers readily depart if SSNIP were to occur.

Market definition in evaluating prospective exclusionary conduct depends on the details of the allegations and the defenses. For example, a firm that claims exclusion might be a buyer, which raises substitution issues, but the firm may behave strategically and refuse to consider alternatives in order to boost the exclusionary claim.

4.3. Problems in Applying Market Definitions

Carlton (2007) argues that market definition is perilous because data are rarely sufficient to conduct rigorous studies, leading analysts to develop approximations. Because definitions are

³⁷ It might also be that the alleged act is collusion to prevent a price decline.

problematic, Carlton concludes that they should be used almost exclusively to exclude cases (ones where market shares are low).

4.4. Issues for Two-Sided Markets³⁸

Two-sided markets complicate market definition. A two-sided market is one in which customers and suppliers or customers and customers interact through a platform. The Windows operating system and the Internet are examples of two-sided markets. These markets create network effects that may be network externalities. Network effects are situations where customers or suppliers find that the value of a market is affected by the presence of other customers. These network effects are network externalities if their values are not reflected in supplier prices. In these situations, the two sides of the market have interdependent prices and outputs. For example, if an online video game service increases its prices to game developers, it would attract fewer games to its site. As a result, it would lose players and, with fewer players, even more game developers would desert the service. In practice, two-sided markets often obtain most of their profits on one side and may provide services to the other side for free, or at least at prices below incremental costs. For public policy analysis, an important feature of two-sided markets is that pricing at incremental cost is not the efficient outcome because such prices fail to reflect all of the value created or consumed by a purchasing decision.

Most standard approaches to market definition require modification to incorporate two-sided market issues. Indeed, many standard tools of antitrust and merger analysis were developed for standard single-sided markets. As a result findings using these tools do not hold for two-sided platforms. For example, using the price-cost margin to assess critical loss on one side will understate the price effects of a merger. Estimating demand elasticities directly using a standard one-sided model will overstate the effects of a merger on prices.

³⁸ See Evans (forthcoming).

4.4. New Industry Conditions and Future Markets

Hauge and Jamison (2014) identify situations where mergers are driven by considerations of changed circumstances and future markets, making the Merger Guidelines' emphasis on current markets problematic. Deregulation and technology change both drive increased merger activity, indicating needs to change firm structure to adapt to the new situations. Even though such mergers could increase industry concentration, the changing circumstances would seem to make questionable any analysis based on the past. These types of changed circumstances could also create opportunities for innovations, leading firms to merge to acquire resources. The information technology sector is particular is characterized by such considerations: Firms are sometimes acquired simply to gain the talents of the employees of the acquired firms. Hauge and Jamison (2014) argue that these industry conditions warrant less antitrust scrutiny than usual.

4.5. Other Considerations

There are several other considerations for evolving markets. Stockdale (2011) explains that problems in traditional telecommunications markets, such as uneven adoption of new technologies by firms and by customers, will be accentuated in Next Generation Networks. Detailed data gathering and frequent discussions with stakeholders will be required to obtain accurate analyses. Such dynamic changes in product substitutability, new product introduction, and market penetration imply that parameters for market definition, critical loss, and the like should be considered evolutionary. Perhaps multiyear analyses conducted with changing parameters and extensive sensitivity analyses can provide valuable insights and zones of concern or confidence. Data are limiting, even in developed markets where data gathering is well established. This requires analysts to use proxy data, to test alternative parameters, and to be conservative in their conclusions.

5. Conclusion

In this paper we have described the evolution and current state of merger analysis in the United States, focusing on defining markets. It is critical for businesses operating in changing industries to appreciate this evolution and how it has been driven by court cases, economic theory, and pragmatism. As businesses look for guidance in the Guidelines and test cases, an understanding of the goals and methods of policy is essential. At this time, the state of analysis is quite advanced, but still unsatisfactory, reflecting the complexity of the task and perhaps demonstrating that the hypothetical nature of the work means that there will never be a conclusive answer.

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