

CHAPTER 12

HORIZONTAL MERGER ANALYSIS

I. MERGER LAW AND DECISION THEORY	3
A. “A Probability of a Probability”	4
B. Expected Value versus Likelihood of Anticompetitive Harms	5
C. Justifying Interventionist Merger Standards	7
D. Distinguishing the Two Prongs of Section 7	9
E. Buyer-Side Mergers	10
II. ECONOMIC APPROACH TO COMPETITIVE EFFECTS ANALYSIS OF HORIZONTAL MERGERS	11
A. Modern Market Definition	12
1. Quantification of the hypothetical monopoly test with critical loss analysis	16
2. Modern critical loss analysis: The recapture percentage methodology	17
3. Evidence in support of a product market definition	19
B. Price Discrimination and Targeted Customer Markets	21
1. The economics of price discrimination	21
2. Implications for merger analysis and market definition	22
C. Multi-Product Firms	24
D. Cluster Markets	25
E. Geographic Market Definition	26
F. Buyer-Side Market Definition	28
III. CONCENTRATION AND THE STRUCTURAL PRESUMPTION	29
A. Market Shares and Concentration	29
B. The Structural Anticompetitive Presumption	30
IV. ANTICOMPETITIVE HARMS	31
A. Unilateral Effects	32
1. Profitability from recapture of lost diverted sales	32
2. The Gross Upward Pricing Pressure Index (GUPPI)	34
3. Role in market definition	37
4. Further economic analysis	38
i. Compensating marginal cost reductions	38
ii. Equilibrium simulation models	38
5. Economic evidence for gauging likely unilateral effects	39
6. Case law example: Staples (1997)	39
7. Unilateral effects analysis of partial ownership acquisitions	39
8. Common ownership	41
B. Coordinated Effects	42
1. Market definition	43
2. Market vulnerability to coordination	43
3. Impact of the merger on the vulnerability to coordination	44
4. Reducing the number of competitors and increasing the HHI	44
5. Eliminating a “disruptive” or “maverick” competitor	44
6. History of attempted collusion	45
7. Increasing competitor symmetry	45
8. Decreasing excess capacity	45
9. Case law examples: Heinz, H&R Block, and T-Mobile/Sprint	45

C. Exclusionary Effects	46
1. Entry and expansion constraints	48
2. Barriers to new entry	48
3. Product extension and repositioning	49
4. Rapid entry	49
5. Countervailing power of buyers	50
V. PROCOMPETITIVE BENEFITS	51
A. Procompetitive Nature	51
B. Overall Procompetitive Effect	51
C. Sliding Scale	51
D. Merger Specificity	52
1. Verifiability	52
2. Offsetting inefficiencies	52
3. Out-of-market efficiency benefits	52
E. Innovation Effects	54
1. Impact on innovation ability and incentives	54
2. Merger of innovation competitors	54
VI. ACQUISITIONS OF POTENTIAL ENTRANTS	55
A. Meta/Within	56
B. Decision Theory Analysis of the Liability Standard for Potential Entry Mergers	56
C. Killer Acquisitions	58
VII. REMEDIES	58
ANNEX 12.A HORIZONTAL MERGER CHECKLISTS	60

List of Figures

Figure 12.1 Standard critical loss analysis	16
Figure 12.2 Supermarket draw areas and consumer choice	26
Figure 12.3 Illustrating the impact of store A price increase	26
Figure 12.4 Profit gains and losses following a merger	32
Figure 12.5 Impact of diversion and recapture on incremental profits	33
Figure 12.6 Analysis of rapid entry in a proposed merger	49

Horizontal mergers are a major area of antitrust practice, because the Hart-Scott-Rodino Act permits the Federal Trade Commission (FTC) and Department of Justice (DOJ) to investigate proposed mergers before they are consummated. Merger are investigated and enforced with the aid of these agencies's Merger Guidelines, which set out the detailed economic methodology and suggested economic and documentary evidence used by the agencies and the parties. The courts use and rely on the Guidelines' methodology, which is often considered to represent "best practices" for analyzing mergers.¹

¹ The Guidelines are used across all areas of antitrust. For one review of courts' application of the 2010 Merger Guidelines, see Carl Shapiro and Howard Shelanski, *Judicial Response to the 2010 Horizontal Merger Guidelines*, 58 REV. INDUS. ORG. 51 (2021). For a highly skeptical view of the current approach to merger enforcement using the approach of the Guidelines, see Louis Kaplow, RETHINKING MERGER ANALYSIS (2024).

I. Merger Law and Decision Theory

Since passage of the Hart-Scott-Rodino Act, in 1976, the agencies have invested potentially harmful mergers before they are consummated. A substantial economic methodology has been developed to carry out a predictive competitive effects analysis of proposed mergers to accompany the structural presumption. Passage of this act created an important area for large law firms and economic consulting firms and has led to antitrust lawyers and economists working together. Mergers require attorneys and economists at the agencies and the potential merging parties to work together and speaking the same language of both economics and legal standards.

Mergers are generally adjudicated under Section 7 of the Clayton Act,² which is more interventionist than either Section 1 or Section 2 of the Sherman Act. Section 7 prohibits mergers where the effect “may be substantially to lessen competition or tend to create a monopoly.” As explained in *Brown Shoe* (1962)³ and *Philadelphia National Bank* (1963),⁴ this wording reflects a concern with probabilities. The modern legal standard includes terms such as “reasonable probability” and “appreciable risk” of anticompetitive effects.

In decision theory terms, Section 7 and the language of the statute and standard set out in *Brown Shoe* and *Philadelphia National Bank* can be interpreted as placing more weight on avoiding false negatives than false positives. *Philadelphia National Bank* created an anticompetitive presumption based on the combined market share of the merging parties and market concentration that remains today.⁵ As stated there:

A merger which produces a firm controlling an undue percentage share of the relevant market, and results in a significant increase in the concentration of firms in that market is *so inherently likely to lessen competition substantially* that it must be enjoined in the absence of evidence *clearly showing* that the merger is not likely to have such anticompetitive effects. Such a test *lightens the burden of proving illegality* only with respect to mergers whose size makes them inherently suspect in light of Congress’ design in §7 to prevent undue concentration. Furthermore, the test is fully consonant with economic theory [italics added].⁶

Unlike the multi-step rule of reason applied to Sections 1 and 2—in which the defendant merely has to produce sufficient evidence of plausible benefits or rebut the harm evidence—the standard required defendants whose mergers satisfied the so-called “structural presumption” to bear the burden of persuasion, not just production, under a high rebuttal standard of “clear showing,” not

² Section 3 uses the same language with respect to certain other conduct.

³ *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962)

⁴ *United States v. Philadelphia National Bank*, 374 U.S. 321, 362 (1963).

⁵ For this decision theory analysis, see Steven C. Salop, *The Evolution and Vitality of Merger Presumptions: A Decision-Theoretic Approach*, 80 ANTITRUST L. J. 269 (2015).

⁶ *United States v. Philadelphia National Bank*, 374 U.S. 321, 362 (1963).

just “more likely than not.” The D.C Circuit’s 1990 opinion in *Baker Hughes*⁷ drafted by future Justice Thomas, suggested that the rebuttal standard be reduced.

The court also set out a sliding scale standard, in which “the more compelling the prima facie case, the more evidence the defendant must present to rebut it successfully.” In *Heinz*,⁸ the court relied heavily on the sliding scale, concluding that “as far as we can determine, no court has ever approved a merger to duopoly under similar circumstances.”⁹ It then carefully and skeptically analyzed and rejected the parties’ rebuttal evidence. This sliding scale structure and its decision theory underpinnings are essential for understanding how economic evidence is used in merger law.

The following subsections discuss the basic probability and decision theory concepts and then apply them to the potential justifications for the interventionist merger standards.

A. “A Probability of a Probability”

Courts have used terms like “likely,” “reasonable likelihood,” “appreciable risk,” and “appreciable danger” in interpreting the Section 7 standard. The burden on the plaintiff could be interpreted as “more likely than not” to cause anticompetitive effects. However, this burden is not logically clear, as explained in *U.S. v. Bertelsmann*:¹⁰

The root of these competing formulations may be uncertainty over how the government’s preponderance-of-the-evidence burden interacts with Section 7’s already probabilistic standard; combined, the two standards require the government to prove “by a preponderance of the evidence” that the effect of a challenged merger or acquisition “may be substantially to lessen competition.”¹¹

This formulation is useful. The conjunction in essence amounts to the perhaps confusing sounding requirement that the plaintiff must establish a “probability of a probability”—that is, a sufficient probability of exceeding a specific probability threshold. The burden of proof may be on the plaintiff to show that a relevant proposition is more likely than not to occur, but the relevant proposition may itself be a probability threshold.¹²

⁷ *United States v. Baker Hughes Inc.*, 908 F.2d 981, 990–91 (D.C. Cir. 1990).

⁸ *FTC v. H.J. Heinz Co.*, 246 F.3d 708 (D.C. Cir. 2001).

⁹ 246 F.3d at 720.

¹⁰ *United States v. Bertelsmann SE & Co.*, No. CV 21-2886-FYP, 2022 WL16949715 (D.D.C. November 15, 2022).

¹¹ 2022 WL16949715, at 10.

¹² The Supreme Court opinion in the *Kyles v. Whitley* 514 U.S. 419 (1995) criminal case is instructive. The issue there involved whether suppressed evidence in a criminal case was “material.” The Court opined that a “reasonable probability” that the result of the proceeding would have been different had the evidence been disclosed “does not require demonstration by a preponderance that disclosure of the suppressed evidence would have resulted ultimately in the defendant’s acquittal.” Although this case was a criminal case, in which the overarching standard of proof is “beyond a reasonable doubt,” the opinion expresses the concept of a “probability of a probability.”

A numerical example illustrates the point. Suppose that a new battery back-up product would violate a safety code if the probability of a unit spontaneously combusting were more likely than not to exceed 1 percent. Suppose that the evidence shows that there is a 60 percent probability of combustion occurring 1.5 percent of the time and a 40 percent probability of it occurring 0.1 percent of the time. This product would violate the standard, because the battery combustion is more likely than not to exceed 1 percent, even though the expected value of the likelihood of spontaneous combustion of any unit is just 0.94 percent ($[0.6 \times 1.5] + [0.4 \times 0.1]$).

The “may be” language in Section 7 clearly refers to a probability threshold level for showing reduced competition. Suppose that the “may be” language were interpreted as a threshold probability of anticompetitive effects of (say) 70 percent. The preponderance of the evidence standard would demand that the evidence show that the relevant proposition (“may be to substantially lessen competition”) is more likely than not (i.e., has more than a 50 percent chance of occurring). Use of these probabilities in conjunction would mean that the plaintiff must show that the probability of lessened competition is more than 35 percent (50 percent times 70 percent). It follows that commonly articulated tests such as “reasonable probability” or “appreciable risk” should imply a required showing of a probability of lessened competition that is less than 50 percent, as in the example of the back-up battery. This requirement is obviously a lower standard of proof than the more-likely-than-not threshold of more than 50 percent.¹³

Interpretation of the text of the statute in terms of probabilities conjoined with the usual overarching preponderance standard for the evidence suggests that terms like “reasonable probability” or “appreciable danger” are best interpreted as placing a lower burden of proof on the plaintiff than the usual Section 1 burden. This interpretation does not mean that precise probability measures should not be used. Probabilities cannot be measured precisely. Judge Posner’s statement in *FTC v. Elders Grain, Inc.*¹⁴ that “doubts are to be resolved against the transaction” may be a better way to describe and operationalize the idea for a generalist court.

B. Expected Value versus Likelihood of Anticompetitive Harms

An evidentiary burden on the plaintiff that is lower than “more likely than not” (as expressed in the “may be” language of Section 7) can be interpreted in decision theory terms as an assumption that false negatives (under-enforcement) pose a greater risk than false positives (over-enforcement). As a matter of economic analysis, if the magnitude of the likely welfare harm exceeds the magnitude of the likely benefits, the preponderance of the evidence standard (and the associated more-likely-than-not standard) will not maximize expected consumer welfare. A burden of proof probability

¹³ Multiplying two underlying probabilities to derive the compound probability is premised on the two underlying probabilities being independent. In many situations, they are not. However, as used here, the two underlying probabilities are conceptualizations, one based on the language stating the goal of the statute and the other the usual standard of proof in civil cases. To clarify this interpretation with another example, consider the per se rule against a price-fixing agreement. The plaintiff must prove by a preponderance of the evidence that the defendants had a price-fixing agreement, a finding that requires a probability threshold of more than 50 percent. If such an agreement is found, the probability that the defendants will be liable for a violation is 100 percent.

¹⁴ *FTC v. Elders Grain, Inc.*, 868 F.2d 901, 906 (7th Cir. 1989).

standard designed to maximize expected consumer welfare in probability terms would be lower than the more-likely-than-not standard.

Suppose that a district court finds that the plaintiff's evidence suggests that the outcome would involve anticompetitive welfare effects ("harms") of \$100, and the defendant's evidence suggests that the outcome would involve procompetitive welfare effects ("benefits") of \$80. Suppose that the court concludes that either the plaintiff's or defendant's claim (not something in the middle) is correct. Suppose also the court is not concerned with deterrence issues but focuses solely on reaching the best outcome for this specific merger.

On these facts, the more-likely-than-not standard would not minimize error costs. The expected error cost from erroneously permitting the merger would be \$50 (50 percent x \$100), and the expected error cost from erroneously condemning the merger would be only \$40 (50 percent x \$80). A probability standard lower than more likely than not placed on the plaintiff would therefore be appropriate. This merger should be condemned if the probability of the anticompetitive outcome of \$100 of harm is at least 45 percent.¹⁵ Only if the possible harms and benefits are the same would the "reasonable probability" threshold be over 50 percent.

A useful way to understand this role of asymmetric benefits and harms is to contrast the probabilities of consumer welfare harms versus benefits with the expected welfare effect from allowing the merger. Consider the example above, in which the possible consumer welfare harm is \$100 and the possible welfare benefit \$80. If the probability of a harm outcome were 50 percent, the expected value of the consumer welfare effect of the merger would be anticompetitive, at -\$10 $[(50 \text{ percent} \times -\$100) + (50 \text{ percent} \times \$80)]$.

The optimal probability standard should therefore be set to ensure that an expected value of the welfare harm will not occur. Simply stated, the standard of proof should be sensitive to the magnitudes of the possible welfare harm and benefits, not simply the probabilities of each. In the example above, the expected value of the consumer welfare effect would be positive only if the likelihood of the harm outcome were less than 45 percent. The court should therefore enjoin the merger if the plaintiff can show a likelihood of the harm outcome of more than 45 percent. Applying the more-likely-than-not standard would be excessive.

This example is not intended to suggest that district courts must attempt to calculate expected value of welfare on a case-by-case basis, something that is generally not possible. It does have a more general applicability to systematic differences.

To see why, suppose that the legislature or Supreme Court determines that the cost of false negative outcomes (including under-deterrence) in mergers systematically tends to exceed the cost

¹⁵ If the probability of harm is 45 percent, the expected error cost of prohibiting the merger is \$45 (i.e., a 55 percent likelihood that the decision is wrong times \$80 in lost benefits). The expected value of the error cost of allowing the merger is \$45 (i.e., a 45 percent likelihood that the decision is wrong times \$100 in harm suffered.) If the probability of harm is slightly higher [lower] than 45 percent, the expected value of the error costs of prohibiting the merger are lower [higher], so the merger should be prohibited [allowed].

of false positive errors. This determination implies that the plaintiff's evidentiary burden under a "reasonable probability" standard should require a probability burden on the plaintiff of less than 50 percent (i.e., the standard of proof should be more plaintiff-friendly than more likely than not). "Appreciable danger" can be a useful way to interpret the reasonable probability standard in decision theory terms. This so-called "incipiency" standard reflects a greater concern with under-deterrence than over-deterrence.

This statutory term "substantially" seems intended to require only more than de minimis anticompetitive effects: A merger with any "material" anticompetitive effects should be condemned. The Merger Guidelines have used the concept of a profit-maximizing small but significant increases in price (SSNIP) in defining markets and the commonly used 5 percent as the benchmark measure. The Merger Guidelines reject the idea that a merger is permissible if it causes a price increase of less than 5 percent:

The five percent price increase is not a threshold of competitive harm from the merger. . . . A merger within a well-defined market that causes undue concentration can be illegal even if the predicted price increase is well below the SSNIP of five percent.¹⁶

The substantiality issue could arise if the merger price increases predicted by an econometric estimation model are positive but either trivial or large but not "statistically significant."

C. Justifying Interventionist Merger Standards

This analysis suggests that false negatives (including under-deterrence) should be treated as more concerning than false positives (including over-deterrence). Even aside from the language of the statute, this premise makes sense for several practical reasons:

- Enforcement agencies are resource constrained and can investigate and challenge only a small fraction of the reported mergers. Most challenges are settled by consent decrees, which fail to restore competition a significant fraction of the time.¹⁷ The government wins a substantial majority of the litigated cases, suggesting that only the most egregious offenses reach the courts.¹⁸

¹⁶ 2023 Merger Guidelines at note 84.

¹⁷ Federal Trade Commission, *THE FTC'S MERGER REMEDIES 2006–2012: A REPORT OF THE BUREAU OF COMPETITION AND ECONOMICS* 18 (2017), ftc.gov/system/files/documents/reports/ftcsmrger-remedies-2006-2012-report-bureaus-competition-economics/p143100_ftc_merger_remedies_2006-2012.pdf. For further analysis, see Lawrence M. Frankel, *The Flawed Institutional Design of U.S. Merger Review: Stacking the Deck against Enforcement*, 2008 UTAH L. REV. 159, 190; Steven C. Salop, *Merger Settlement and Enforcement Policy for Optimal Deterrence and Maximum Welfare*, 81 FORDHAM L. REV. 2647, 2654 (2013); Robert B. Bell and Amanda L. Butler, *Institutional Factors Contributing to the Under-Enforcement of Merger Law*, ANTITRUST SOURCE 7–8 (Oct. 2020).

¹⁸ Logan Billman and Steven C. Salop, *Merger Enforcement Statistics:2001-2020*, 85 ANTITRUST L.J. 1 (2023).

- Some mergers lead to merger-specific efficiency benefits.¹⁹ Indeed, some mergers in concentrated markets have been cleared on this basis. The overall record of mergers in concentrated markets systematically leading to merge-specific efficiency benefits that exceed competitive harms is weak, however,²⁰ as indicated by the failure of efficiency claims in almost all litigated merger cases. If merger-specific efficiencies are unlikely to reverse anticompetitive harms, false negatives will tend to be more costly than false positives. The efficiency benefits may also be delayed relative to the competitive harms, reducing their value in net present value terms. In addition, merging firms can often achieve at least a share of the claimed efficiency benefits absent the merger, reducing the magnitude of the costs of false positives. A start-up or other acquired firm can often be merged with a less concerning competitor, so that its efficiencies will still be captured and its investment incentives supported, albeit possibly at a marginally lower rate. By contrast, the harm from market power achieved by the merger can be long-lived, making the costs of the false negatives high.
- If a merger is permitted to proceed and later turns out to raise anticompetitive concerns, there is little recourse in antitrust. Even if a Section 7 case is brought after the fact, it is difficult to undo the anticompetitive structure with a divestiture once the eggs are scrambled. Formulating a behavioral remedy is difficult. Neither the FTC nor most courts are willing to roll back and then regulate prices. After the FTC's successful challenge of the consummated *Evanston Northwestern* merger, its remedy was merely a demand that the two hospitals bid in competition with one another, a demand that was fundamentally unenforceable.²¹ The district court in the *Bertelsman* publishing merger explained clearly why the parties voluntary remedy of this type of independent bidding was unlikely to prevent anticompetitive conduct.²²

¹⁹ A recent article found that horizontal mergers in markets for packaged goods sold at retail between 2006 and 2017 led to higher prices on average in most specifications but to substantially lower prices in a quarter of the cases. See Vivek Bhattacharya et al., *Merger Effects and Antitrust Enforcement: Evidence from US Consumer Packaged Goods* 15-17, 25-26 and Table A.1 (National Bureau of Economic Research, Working Paper No. 31123, 2023), <https://ssrn.com/abstract=4413860>.

²⁰ See David J. Ravenscraft and Frederic M. Scherer, *Mergers, Sell-Offs, and Economic Efficiency* 207-10 (1987); F.M. Scherer, *A New Retrospective on Mergers*, 28 REV. INDUS. ORG. 327, 329 (2006); Paul A. Pautler, *Evidence on Mergers And Acquisitions*, Federal Trade Commission (2001); Orley Ashenfelter et al., *Did Robert Bork Understate the Competitive Impact of Mergers? Evidence from Consummated Mergers*, 57 J.L. ECON. S67 (2014); Roger D. Blair and D. Daniel Sokol, *Quality-Enhancing Merger Efficiencies*, 100 IOWA L.R. 1969 (2015); Bruce A. Blonigen and Justin R. Pierce, *Evidence for the Effects of Mergers on Market Power and Efficiency*, Finance and Economics Discussion Series 2016-082. Washington: Board of Governors of the Federal Reserve System (2016), <https://doi.org/10.17016/FEDS.2016.082>; Herbert Hovenkamp, *Appraising Merger Efficiencies*, 24 GEO. MASON L. REV 703 (2017). This is not to say that there are never efficiencies. For one recent example, see Mert Demirer and Omer Karaduman, *Do Mergers and Acquisitions Improve Efficiency? Evidence from Power Plants* (2023). https://demirermert.github.io/Papers/Demirer_Karaduman_Nov_29.pdf. These efficiencies may not dominate the anticompetitive effects, however. See Robert B. Kulick, *Ready-to-Mix: Horizontal Mergers, Prices, and Productivity* (2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=263796.1.

²¹ *In re Evanston Nw. Healthcare Corp.*, No. 9315, Opinion of the Comm'n on Remedy (F.T.C. Apr. 28, 2008). See also *In re Evanston Nw. Healthcare Corp.*, No. 9315, Final Order (F.T.C. Apr. 24, 2008).

²² *United States v. Bertelsmann SE & Co. KGaA*, 646 F. Supp. 3d 1 (D.D.C. 2022).

- Even if a consummated anticompetitive merger could ultimately be reversed, substantial harm to consumers and competition could occur in the meantime. Damages obtained in private suits are typically far less than the overcharges; they are unlikely to deter interim price increases or anticompetitive mergers.

D. Distinguishing the Two Prongs of Section 7

Section 7 of the Clayton Act prohibits mergers that may be substantially to lessen competition or tend to create a monopoly.²³ In a strict economic sense, if the first prong is interpreted to mean that market power is achieved, increased, or maintained and *monopoly* is interpreted to mean *monopoly power* (i.e., a substantial amount of market power), the “tend to” language might be considered merely repetitive, with “tend to” is interpreted to mean “may be” (i.e., with some probability).

The legislative history and textual analysis provide a justification for taking this distinction seriously.²⁴ They suggest that Congress intended to raise even greater concerns with an acquisition that has a material probability of leading to or entrenching monopoly power by the merged firm by increasing its power to exclude.²⁵ Decision theory analysis also suggests that this entrenchment concern can justify a legal standard with a sliding scale that makes it easier to condemn and harder to justify a merger that has a risk of achieving or maintaining monopoly power. Such analysis suggests that the “may be substantially to lessen competition” prong justifies an anticompetitive presumption for acquisitions that lead to a significant market share of the merged firm in a concentrated market and the “tends to create a monopoly” prong can justify a stronger or even a nonrebuttable anticompetitive presumption. This interpretation may explain why the 2023 Merger Guidelines argue that there should be no permissible efficiency benefits rebuttal for mergers to monopoly.

The definition of monopoly power in *DuPont* was the “power to control price or exclude competition.”²⁶ The “power to control prices” can be interpreted as the classical market power to raise prices above and reduce output below the competitive level, and the “power to exclude competition” can be interpreted as exclusionary market power to raise prices through foreclosure strategies.²⁷ A merger that gives the merged firm the ability to set higher prices is more concerning if the merged firm also gains a greater power to exclude.²⁸ In economic terms, such a merger would involve greater power to create or enhance barriers to entry or expansion by various foreclosure strategies.

²³ Section 3 uses the same language with respect to certain other conduct.

²⁴ Robert H. Lande, John M. Newman, and Rebecca Kelly Slaughter, *The Forgotten Anti-Monopoly Law: The Second Half of Clayton Act § 7*, 103 Tex. L. Rev. 785 (2025).

²⁵ For more detailed analysis of this set of issues, see David Lawrence, *The Merger Monopoly Gap*, 101 N.Y.U.L. REV. (2026) (forthcoming).

²⁶ *United States v. E. I du Pont de Nemours & Co.*, 351 U. S. 377, 391 (1956).

²⁷ Thomas G. Krattenmaker, Robert H. Lande, and Steven C. Salop, *Market Power and Monopoly Power in Antitrust Law*, 76 GEO. L.J. 241 (1987).

²⁸ Lawrence, *supra*, note 25.

The power to exclude is not inevitable as an economic matter. To see why, consider a market in which two firms each have constant marginal costs of \$10 and there are numerous potential entrants on the fringe that have constant marginal costs of \$20 based on a variety of production technologies. Suppose that the two lower-cost firms can imperfectly coordinate, so that the pre-merger price is \$15. Assume that a merger of these two firms could lead to a price increase of up to \$20 and a combined market share of 100 percent. But suppose that the profit-maximizing price for an unconstrained monopolist is \$25. The merged firm would be unable to achieve that higher price in the face of entry unless it also had the power to exclude the potential entrants. If, however, the potential entrants employ various technologies and are not dependent on a common set of input suppliers, it is unlikely that the merged firm would have power to exclude them all. By contrast, a monopolist might have the power to exclude if the entrants were foreign firms and the merged firm had the political power to mount a successful lobbying campaign to achieve a tariff of more than \$5.

Alternatively, suppose that all potential entrants require an input that is currently sold to customers in other markets at a perfectly competitive price by the only three viable producers. The merged firm could offer all of those producers a payment not to sell the inputs to any of the potential entrants, thereby purchasing a naked exclusionary right. The merged firm would be able to exclude entrants and raise the price up to the \$25 unconstrained monopoly price.

The 2023 Merger Guidelines suggest that no efficiency benefits rebuttal should be permissible for mergers that lead to monopoly. This policy is subject to the criticism that even a monopolist has the incentive to pass through marginal cost reductions and lower prices and that a higher price/cost margin can enhance the incentive to invest in activities that increase demand. These downward pricing pressure benefits may be short-lived, however; over the longer term, the cost savings could raise entry barriers and entrench the monopoly.²⁹ The lower costs lead to greater power to exclude. If the monopolist has lower costs, there is an increased likelihood that entry will lead to larger responsive price reductions.³⁰ A potential entrant that rationally anticipates such post-entry price reductions will be less likely to enter the market or might choose to adopt a “judo economics” strategy of entering at a very small scale that does not disrupt the monopoly power, thereby reducing the monopolist’s incentive to cut its prices in response to the entry, as discussed in Chapter 2.

E. Buyer-Side Mergers

Most of the analysis below focuses on mergers by sellers that raise anticompetitive concerns in the output market and may harm consumers. Merger law and analogous economic analysis also apply to mergers of buyers that create anticompetitive concerns in the input market and may harm input sellers, including workers.³¹ Labor markets may involve pre-existing monopsony power.³²

²⁹ Steven C. Salop, *The 2023 Merger Guidelines: A Post-Chicago and Neo-Brandeisian Integration*, 65 REV. IND. ORG. 79 (2024).

³⁰ See the discussion of the role of anticipated post-entry price competition on raising entry barriers in the barriers to entry section in Chapter 2.

³¹ See, e.g., C. Scott Hemphill, and Nancy L. Rose, *Mergers that Harm Sellers*, 127 YALE L. J. 1742 (2018).

³² Orley C. Ashenfelter et al., *Labor Market Monopsony*, 28 J. LABOR ECON. 203 (2010).

Concentration in some of them may be high.³³ A merger could also lead to the creation of monopsony power.

Some merger cases have focused on labor markets. The *Bertelsman*³⁴ publishing merger litigation involved concerns about anticompetitive effects on authors, not book purchasers. The *Kroger*³⁵ supermarket merger case alleged anticompetitive effects on both grocery shoppers and unionized supermarket workers. In both cases, claiming that downstream consumers would benefit was not a cognizable rebuttal, as merger law since *Philadelphia National Bank* does not permit a rebuttal based on “out-of-market” benefits.³⁶ Nor should it do so, given that even monopolist sellers are entitled to exploit their market power if it was obtained on the merits, as discussed in Chapter 8. In addition, a merger that leads to monopsony power will also harm downstream consumer.

II. Economic Approach to Competitive Effects Analysis of Horizontal Mergers

The economic approach to merger analysis might be characterized as analyzing and comparing the potential “bad guy” and “good guy” stories of the merger. In the “bad guy” story, an output market merger harms consumers by creating, enhancing, or entrenching market power or facilitating its exercise. These harms may include price increases; they can include reductions in product quality and innovation.

In the “good guy” story, a merger benefits consumers by lowering costs, leading to the creation of better products, and spurring innovation. In the simplest economic formulation focusing on price, the merger can lead to upward pricing pressure from “bad guy” effects and downward pricing pressure from “good guy” effects, with the overall effect on consumers determined effect dominates.

Three economic mechanisms can increase output prices:

- Unilateral effects enhance market power by eliminating head-to-head competition between merging firms, even if the merger causes no changes in the way other firms behave.
- Coordinated effects enhance market power by increasing the risk of coordinated, accommodating, or interdependent behavior among some or all rivals.
- Exclusionary effects involve the impact on consumers by disadvantaging rivals through input or customer foreclosure.

³³ See, e.g., Jose A. Azar et al., *Concentration in US Labor Markets: Evidence from Online Vacancy Data*, 66 LAB. ECON. (2020); David Card, *Who Set Your Wage?*, 112 AM. ECON. REV. 1075 (2022).

³⁴ *United States v. Bertelsmann SE & Co.*, No. CV 21-2886-FYP, 2022 WL16949715 (D.D.C. November 15, 2022).

³⁵ Opinion & Order, *FTC v. The Kroger Co.*, No. 3:24-cv-00347-AN (D. Or. December 10, 2024); Findings of Fact and Conclusions of Law, *Washington v. The Kroger Co.*, No. 24-2-00977-9 (King Cty. Sup. Ct. December 10, 2024).

³⁶ *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963). The policy issues regarding this standard are discussed below.

The focus of most modern cases is the potential for anticompetitive unilateral effects in output markets. Mergers can cause analogous input market harms to input sellers, including workers.

Following the basic approach of the Merger Guidelines, the analysis can examine market definition, market shares and concentration, anticompetitive harms analysis, entry and expansion constraints, buyer power constraints, and efficiencies. If a merger is found to have a sufficient likelihood of anticompetitive effects, the court might then determine remedies short of prohibition. Market definition analysis must be integrated with the anticompetitive mechanism identified and analyzed in the competitive effects part of the analysis.³⁷

A. Modern Market Definition

Outside of antitrust, the term *market* is used in a variety of ways. It can mean a place where one buys merchandise, such as a supermarket or neighborhood fruit stand; a place where buyers and sellers meet, such as a farmers' market or the stock market; or a collection of interacting buyers and sellers, such as a labor market.

A court's typical first step in a merger case is to define the relevant market. In antitrust, the relevant market is sometimes termed as the "area of effective competition." This term is not helpful on its own, because competition may occur in any number of markets. Multiple market definitions can satisfy the usual technical criteria. Section 7 of the Clayton Act is violated if the merger may substantially lessen competition or tend to create a monopoly in any relevant market.

Litigation often centers on the determination of the market definition, because horizontal merger law since *Philadelphia National Bank* contains an anticompetitive structural presumption based on the market shares of the merging firms and market concentration. This process of defining a market is not always obvious. Multiple market definitions are possible, as is most obvious in the case of a vertical merger, in which the anticompetitive effects can occur at either level. It can also arise in a horizontal merger. A supermarket chain merger might involve the allegation that the merged firm would raise prices across the board, coordinate with other chains' activities in setting union or nonunion wages, and/or obtain exclusives with major manufacturers to cause the exit of small urban stores or deter entry in growing suburban areas. A modern supermarket sells thousands of items; competitive concerns might affect only a subset of them.

Cases involving unilateral versus coordinated effects may demand different market definitions or focus. Unilateral effects analysis focuses on the loss of head-to-head competition between the two merging firms; the fundamental issue is consumer substitution between the two firms. Analysis of coordinated effects focuses on the potential coordination of what might be called a hypothetical cartel. Substitution to firms outside this hypothetical cartel is important, as is the potential for

³⁷ For a detailed criticism of modern merger analysis and suggestions for reform, see Louis Kaplow, *RETHINKING MERGER ANALYSIS* (2024). For a thoughtful review, see B. Baker, *Looking at Merger Review from Outside an Ivory Tower*, ANTITRUST SOURCE, June 2025.

coordination among the firms in the it. In short, the “area of effective competition” is implied by the allegations.

Economics and law are in agreement that markets should be based on the degree of consumer demand substitution. In *DuPont* (1956), the Court focused on the potential for substitution to other products to constrain the ability of the monopolist to raise its price, which it referred to as “reasonable interchangeability.”³⁸ This focus suggests a working definition of an antitrust market as a collection of products that are sufficiently close substitutes, but such a definition requires a measure of “sufficiently close.”

DuPont introduced the use of the economic concept of cross-elasticity of demand as a quantitative measure.³⁹ *Brown Shoe* then flagged a number of “practical indicia”⁴⁰ as “evidentiary proxies for proof of substitutability and cross-elasticities,”⁴¹ including the following:

- the product’s uses and peculiar characteristics
- sensitivity to price changes
- distinct prices
- distinct customers
- industry or public recognition of the submarket as a separate economic entity
- unique production facilities
- specialized vendors.

The first five of these measures are relevant. Unique production facilities are a poor proxy for demand substitution, and specialized vendors may be.

Modern econometric methodologies have made it possible to reliably estimate cross-elasticities of demand in some cases. Applying the concept of “reasonable interchangeability” and the *Brown Shoe* factors is inherently imperfect because it requires a discrete allocation: Products are either “in” or “out” of the market. In fact, the degree of substitution between two products (the cross-elasticities of demand) differ along a continuum. Products that are outside the market may still provide some constraining influence.

The 1982 Merger Guidelines made a major contribution to resolving this problem and making market definition analysis more economically rigorous by offering a definition that is both useful at the conceptual level and potentially quantifiable. It defined a relevant product market as a group of products for which a hypothetical monopolist of those products could profitably implement a

³⁸ The Court’s implementation was flawed because DuPont was already charging the monopoly price for its cellophane product, which rendered further price increases unprofitable. This quickly became known as the Cellophane Fallacy, as discussed in more detail below.

³⁹ Cross-elasticity is the responsiveness of the sales of one product (measured as a percentage increase) with respect to price changes of another product (measured as a 1 percent price increase).

⁴⁰ *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962).

⁴¹ *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 51 (D.D.C. 2011).

SSNIP. This definition implies an own-elasticity of demand for this group of hypothetically monopolized products.

Own-elasticity is related to the set of cross-elasticities for these products. This economic definition flows from concerns about coordinated effects, in that it defines the set of products in a hypothetical cartel that would be profitable if it could prevent instability among its members because substitution to non-members would not be a sufficient constraint. For merger analysis, the usual SSNIP is 5-10 percent. The base price to which SSNIP is applied is the current price. Over the years, this hypothetical monopolist test (HMT) for market definition has been refined in several ways.

Several important (and sometimes overlooked) issues must be taken into account:

- Applying the SSNIP to the current price can cause a judgment to fall victim to the cellophane fallacy, as discussed in Chapter 9 when there is already significant price coordination (or even a cartel) or the presence of a dominant firm raises the current price close to the monopoly level. As the monopoly price is by definition the profit-maximizing price, an SSNIP above this price is necessarily unprofitable. Applying this finding to the hypothetical monopolist test (without recognition of the cellophane fallacy) would reject that market definition. When a larger market is considered, it may be unconcentrated. The cellophane fallacy can be prevented by using a lower price benchmark for the SSNIP. Another solution is to determine whether sales are diverted from other products and compare those products with ones that gain sales from an SSNIP above the current price. Divergence between these products can signal the cellophane fallacy.
- Analyzing SSNIPs above the current price may be irrelevant to the actual competitive concern from the merger. The HMT based on the SSNIP focuses on the competitive concern that the merger may raise prices. But the potential competitive concern about a merger might be that it will prevent price competition that would have caused prices to fall. Such an outcome could result from the acquisition of a potential or emerging nascent competitor whose entry would increase market competition or the acquisition of a small firm that might become a low-cost or maverick firm in the near future.
- The simplest SSNIP is a uniform price increase for all products in the relevant market. Using it may not be necessary or appropriate for analyzing the competitive concerns in some markets. The competitive concern may involve targeted price increases only for the prices of one of the merging firms. In the proposed (and ultimately abandoned) AT&T/TMobile merger, for example, AT&T and Verizon charged substantially higher prices than TMobile. The main concern in that merger was that the merged firm would raise TMobile's prices but not AT&T's. The role of price discrimination in defining narrow markets is discussed later in this chapter.
- The SSNIP might involve only certain brands or products of the merging firms. For example, wireless phone service can be purchased through a long-term contract or month-to-month through prepaid service. Lower-income consumers and consumers with low credit scores tend to purchase prepaid service. In this case, three possible relevant markets might be

analyzed: all service, long-term contracts, and prepaid service. In the TMobile/Sprint merger, the primary concern was the reduction in competition for prepaid service.

- The HMT does not yield a unique market definition. Section 7 is violated if there are anticompetitive effects in any relevant market. Recognizing this non-uniqueness is important, because a generalist court might want to define a single or “best” market that captures its abstract notion of the unique “area of effective competition.” In the beer market, for example, the HMT might be satisfied by market definitions of light beer, domestically produced beer, all beer, all malted alcoholic beverages, all alcoholic beverages, or even all beverages.⁴² These “nested” submarkets also satisfy the HMT.⁴³
- A generalist court might initially be uncomfortable with the notion that antitrust markets defined by the HMT are not always the markets defined by firms. And the relevant market for evaluating a merger in one industry may be different from the relevant market for a different merger. But it is important to resolve this discomfort. A given merger may raise competitive concerns under multiple market definitions.
- If a firm raises its price, it can lose sales to close substitute products. Consumers might also just forgo purchase of that type of product. A firm’s (own-price) demand elasticity includes both sources of substitution. (In an economic sense, the latter effect is substitution to some broad set of all other products.) A variant of this issue came up in the H&R Block/TaxAct merger,⁴⁴ where the parties argued that an important price-constraining substitute for their digital do-it-yourself tax preparation software was pen-and-paper work by the taxpayer. The FTC expert economist in the case analogized this claim to the question of whether “sitting at home and drinking chicken soup [would be] part of the market for [manufactured] cold remedies?”⁴⁵ As a strictly economic matter, the answer could be yes, if that potential substitution would constrain the price of a hypothetical monopolist. In the actual case, the court concluded that it did not believe a sufficient number of consumers would switch to pen and paper to include it into the relevant market.
- Even if firms set pre-merger prices for product bundles, there may be a competitive concern involving a subset of the products in the bundle. In this situation, the relevant SSNIP would be applied only to the subset. For example, suppose that firms sell a product to grocers around the country at a uniform national price; that two of these firms seek to merge; and that in one city they are the only purveyors. A competitive concern may be that after the merger, the firm will deviate from the uniform national price and begin to charge a higher price in this now-monopoly market. If the merged firm sells its product to national grocery chains, it might continue to charge a uniform price but raise that price to incorporate its greater bargaining power in the city in which it has a monopoly.

⁴² The 1982 Merger Guidelines declared that “the” relevant market was the narrowest market definition satisfying the HMT. This definition did not make good legal or policy sense. Even if a merger did not raise competitive concerns in (say) the light beer market, it might lead to higher prices in the market for all beer.

⁴³ *Brown Shoe* was read to suggest that submarkets might not satisfy the same conditions as relevant markets. In modern economic practice, they must do so.

⁴⁴ *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36 (D.D.C. 2011).

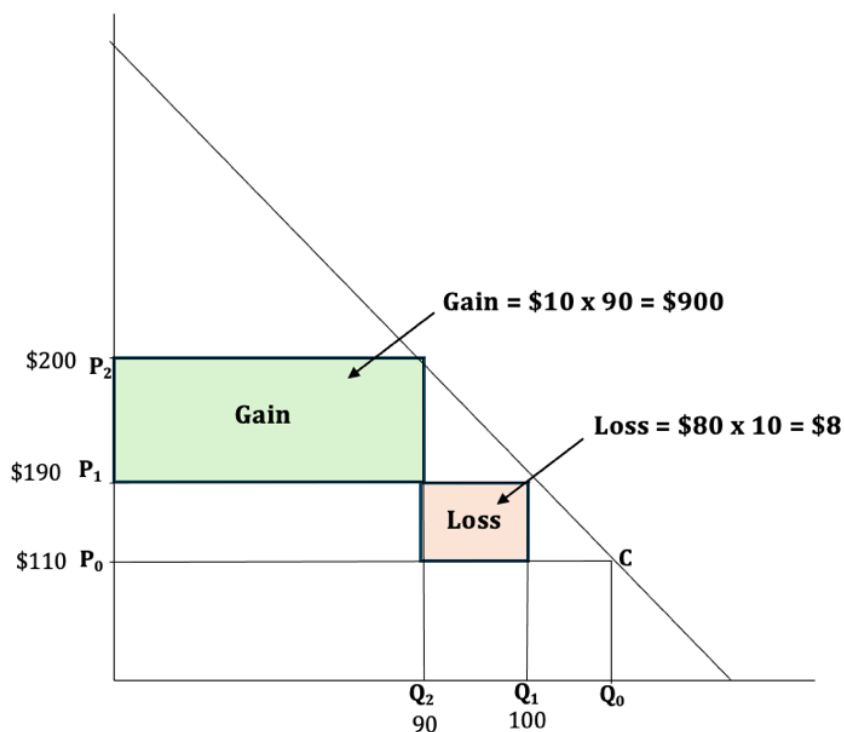
⁴⁵ *Id.*

- Supply conditions can affect outcomes. Suppose that a close substitute for a product sold by merging firms would normally provide a substantial pricing constraint. If the producers of that substitute product lack excess capacity to supply more sales if the merging firms were to raise their prices, an HMT consisting solely of the merging firms would find it profitable to implement an SSNIP.⁴⁶ This possibility could support a narrower market that does not include that firm. The same point would apply to foreign imports constrained by quotas. A strict economic analysis might define the market broadly and then account for the constraint as part of the competitive effects analysis. However, competitive effects may never be reached if including the capacity-constrained (or quota-constrained) firms in the market leads to low concentration.
- Supply conditions also come into play in the determination of market share when there are firms that do not produce the relevant product but could rapidly begin to do so. (These “rapid entrants” are discussed below, in the entry section.)
- The HMT is based on the question of whether the SSNIP is “profit-maximizing” rather than simply “profitable.” To see the difference, suppose that an SSNIP of 5 percent would be profitable (i.e., increase profits) but that a hypothetical monopolist might earn even higher profits from a SSNIP of only 1 percent. The SSNIP of 1 percent may be considered too low to capture significant competitive concerns in light of the likelihood that the merger could lead to lower costs.

1. Quantification of the hypothetical monopoly test with critical loss analysis

Economists have developed quantitative methodologies for implementing the HMT, as illustrated in Figure 12.1, which depicts what happens if a hypothetical monopolist (or hypothetical cartel) were to institute an SSNIP. The market participants charge a common price of \$190 and have a common marginal cost of \$110, and aggregates sales in the market are 100 units. Consider an SSNIP of \$10 that raises the price from \$190 to \$200. If aggregate sales fall to 90 units, profits rise from \$8,000 ($\80×100) to \$8,100 ($\90×90). The set of brands of this product would therefore satisfy the basic HMT.

⁴⁶ The merging firms would want to include those substitutes in the market and then devalue them as part of the competitive effects analysis as a way of reducing market shares and concentration in applying the structural presumption.

Figure 12.1 Standard critical loss analysis

To calculate profitability, the standard critical loss analysis estimates and compares the gain versus the loss components from raising price. In Figure 12.1, the gain is the \$10 higher price earned on the 90 sales that remain (\$900). The loss is the \$80 profit margin sacrificed from the 10-unit reduction in sales (\$800). As the gain is larger, the price increase is profitable.

2. Modern critical loss analysis: The recapture percentage methodology

This critical loss analysis methodology has two problems. First, it evaluates whether the price increase is profitable, not whether it is profit-maximizing. Second, it is based on incomplete information, in that it does not explicitly take account of the determinants of the initial price. The presence of an initial price that is very close to cost and a fairly inelastic aggregate demand curve would suggest that the products in the market were nearly homogeneous and very close substitutes for one another. A price that is significantly above cost would suggest that the products were differentiated.

The 2010 Merger Guidelines introduced more rigorous approach to critical loss analysis, which accounts for profit maximization and the substitution information revealed by the initial prices.⁴⁷

⁴⁷ U.S. Department of Justice and FTC, Merger Guidelines (2010, 2023). For the development of critical loss analysis, see Michael Katz and Carl Shapiro, *Critical Loss: Let's Tell the Whole Story*, 17 ANTITRUST 53 (Spring 2003); Daniel P. O'Brien and Abraham L. Wickelgren, *A Critical Analysis of Critical Loss Analysis*, 71 ANTITRUST L.J. 161 (2003); Joseph Farrell and Carl Shapiro, *Recapture, Pass-Through, and Market Definition*, 76 ANTITRUST L.J. 585 (2010).

This approach leads to a formula that estimates and compares the recapture percentage (RP) and the price–cost margin (PCM).

The RP is based on the *diversion ratio* (DR), the share of the sales lost by one product from a unilateral price increase that is recaptured by the other product, assuming no other products increase their prices. It is related to the own-elasticity of demand of the firm that hypothetically unilaterally raises its price by an SSNIP and the cross-elasticity to the other firm as well as the quantities demanded of both products.⁴⁸ The RP is defined as the fraction of sales lost by that firm in the candidate market that diverts to all other firms in the candidate relevant market, when the price of that firm's product (and only that firm's product) hypothetically is increased by an SSNIP (holding the other prices constant at the pre-merger level).

Consider a candidate luxury automobile market comprising only BMW, Mercedes, Lexus, and Audi. Consider an SSNIP by BMW that leads its sales to fall by 1,000 units. Suppose that Mercedes captures 250 of these units and Lexus and Audi each capture 100, with the other 550 diverted to firms outside the candidate market (Porsche, Lexus, Infiniti Range Rover, Ferrari, and so on). In this case, the relevant DRs are the fractions of BMW's lost sales recaptured by the other products in the proposed market (25 percent to Mercedes and 10 percent each to Lexus and Audi). Summing these figures yields an RP of 45 percent ($25 + 10 + 10 = 45$) by the hypothetical monopolist resulting from the BMW price increase.

The PCM is the difference between price and marginal cost, expressed as a percentage of the price. If the average marginal cost of a BMW is \$30,000 and the average price is \$50,000, the difference between price and marginal cost is \$20,000. The PCM is therefore 40 ($\$20,000/\$50,000$). The methodology leads to the following formula and associated question:

***For each Firm- i in the candidate market,
check the calculation***

Is $RP_i \geq (2 \times SSNIP) / (2 \times SSNIP + PCM)$?

***If so, then this firm's RP supports the
candidate market definition.***

The usual SSNIP is 5–10 percent. In the example, the RP for the BMW price increase is 45 percent. With a PCM of 40 percent and a 10 percent SSNIP, the right-hand side of the equation is equal to 33 percent ($20/(20 + 40)$), which is smaller than the 45 percent RP, supporting the candidate market. The RP question is applied to every firm in the candidate market. If the inequality does not hold for all firms, then a weighted-average RP is calculated.

⁴⁸ The DR from Product 1 to Product 2 from a Product 1 price rise is equal to the absolute value of the ratio of the cross-elasticity of demand for Product 2 with respect to an increase in the Product 1 price to the own-elasticity of Product 1 multiplied by the sales ratio (Q_2/Q_1).

The recapture methodology for analyzing critical loss can support narrow market definitions when the PCM is substantial. The four-firm market in the example is supported for a 10 percent SSNIP, even though more than 50 percent of BMW's lost sales are diverted to firms that are not in the relevant market. In fact, because the diversion from BMW to Mercedes is 25 percent in the example, a relevant market limited to BMW and Mercedes would satisfy the formula, and a merger between BMW would be seen as a "merger to monopoly," despite that fact that 75 percent of the diversion from BMW flows to firms outside the relevant market. If the SSNIP were set at 5 percent, the right-hand side of the equation would have been only 20 percent ($10/(10 + 40)$), which is less than the 25 percent diversion to (and recapture by) Mercedes. Thus, this HMT formula is satisfied (By contrast, an alternative candidate market composed solely of BMW and Audi would not be supported even at an SSNIP of 5 percent because each of the diversion ratios would be less than 20 percent.)

These narrow market definitions are features not bugs. The RP approach flows from the standard economic model of differentiated product price competition and underpins antitrust economics.⁴⁹ It is also used to estimate unilateral upward pricing pressure, as discussed below.

3. Proportional Diversion

As a first step before DRs are estimated, economic analysts may calculate "proportional" DRs. These ratios base the DRs on the market shares of the various firms. Suppose, for example, that in the candidate luxury automobile market, market shares are 40 percent for BMW, 30 percent for Mercedes, 20 percent for Lexus, and 10 percent for Audi. Assuming that consumers shift only among luxury vehicles in response to a BMW price increase (and assuming that other carmakers do not raise their prices in response), the proportional DR to Mercedes will be 50 percent (its 30 percent share divided by the 60 percent non-BMW share; the other proportional DRs will be 33.3 percent ($20/60$) to Lexus and 16.7 percent ($10/60$) to Audi. These proportional DRs are "conditional" because they are based on the assumption that BMW consumers divert only to other luxury vehicles.

"Unconditional" DRs, which take account of consumer diversion to vehicles outside the candidate market, would be lower. To estimate the share of sales that would be diverted to products outside the relevant market, Serge Moresi and Hans Zenger devised what they called the RIME formula. This formula yields the retention ratio (R_1), the fraction of diverted sales retained inside the candidate market following a price increase by Firm 1. The share of sales diverted to products outside the relevant market is equal to $1 - R_1$. The RIME formula assumes symmetric retention ratios ($R_1 = R_2 = R_3 = R$). R depends on a type of weighted average of firms' profit margins (M) and the consumer demand elasticity (E) for the candidate market:

$$R = 1 - (M \times E)$$

⁴⁹ The formula is based on a straight-line (linear) demand curve. This assumption—which is often made—leads to the price increase being equal to half the SSNIP. An adjustment can then be applied if there is evidence of a nonlinear demand curve.

If, for example, the average margin 30 percent and the consumer elasticity for these luxury vehicles is 1, the retention ratio following a unilateral price increase by any luxury car brand is equal to 70 percent ($R = 1 - [0.3 \times 1]$). The unconditional DR to Mercedes is then 35 percent, calculated as its conditional DR of 50 percent times the retention ratio of 70 percent.

However, it is important to emphasize that this market definition is based on an assumption of proportional diversion. Although some consumer utility functions generate proportional diversion, proportional diversion is not a general result.

4. Evidence in support of a product market definition

Market definition for sell-side mergers and the HMT test focus on demand substitutions.⁵⁰ The merger guidelines issued by agencies around the world provide lists of relevant factors for evaluating the magnitude of likely demand substitution. Some are quantitated and can be inserted into the HMT; others are qualitative. A typical list of factors includes the following:

- functional differences
- quality differences and price differences among the potentially substitutable products
- differential switching costs among the products
- the identity and behavior of buyers of the products
- the strategies of sellers and interactions among the sellers, including price monitoring and pricing responses
- quantitative evidence of substitution including win/loss data and quantitative estimates of consumer substitution.

The checklist in the annex to this chapter summarizes sources of probative evidence for defining relevant product markets.

For economists, data showing how consumers shifted their purchases in response to price changes are considered highly probative evidence for implementing the hypothetical monopolist methodology. Firms often have historical “win/loss” data that can be used for this purpose. This data reports the business they attempted to obtain, the bid made, whether the firm won the business, and (often) the names of the other bidders and winning bidder (if the firm lost the bid). Historical price changes might be analyzed econometrically with controls to account for supply and demand changes that could distort evidence of substitution in response to price changes. Surveys are often used, although they raise questions about whether consumers’ answers reflect what they would actually do in response to real-world price changes.

This type of data analysis must grapple with various complexities. Economic analysts attempt to distinguish between the switching rate generally and switches that occur in response to price or quality changes, as only the latter switches are predictive of DRs. Consumer responses to product shortages of the product usually purchased can show diversions in response to the infinite price increase that is implied by a shortage.

⁵⁰ For an overview of market definition issues and the focus of demand substitution, see Jonathan Baker, *Market Definition: An Analytical Overview*, 74 ANTITRUST L. J. 129 (2007). For buy-side mergers, the analogous concept is supply substitution by the sellers.

For retail products, retail scanner data can provide evidence of consumer switching. The week-to-week price and quantity changes revealed can be useful in building econometric demand models that estimate price elasticities, from which DRs can be calculated. Week-to-week price changes resulting from temporary price reductions are not SSNIPs, however, as consumers may stock up on a product in response to a temporary price discount (the “pantry loading effect”). If price rises and consumers view the change as temporary, they may draw down their inventories. Consumers may also notice price changes only with a lag and fail to respond the week the price changes.

Another issue is the use of retail market DRs to analyze mergers between the manufacturers of those products, as supermarket diversions in response to wholesale price changes are not necessarily the same as consumer diversions in response to retail price changes.

Showing positive price correlations between two products is not a reliable indicator of substitution or competition between them, because both prices may be affected by common cost or demand factors.⁵¹ For example, an increase in the price of electricity would raise the prices of aluminum smelting and AI services, because both products require large amounts of electricity. But they are certainly not demand substitutes.

Showing zero correlations between price and concentration across separate geographic markets is also an unreliable indicator that a merger will not lead to higher prices just as a positive correlation does not provide reliable evidence that a merger will lead to higher prices. Different geographic markets may differ with respect to other relevant demand and supply factors.⁵² By contrast, in a single market, these complications may not apply. If prices increase rapidly after a previous merger, one might infer causation, subject to the caveat that a study should attempt to identify and control for other possible supply and demand changes.

B. Price Discrimination and Targeted Customer Markets

1. The economics of price discrimination

Price discrimination involves charging different prices to consumers who can be served at identical costs. Engaging in it requires market power.

There are several different categories of price discrimination. The most common category is charging different prices to consumers based on their willingness to pay or different prices to groups of consumers based on their different demand elasticities.

Suppose a monopolist serves two types of buyers. Consumers in Group A are more price sensitive than consumers in Group B (i.e., their demand as a group is more elastic). With uniform prices, the monopolist would charge the profit-maximizing price given the average of these two elasticities.

⁵¹ See Gregory J. Werden and Luke M. Froeb, *Correlation, Causality, and All that Jazz: The Inherent Shortcomings of Price Tests for Antitrust Market Delineation*, 8 REV. INDUS. ORG. 329 (1993).

⁵² Nathan Miller et al., *On the Misuse of Regressions of Price on the HHI in Merger Review*, 10 J. ANTITRUST ENFORCEMENT. 248 (2022),

However, if the monopolist can charge different prices, it will charge a higher price to Group B, because its members have more inelastic demand.

Profitable price discrimination by a monopolist depends on two requirements. First, the monopolist must have the ability to identify the separate groups of consumers, in order to charge a higher price to one of them. Suppose that Amazon figures out that single, tall men who like horror films and science fiction books and commute at least 8 miles a day are less sensitive to changes in the price of electronic gear than other consumers. This group of men could be targeted for price discrimination. Amazon might be able to do identify them by analyzing their social media posts and driving history from their navigation apps and correlating their purchases of other products. It could also gather data from pricing experiments in which it charges different prices to different groups of users. It also must avoid the potential for arbitrage, which could be achieved by, say, having a woman order the products to avoid the high prices he is quoted.

Consumers with high willingness to pay or inelastic demand might also be identified and charged high prices through self-selection devices. For example, airlines identify business travelers (who are less price sensitive than leisure passengers) and avoid arbitrage by charging higher prices for fully refundable tickets for trips that do not include weekends or last-minute purchases or larger seats and earlier boarding.

Second, profitable price discrimination requires the ability to avoid arbitrage, which takes place when a consumer in the group paying the lower price purchases the good and resells it to consumers in the group paying the higher price. By making tickets nontransferrable, airlines are able to avoid arbitrage.

2. Implications for merger analysis and market definition

A merger may create or increase the ability and incentive to set discriminatory prices. To analyze this concern, it can be useful to determine whether there are relevant markets made up of consumers that are or potentially could be targeted for higher prices. This determination can be made by considering SSNIPs by the hypothetical monopolist that are charged only to certain targeted groups of customers or the products they buy. Even if the hypothetical monopolist is unable to profitably raise prices to all customers, it might be able to raise prices to some customers. Such non-uniform SSNIPs can be used to define narrower “targeted consumer” (price discrimination) markets.

Price discrimination is a concern in many merger cases:

- The TMobile/Sprint⁵³ merger raised fears that the merged firm could raise prices to consumers with low credit scores, who were able to purchase only prepaid wireless phone service.
- A merger of two local radio stations might allow them to charge higher prices to local but not national advertisers.

⁵³ *State of New York et al. v. Deutsche Telekom AG et al*, No. 1:2019cv05434 - Document 409 (S.D.N.Y. 2020), *United States et al. v. Deutsche Telekom AG; T-Mobile US, Inc.; SoftBank Group Corp.; and Sprint Corp.*, Civil Action No. 1:19-cv-02232-TJK (D.D.C.). I consulted with Sprint on this matter.

- A merger of two nearby hospitals could target emergency room patients, who are less likely to travel to distant hospitals to save money.
- A rental car merger could allow the merged firm to raise prices on midweek rentals, to target business renters.
- The merger of two nearby supermarkets could reduce the availability of coupons used to compete for price-sensitive customers.

Markets with individually negotiated prices are often analyzed as price discrimination markets. Intermediate goods prices set by large companies are commonly reached through individualized bilateral negotiations. Such negotiations can range from negotiating the discount off-list price to engaging in ubiquitous price discrimination. In principle, the relevant market can be as small as a single customer, suggesting that a merger could violate the Clayton Act, even if only a single customer is harmed (in practice, agencies focus only on potential harms to a significant group of customers).

Rulings from narrow negotiation markets in merger cases include the following:

- *Sysco/U.S. Foods*:⁵⁴ “Broadline distributors must offer a particular kind of ‘product’—a cluster of goods and services that can be delivered across a broad geographic area—to compete for national customers. In that sense, the customer’s requirements operate to define the product offering itself.”⁵⁵
- *Staples/Office Depo (2016)*:⁵⁶ The nature of how business-to-business customers operate, “including the services they demand, supports a finding that they are a targeted customer market for procurement of consumable office supplies. There is overwhelming evidence in this case that large [business-to-business] customers constitute a market that Defendants could target for price increases if they are allowed to merge.”⁵⁷
- *Anthem/Cigna*:⁵⁸ “National accounts require carriers that can supply in-network providers in all of the locations where their employees live, work, and travel. . . . Both Anthem and Cigna have established separate profit and loss centers for national accounts, with their own executives and separate marketing, sales, customers relations and underwriting teams. . . . Thus, the evidence strongly supports the conclusion that national account customers are a distinct subset of the health insurance market, with needs that differentiate them from employers on the smaller end of the group spectrum.”⁵⁹

In these cases, the courts accepted the use of size parameters. In *Anthem*, the market was limited to “national” customers with more than 5,000 employees. In *Staples*, it was limited to customers purchasing more than \$1 million of office supplies a year. In *Sysco*, it was limited to customers with

⁵⁴ *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1 (D.D.C. 2015).

⁵⁵ *Id.* at 38 (emphasis added).

⁵⁶ *FTC v. Staples, Inc. and Office Depot, Inc.*, 190 F. Supp. 3d 100 (D.D.C. 2016).

⁵⁷ *Id.* at 127 (emphasis added).

⁵⁸ *United States v. Anthem, Inc.*, 236 F. Supp. 3d 171 (D.D.C. 2017), *aff’d*, 855 F.3d 345 (D.C. Cir. 2017).

⁵⁹ *Id.* at 196-197 (emphasis added).

national needs, such as group purchasing organizations, food service management companies, hospitality chains, restaurant groups, and government agencies.

The determination of the geographic market definition may also be affected by price discrimination. Competition is sometimes limited by distance (e.g., mixed concrete and heated asphalt can be transported only over short distances before its quality declines. The significant transportation costs of heavy products, such as timber, limit the number of producers. In these cases, producers may be able to charge higher prices to customers that are close by and lack cost-effective alternatives. A merger can reduce the number of nearby alternatives, facilitating price discrimination.

C. Multi-Product Firms

The hypothetical monopolist in the HMT is typically conceptualized as a standalone firm that sells only the relevant product. This assumption can lead to a flawed market definition when some firms sell multiple products (either substitutes or complements) that are not included in the market. Suppose, for example, that there are two automobile manufacturers that produce both SUVs and light trucks. The fact that some SUV purchasers view light trucks as a close substitute raises the question of whether the relevant market should include only SUVs or also light trucks.

To see the implications of this market definition, consider a potential SUV-only market. In the pre-merger market, the potential substitution from SUVs to light trucks by some consumers would incentivize each firm to charge somewhat higher prices for its SUVs, reasoning that a higher price for its SUV brand would cause some consumers to buy its brand of light truck, even while recognizing that others would switch to its rival's SUVs or light trucks. If the firm produced only SUVs, it would charge a lower price.

This difference can lead to an error in applying the HMT. Suppose that the hypothetical monopolist is assumed to produce solely SUVs. In this case, it would not take into account the fact that the SSNIP would lead to some substitution to light trucks. Instead, it would treat light trucks as a separate competitor. The hypothetical monopolist would internalize the impact of diversion from one SUV brand to another, which would tend to make the SSNIP profitable. In contrast, the hypothetical monopolist assumed to produce only SUVs would not take account diversion to light trucks, which would tend to make the SNIP unprofitable. Depending on the relative sizes of these two DRs and the margins on SUVs and light trucks, the SSNIP might be unprofitable, in which case the SUV market definition would be rejected.

If the two firms merged, they would take into account the recapture of profits from diversion to light trucks and would find the SUV SSNIP profitable. To avoid this potential error, it is better to replace the hypothetical standalone monopolist with a hypothetical cartel whose members also sell light trucks but are considering raising only the price of SUVs.⁶⁰

⁶⁰ The 2010 Merger Guidelines recognized this problem and proposed the hypothetical cartel solution. They focused on an analogous issue when the other product is a complement (e.g., smartphones and smartwatches) rather than a substitute. FTC and DOJ, Horizontal Merger Guidelines (2010) at note 4.

D. Cluster Markets

As a strict economic matter, market definition should focus on demand substitution, and relevant markets should normally include only substitutes. However, courts have sometimes defined relevant markets that include complementary product. Beginning with *Philadelphia National Bank*, these markets have been referred to as “cluster markets.”⁶¹ In *Philadelphia National Bank*, the cluster market definition was one of convenience; the market shares and market concentrations statistics for deposits and loans were similar.⁶² In *Grinnell*, most providers of what was termed “central station protective service” sold a large cluster of services.⁶³

Complementary products are often sold together for reasons that are not related to demand substitution. Left and right shoes are efficiently produced, sold, and consumed together. Auto buyers do not mix and match components, as allowing them to do so would raise production costs. In digital markets, interoperability constraints can limit unbundled component competition.⁶⁴ Supermarkets sell a broad array of complementary foods that consumers find it efficient to purchase at the same time at the same store (what have been termed *transaction complements*).

It is also the case that a firm with market power in two complementary products will have the incentive to sell them in a bundle at a lower combined price,⁶⁵ as doing so can lead consumers to substitute between matched bundles rather than buy unbundled products from different sellers. Such is not always the case, however. Hats and gloves are complements in consumption, but they are not typically produced or sold as a bundle.

A cluster market might also include a subset of products. In the 2016 *Staples*⁶⁶ case, for example, the government successfully defined the market as office consumables, excluding printing services. The rationale was that customers tended to substitute to other providers of printing services but preferred to buy consumables together at a single store.

⁶¹ *United States v. Philadelphia Nat. Bank*, 374 U. S. 321, 356 (1963). See also *United States v. Grinnell Corp.*, 384 U.S. 563, 593-95 (1966); *ProMedica Health Sys., Inc. v. FTC*, 749 F.3d 559 (6th Cir. 2014); *FTC v. Penn State Hershey Med. Ctr.*, 838 F.3d 327, 338 (3d Cir. 2016).

⁶² Steven C. Salop, *The Evolution and Vitality of Merger Presumptions: A Decision-Theoretic Approach*, 80 ANTITRUST L. J. 269 (2015).

⁶³ *United States v. Grinnell Corp.*, 384 U.S. 563, 572-74 (1966); As the Court stated, “What defendants overlook is that the high degree of differentiation between central station protection and the other forms means that, for many customers, only central station protection will do. Though some customers may be willing to accept higher insurance rates in favor of cheaper forms of protection, others will not be willing or able to risk serious interruption to their businesses, even though covered by insurance, and will thus be unwilling to consider anything but central station protection.” *Id.* at 574.

⁶⁴ For a related but somewhat different approach to these economic issues regarding market definition in the presence of complementary products, see Jonathan Baker, *Market Definition: An Analytical Overview*, 74 ANTITRUST L. J. 129, 157-59 (2007).

⁶⁵ Chapter 13 discusses this “Cournot complements” pricing issue.

⁶⁶ *FTC v. Staples, Inc. and Office Depot, Inc.*, 190 F. Supp. 3d 100 (D.D.C. 2016).

These examples raise the empirical question of whether firms selling only a single or a narrow set of products sufficiently constrain the prices of a hypothetical monopolist of the bundle. The typical competitive concern in a supermarket merger is that it could raise the price of “market baskets” of products. The assumption is that there is not enough substitution to farmers markets, butcher shops, and dollar stores that sell only certain products to constrain the prices of a hypothetical supermarket monopolist (although some substitutes, such as club stores, may constrain supermarkets’ monopoly power).

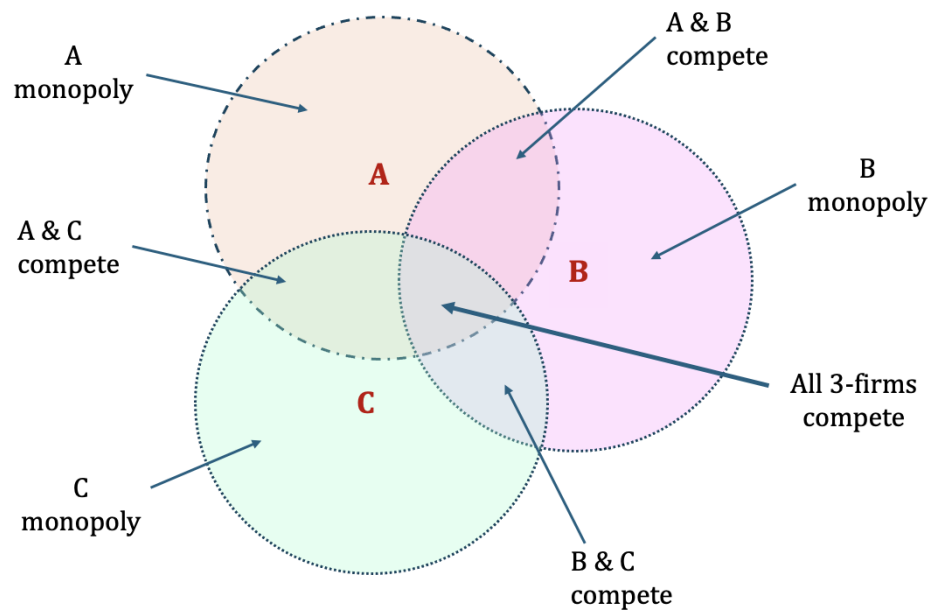
Another class of products are products that are efficiently produced together but are neither substitutes nor complements in consumption. The classic economics example is the production of mutton and wool; a more modern example would be oil refining, which produces jet fuel, gasoline, fuel oil and petrochemicals for plastics manufacturing. In these cases, the analysis of a merger between sheep herders or oil refiners would begin by defining separate markets for each product based on demand substitution, not cluster markets for the set of products. Competitive effects analysis would then analyze the interactions. For example, a sheep herder merger that created a wool monopoly that made it profitable to reduce output might also lead to a higher price of mutton. By contrast, an oil refinery merger that made it profitable to raise the price and reduce the output of gasoline might lead to lower prices for jet fuel, as the refinery alters the production mix.

E. Geographic Market Definition

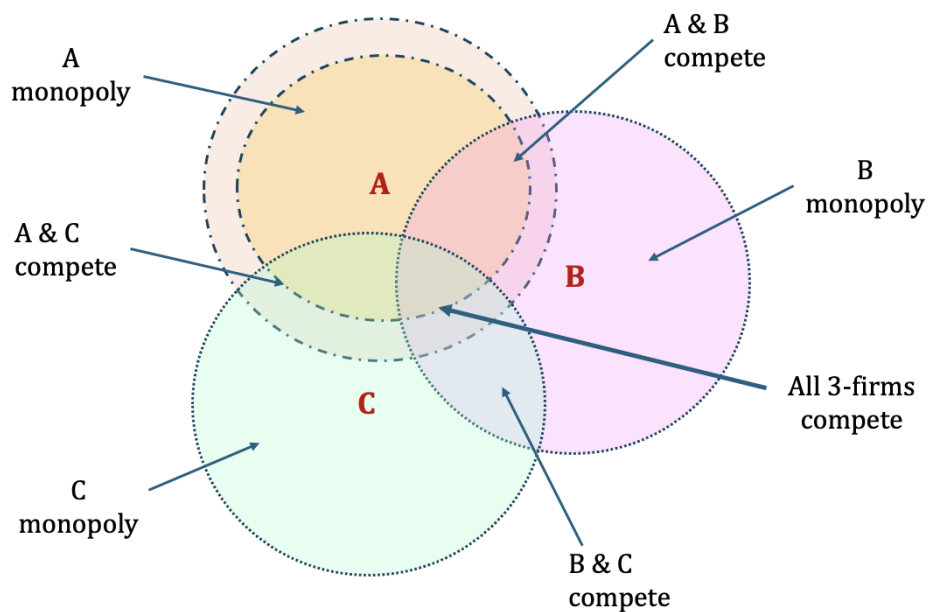
The analysis of geographic markets is analogous to the analysis of product markets. A price increase by a hypothetical monopolist consisting of all firms selling in a geographic market can be constrained by substitution to firms outside the market, either by consumers traveling outside or the firms delivering inside.

Consider, for example, consumers’ choice of a supermarket in a newly developed suburban area. Suppose there are three supermarkets in the area. Consumers’ transportation costs and the maximum distance they are willing to drive to obtain groceries creates a maximum draw area for each store.

The circles in Figure 12.2 show the draw areas of each store. They show that only a limited set of consumers find it economical to go to all three stores. Most consumers have a practical choice of only two stores, and many consumers view themselves as facing a monopoly store.

Figure 12.2 Supermarket draw areas and consumer choice

If Store A raises its price, its draw area circle shrinks, as illustrated in Figure 12.3. As a result, customers who live in the areas between the two circles will divert to the other two stores. But Store A will still retain most of its monopoly customers.

Figure 12.3 Illustrating the impact of store A price increase

In supermarket merger cases, the FTC has traditionally defined relevant markets in suburban areas as 3–6 miles around each store. Club stores like Costco have larger draw areas; the FTC was reluctant to include these stores in the relevant markets because of their more limited product selection. In the *Kroger/Albertsons*⁶⁷ supermarket merger, the FTC’s complaint alleged anticompetitive effects in a large number of local grocery store markets based on these mileage assumptions and found high concentration levels.

Economists have also developed econometric models to estimate consumers’ supermarket choices based on prices, store locations and size, store brand, and consumer locations and demographics such as income and age.⁶⁸ These models can be used to estimate the diversions resulting from price changes for use in market definition and unilateral effects analysis.

F. Buyer-Side Market Definition

In the *Kroger/Albertsons*⁶⁹ supermarket merger, the FTC’s complaint alleged anticompetitive effects in the local input markets for unionized workers. For this buyer side market, the analogous buyer-side version of the HMT would be based on a small but significant decrease in wages (SSNDW). Consider a hypothetical employer cartel (or monopsonist) comprising all the unionized grocery stores in an area. Before the merger, these stores compete by negotiating independently with the unions for workers. Suppose that these competing grocery stores begin to set wages collectively and reduce wage rates by an SSNDW. Unless a sufficient number of workers would substitute for non-union grocery stores or non-grocery store jobs or migrate to other areas, the wage decreases would be profitable and the proposed relevant market would satisfy the HMT.

Whether defection of workers would be sufficient to prevent a wage reduction for these unionized supermarket workers is an empirical question that is very unlikely to be satisfied if the workers are unionized, because collective bargaining by the union (or unions) would likely succeed in raising the wage rates and benefits of the unionized workers above the levels in their next-best alternative employment opportunities at non-unionized supermarkets or elsewhere (the central goal of unionization).

In the merger litigation, the FTC presented evidence of higher union wages. It also presented evidence that the union was able to obtain higher wages at both employers when it followed the strategy of having a strike at one of them at a time after the two chains did not reach an agreement between them to negotiate jointly with the workers.

⁶⁷ Opinion & Order, *FTC v. The Kroger Co.*, No. 3:24-cv-00347-AN (D. Or. December 10, 2024); Findings of Fact and Conclusions of Law, *Washington v. The Kroger Co.*, No. 24-2-00977-9 (King Cty. Sup. Ct. December 10, 2024).

⁶⁸ Paul B Ellickson, Paul L.E. Grieco, and Oleksii Khvastunov, *Measuring Competition in Spatial Retail*. 51 RAND J. ECON 189 (2020).

⁶⁹ Opinion & Order, *FTC v. The Kroger Co.*, No. 3:24-cv-00347-AN (D. Or. December 10, 2024); Findings of Fact and Conclusions of Law, *Washington v. The Kroger Co.*, No. 24-2-00977-9 (King Cty. Sup. Ct. December 10, 2024).

The court found this evidence to be insufficient, for reasons that are not entirely clear. One possibility is that the downstream market case was very strong and the FTC litigating staff faced limited resources, so it devoted little attention to the labor market. The FTC presented detailed quantitative HMT evidence supporting the downstream markets but not for the labor markets, which made it appear that their unionized labor market definition was not rigorously supported. As a result, the court did not rule in its favor on the labor market definition.

III. Concentration and the Structural Presumption

A. Market Shares and Concentration

After the relevant market(s) have been defined, market shares of the merging firms and the other firms in the market are estimated and used to calculate the level and change in market concentration caused by the merger. Market shares are normally based on sales revenue, so that price differences resulting from quality and variety differences are taken into account. If the competitive issue is innovation competition, market shares based on R&D shares or patent shares might be calculated. For input market concerns, market shares would be based on input purchase shares.

Although market definition in output markets focuses on demand substitution, the Merger Guidelines include as participants in the market firms that do not currently sell the product but could rapidly begin to do so without bearing any significant sunk costs in the event of an SSNIP. These “rapid entrants” are assigned product levels and market shares corresponding to their likely sales in the event of an SSNIP, subject to the capacity they would have to supply the relevant market. They might include foreign firms that could potentially shift some sales from the domestic market to the United States if US prices were higher. (This methodology is discussed in more detail in the entry and expansion section below.)

Before the 1982 Merger Guidelines, concentration was normally measured by the four- or eight-firm concentration ratio, calculated as the sum of the market shares of the top four (or top eight) firms. Those guidelines introduced the Herfindahl Hirshman Index (HHI), which is now used instead.⁷⁰ The HHI is calculated as the sum of the squared market shares of all firms in the market, multiplied by 100.⁷¹ If the three firms in a market have market shares of 50 percent, 30 percent, and 20 percent, the HHI would be $2,500 + 900 + 400 = 3,800$. The increase in the HHI caused by the merger is equal to twice the product of the shares of the two merging firms. For example, a merger of the firms with shares of 30 percent and 20 percent would increase the HHI by 1,200 points ($2 \times 30 \times 20$); the post-merger HHI would be 5,000 ($3,800 + 1,200$).

If the market has a single firm with a market share of 100, the HHI is 10,000 (i.e., 100×100). If a market has N firms with equal market shares, the HHI is $10,000/N$. A market with two firms with

⁷⁰ In the technical Cournot model of competition among oligopoly firms that compete by setting output levels, the weighted-average price–cost margin is equal to the HHI divided by the market demand elasticity.

⁷¹ As a practical matter, if there are a few firms with very low but unknown market shares, the squaring means that erring in assigning them shares will not create a significant error in the HHI.

50 percent each has an HHI of 5,000 ($10,000/2$). If the market consisted of four equal-sized firms, the HHI would be 2,500 ($10,000/4$).

B. The Structural Anticompetitive Presumption

Philadelphia National Bank created an anticompetitive presumption based on market structure: “An undue percentage share of the relevant market [that] results in a significant increase in the concentration of firms in that market.”⁷² The combined market shares of the two merging firms were around 34–36 percent, depending on the product. The Court suggested that 30 percent would be sufficient to satisfy the anticompetitive presumption. Although the decision does not report the HHIs, the pre-merger HHIs were about 1,450 and increased by about 600 points as a result of the merger.⁷³

Over the years, the Merger Guidelines have defined concentration thresholds for applying a structural anticompetitive presumption in enforcement analysis. The 1982 and 1992 Guidelines set the basic threshold at a post-merger HHI of 1,800 and a change (Δ) of 100. The 2010 Merger Guidelines raised the levels to an HHI of 2,500 and a Δ HHI of 200. The 2023 Merger Guidelines reduced these levels back to an HHI of 1,800 and a Δ HHI of 100. The 2023 Merger Guidelines also added a structural presumption threshold for a merger leading to a combined market share of at least 30 percent and a Δ HHI of 100.⁷⁴

The 2010 Guidelines raised the thresholds to reflect the facts of historical merger complaints. No cases were brought with HHIs of 1,800 and few if any with HHI levels of 2,500.⁷⁵ The potential practical problem with this approach is that there was a serious and apparently unrecognized disconnect between the agencies and courts. The agencies’ enforcement decisions were based on resource constraints and the need to appear carefully conservative; the courts treated the threshold as the government’s view of where competitive concerns are so significant that the merger should be treated as presumptively anticompetitive.

Agency enforcement relies heavily on the structural presumption and the associated sliding scale. When the threshold is 1,800, a merger that leads to an HHI of 2,800 is treated as a significant difference. If the threshold is 2,500, the merger will seem like a marginal increase over the presumption level; the agencies will not bring those enforcement actions but will set a higher

⁷² *United States v. Philadelphia National Bank*, 374 U.S. 321, 363 (1963).

⁷³ Steven C. Salop, *The Evolution and Vitality of Merger Presumptions: A Decision-Theoretic Approach*, 80 Antitrust L. J. 269 (2015). For a detailed overview of the justifications for the current structural presumption, see Louis Kaplow, RETHINKING MERGER ANALYSIS 137-70 (2024).

⁷⁴ The 1982 Merger Guidelines mandated a structural presumption for acquisitions by a firm with a market share of at least 35 percent. This presumption was downplayed in the 1992 Guidelines and eliminated in the 2010 Guidelines.

⁷⁵ Carl Shapiro and Howard Shelanski, *Judicial Response to the 2010 Horizontal Merger Guidelines*, 58 REV. IND. ORG. 51, 64 (2020) (“During the 10-year periods on either side of the 2010 revisions, the agencies have rarely brought cases that are close to the Guidelines levels.”).

internal bar, creating a recipe for under-enforcement.⁷⁶ Indeed, if applied over time, this practice could lead to an enforcement death spiral, in which in response to increase in the threshold, the agencies bring only even more extreme cases, which then leads to a higher threshold and so on. The reversion back to 1,800 in 2023 reflected this concern.

As a general measure of market structure, the HHI has advantages over the four- or eight-firm concentration ratios used previously, because the HHI involves all firm but places more weight on the largest firms, which likely have the greatest impact on the competitive effects. As a larger share of production controlled by the largest firms increases the risk of coordination, the HHI can serve as a rough initial gauge for coordination concerns. George Stigler's classic 1964 economics model on oligopoly interaction and collusion derived a connection between the HHI and the risk of collusion under certain restrictive assumptions.⁷⁷

The increase in the HHI has some incremental value as probative evidence for the risk of increased coordination resulting from the merger. It has less evidentiary value for unilateral effects concerns. Under limited circumstances, the increase in the HHI has a direct relationship to the GUPPI used in differentiated product market mergers (although the GUPPI is a more direct measure),

The HHI has been criticized on the grounds that when a product is sold in many local retail markets, there is often not a positive relationship between it and the prices charged. This criticism is not compelling, because other factors also affect local prices.⁷⁸ Moreover, the change in the HHI from a merger is still relevant.

IV. Anticompetitive Harms

Output prices may increase as a result of unilateral effects, coordinated effects, and exclusionary effects:

- Unilateral effects enhance market power by eliminating head-to-head competition between merging firms, even if the merger causes no changes in the way other firms behave.
- Coordinated effects enhance market power by increasing the risk of coordinated, accommodating, or interdependent behavior among some or all rivals in the market.
- Exclusionary effects involve the impact on consumers of disadvantaging rivals through input or customer foreclosure.

The focus of most modern cases is the potential for anticompetitive unilateral effects in output markets. Mergers can cause analogous market harms to input sellers, including workers.

⁷⁶ See Steven C. Salop and Fiona Scott Morton, *The 2010 HMGs Ten Years Later: Where Do We Go from Here?* 58 REV. IND. ORG. 81 (2021).

⁷⁷ George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 44–61 (1964).

⁷⁸ Nathan Miller et. al, *On the Misuse of Regressions of Price on the HHI in Merger Review*, 10 J. ANTITRUST ENFORCEMENT 248 (2022).

A. Unilateral Effects

Analysis of unilateral effects focuses on the head-to-head competition between the merging firms. Although mergers typically have market-wide (multilateral) effects, they are not required for a merger transaction to have harmful unilateral effects.

It is straightforward to explain this analysis in the context of a merger between two producers of differentiated products who compete head to head.⁷⁹ Even if there are numerous competitors, the products of the merging firms may be sufficiently close substitutes that they compete significantly with each other; other products are more distant substitutes and compete less strongly.

A merger between the two firms may diminish competition by enabling the merged firm to unilaterally raise the price of one or both products above the pre-merger level. (The term *unilateral* refers to the initial assumption made in the analysis that the non-merging firms do not raise their prices.) This assumption is very conservative. Although the non-merging firms do not have an automatic incentive to raise their prices in response to the transaction itself, they generally do have incentives to raise their prices in response to the price increases made by the merged firm. These responsive price rises cause multilateral effects that lead to broader consumer harm than the initial unilateral effects.

The merger creates unilateral incentives to raise prices because some of the sales lost by one merging firm as a result of the price rise will be diverted to the substitute product sold by its merger partner. As a result of this diversion to the partner firm, the merger partner will recapture some (if not all) of the variable profits lost by other merging firm on the diverted sales. These lost variable profits deter price increases before the merger. Once the merger takes place, recapture by the merger partners makes unilateral price increases profitable for one or both of the firms. The multilateral effects then involve responsive price increases by non-merging firms, which lead to further price increases by the merged firm.

1. Profitability from recapture of lost diverted sales

Figure 12.4 illustrates this basic unilateral effects analysis in its most pristine form. Before the merger, the profit-maximizing pre-merger price of Firm 1 is assumed to be \$200, based on a marginal cost \$90, the price that leads to the highest variable profit on the parabolic profit curve.⁸⁰ If Firm 1 were to raise its price by a small amount (e.g., by 5 percent) after the merger, its profits would barely fall, because the top of the profit “mountain” is relatively flat. If it were to raise its price by 5 percent, some sales would shift to Firm 2, causing Firm 2’s profits to rise. For a small increase in Firm 1’s price above its profit-maximizing level, Firm 2’s profits rise by more than Firm

⁷⁹ Robert Willig, *Merger Analysis, Industrial Organization Theory, and Merger Guidelines*, BROOKINGS PAPERS ON ECONOMICS ACTIVITY, 281(1991); Carl Shapiro, *Mergers with Differentiated Products*, *Antitrust* (Spring 1996); Daniel O’Brien and Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, 67 ANTITRUST L. J. 559 (2000).

⁸⁰ Firm 1’s variable profit would be zero if it set its price equal to its marginal cost of $c = \$110$, as shown in the figure.

1's profits fall. This increase in the total profits of the merged firm occurs even if Firm 2's price is not increased and even if non-merging firms do not follow the price increase.

Figure 12.4 Profit gains and losses following a merger

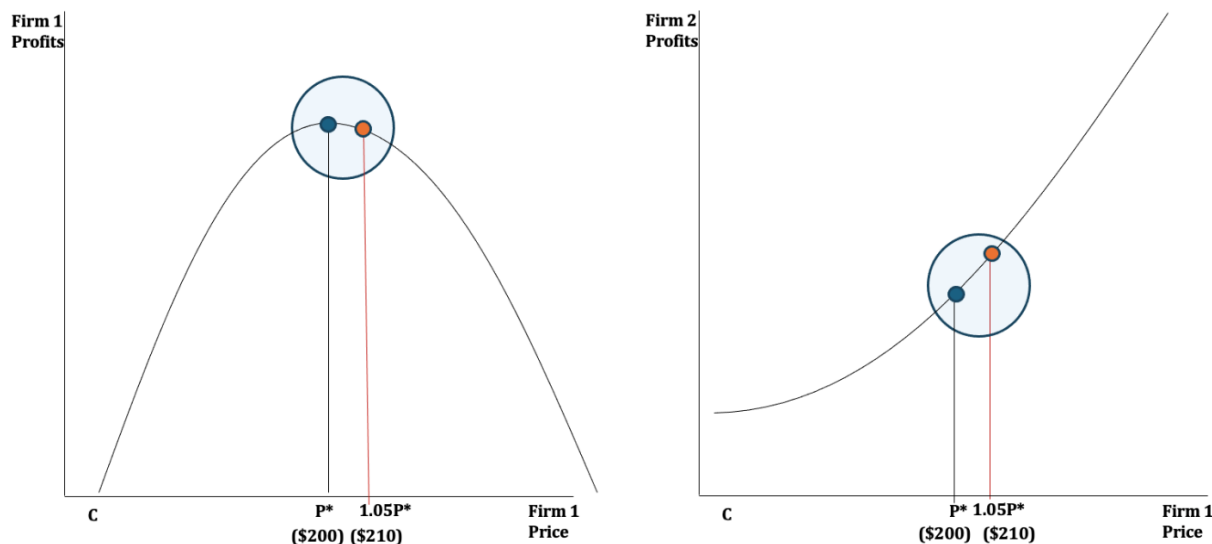
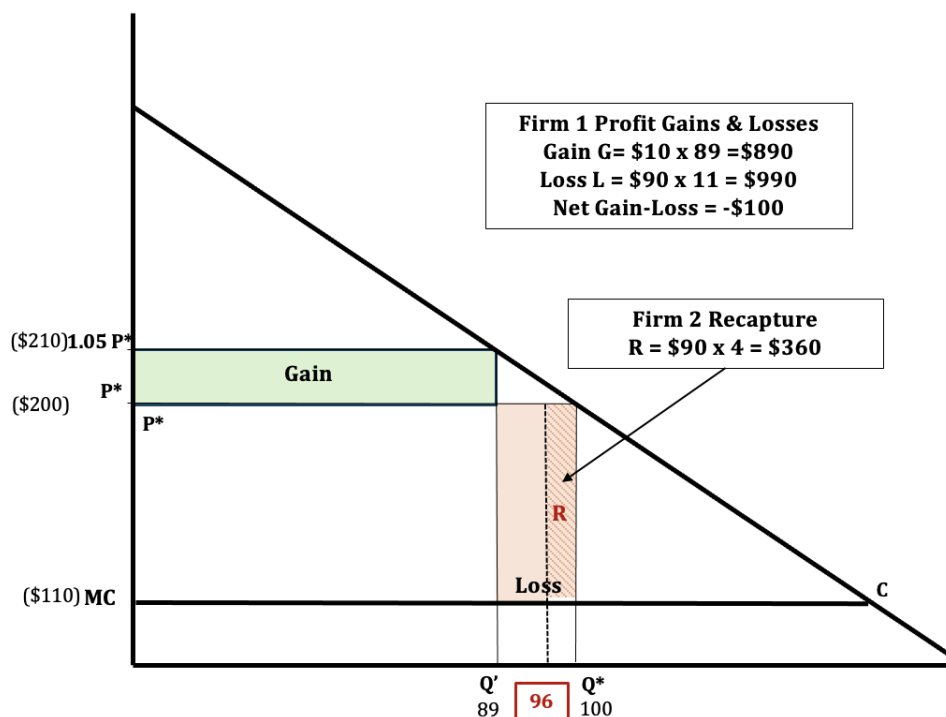


Figure 12.5 extends the analysis by showing the demand curve and the quantity sold. Suppose that at Firm 1's profit-maximizing price of \$200, it sells 100 units. If it raises its price by 5 percent (to \$210), assume that its sales fall to 89 units. If Firm 1 has a constant marginal cost of \$110, this price increase would be barely unprofitable; its profits would fall by a mere \$100 (1.1 percent).⁸¹ Suppose that 4 of the 10 units lost by Firm 1 are diverted to its merger partner, Firm 2, and that Firm 2 also has a price of \$200 and marginal cost of \$110. It would recapture profits of \$360 ($\90×4), increasing the total profits of the merged firm by \$260 ($\$360 - \100). Firm 1's unilateral price increase would be profitable for the merged firm if the diversion of sales to Firm 2 is only 1.2 units ($\$90 \times 1.2 = \108).

⁸¹ At a price of \$200 and marginal cost of \$90, Firm 1 earns a per unit margin of \$90 ($\$200 - \110) on 100 units, leading to total profits of \$9,000 ($\90×100 units). If it raises its price to \$210, its margin rises to \$100, but it sells only 89 units, leading to total profits of \$8,900 ($\100×89), a decrease of only \$100 (1.1 percent [$\$100/\$9,000$]).

Figure 12.5 Impact of diversion and recapture on incremental profits

The increase in the price of Firm 1's product will create an incentive to further increase the price of Firm 2's product. These price increases by the merged firm also create incentives for non-merging firms that sell substitute products to raise their prices, in an accommodative response. The price increases by each firm lead to further reactive price increases by the merged firm as well as the other firms. This process reaches a new market equilibrium with higher prices across the board. The initial unilateral effects thus cause multilateral effects.

The assumptions behind and analysis of these accommodative responses come with a caveat. In some situations, one or more rivals may take the opportunity to substantially expand, by increasing promotion or creating a new product that more closely resembles the products sold by one or both of the merging firms, for example. Such product extension or repositioning could act like new entry, deterring or mitigating the initial unilateral price increases.

2. The Gross Upward Pricing Pressure Index (GUPPI)

The GUPPI is used as an initial screen for gauging the magnitude of the incentives for unilateral price increases. It gauges the variable profits gained by the merger partner, termed the *value of diverted sales* (VDS), when one of the merging firms raises price while all other firms (including the merger partner) maintain their initial prices. The VDS is equal to the price–marginal cost margin (M) earned by the merger partner times the number of units it recaptures (R). The number of units recaptured can be expressed as the number of units diverted away from the merging firm that raises price times the fraction of these diverted sales that are recaptured (the diversion ratio [DR]).

The DR is a key factor in analyzing mergers involving differentiated products. It measures the closeness of substitution between the two products. DR_{12} is the fraction of Product 1's lost sales that are recaptured by Product 2 when the price of Product 1 is increased; DR_{21} is the fraction of Product 2's lost sales that are recaptured by Product 1, when the price of Product 2 is increased.

The DR is related to the own- and cross-elasticities of demand. The DR from Product 1 to a substitute Product 2 from an increased in the price of Product 1 is equal to the absolute value of the ratio of the cross-elasticity of demand for Product 2 with respect to an increase in the Product 1 price to the own-elasticity of Product 1 multiplied by the sales ratio Q_2/Q_1 .⁸² The formula for the "simple" (single firm with a single product) GUPPI for merging Firm 1 can be written as follows:

$$GUPPI_1 = DR_{12} \times M_2 \times P_2/P_1.$$

The GUPPI for Firm 2 is analogous:

$$GUPPI_2 = DR_{21} \times M_1 \times P_1/P_2$$

Economists estimate the values of these factors to calculate the GUPPIs. Suppose that DR_{12} is 40 percent, (i.e., Firm 2 gains 4 of the 10 units that Firm 1 loses); Firm 2's margin (M_2) is 45 percent (\$90/\$200); and the ratio of the two products' prices (P_2/P_1) is 1. Inserting the assumed values in the $GUPPI_1$ formula yields

$$GUPPI_1 = 40 \text{ percent} \times 45 \text{ percent} \times 1 = 18 \text{ percent.}$$

If Firm 2 had gained only 1.2 units (12 percent), its simple GUPPI would be much lower:

$$GUPPI_1 = 12 \text{ percent} \times 45 \text{ percent} \times 1 = 5.4 \text{ percent.}$$

These GUPPI scores can be used as an initial screen for gauging unilateral effects concerns in the same way that HHIs are used. They are a better screen for unilateral effects concerns, because they focus on the relevant economic incentives, as the 2010 Horizontal Merger Guidelines note.⁸³ For this reason, GUPPI scores can also be used to define structural presumptions analogous to the HHI thresholds, although neither the 2023 nor the 2010 Merger Guidelines did so.

A common view is that GUPPIs of 5 percent or higher raise significant concerns. One could conclude that GUPPIs above 10 percent raise very substantial concerns, because GUPPIs of 10 percent or more for both merging products imply that their profit-maximizing price increases are significantly likely to exceed 5 percent. In this case, the two products by themselves would conservatively comprise a two-firm relevant market satisfying the HMT if the assumed SSNIPT is 5 percent.⁸⁴

⁸² The DR is of the volume of sales. The formula for the "revenue" diversion ratio is somewhat different.

⁸³ U.S. Department of Justice and FTC, *Horizontal Merger Guidelines* (2010).

⁸⁴ The magnitude of the unilateral price increase for one of the merging firms depends on the shape of its demand curve. If its demand curve is linear, the profit-maximizing unilateral price increase equals half the GUPPI. If both GUPPIs are 10 percent, the first-round price increase is 5 percent, satisfying the HMT.

Economists sometimes apply other related empirical methodologies. Single-firm GUPPIs treat the prices of each merging firm one at a time, assuming that neither the other merging firm nor rivals raise their prices. As a supplement to these single-firm GUPPIs, economists have derived simultaneous GUPPIs, which account for simultaneous price increases by both merging firms. These GUPPIs are larger than the single-firm GUPPIs, because the individual price increases reinforce one another.

Economists have also developed uniform GUPPIs, based on an assumption of simultaneous uniform price increases. When two merging firms have the same prices, costs, and DRs, the formula for this uniform GUPPI is as follows:

$$GUPPI_u = GUPPI / (1 - DR).$$

If the DR were 40 percent, then both the simple GUPPI and the uniform GUPPI would exceed 20 percent (12 percent/0.60).

The uniform GUPPI for a set of merging products is also the foundation for the recapture percentage version of critical loss analysis for implementing the HMT, as discussed in the market definition section.⁸⁵

These GUPPIs are based on the assumption that the products are differentiated and firms compete on price. Economists have also derived GUPPI formulae for mergers involving homogeneous products (such as steel bars). In these markets, firms are assumed to compete by choosing output (i.e., capacity or production), and there is a single market price for all (identical) products.⁸⁶ (This type of competition is termed Cournot competition, and the GUPPI is called the Cournot GUPPI.) The Cournot GUPPI is based on the fact that reduction of output by one firm will put upward pricing pressure on the market price unless rivals increase their output. GUPPIs hold price constant. When products are homogeneous, the DR is equal to 1.⁸⁷ The GUPPI of Firm 1 is $GUPPI_1 = M$. If M is the

⁸⁵ In the case of a two-firm market consisting solely of the merging firms, $GUPPI_u = (DR \times PCM)/(1 - DR)$, which can be manipulated into $DR = GUPPI_u/(GUPPI_u + PCM)$. For a linear demand curve, the profit-maximizing SSNIP is equal to half the GUPPI. Letting $GUPPI_u = 2SSNIP$ implies $DR = 2SSNIP/(2SSNIP \times PCM)$.

⁸⁶ Economists refer to differentiated products price competition as *Bertrand* competition and homogeneous product quantity competition as *Cournot* competition, after the 19th century French economists who developed the original models.

⁸⁷ Serge Moresi, *The Use of Upward Price Pressure Indices in Merger Analysis*, 2010 ANTITRUST SOURCE 1 (February 2010). The GUPPI for markets involving (Bertrand) differentiated products price competition, the DR concept is a *quantity diversion ratio*, because when Firm 1 unilaterally raises price and reduces output, it internalizes that Firm-2 benefits by selling a higher quantity at the same price. The larger the quantity gained by Firm 2 relative to the quantity lost by Firm 1 (i.e., the larger the DR from Firm 1 to Firm 2), the stronger Firm 1's incentive to raise price post-merger (*ceteris paribus*). By contrast, the GUPPI for markets involving (Cournot) quantity competition use the concept of the price diversion ratio, because when Firm 1 unilaterally reduces output and raises price, Firm 2 benefits by obtaining a higher price for the same quantity. With homogeneous products, the price DR is equal to 1. The price increase obtained by a profit-maximizing Firm 2 when Firm 1 reduces output by one unit is equal to the price increase obtained by Firm 2 when it reduces its own output by one unit. Serge Moresi, *Cournot Competition and the UPP Test*. (Working Paper, 2009), https://www.ftc.gov/sites/default/files/documents/public_comments/horizontal-merger-guidelines-review-project-545095-00036/545095-00036.pdf.

price–cost margin of every firm. The market price would remain the same if Firm 2 increased its output by the same amount as Firm 1 reduced its output. Unlike the case of the single-product GUPPIs for differentiated product price competition, which are lower than the associated simultaneous GUPPI, the two individual GUPPIs for homogeneous product quantity competition are larger than the associated simultaneous GUPPI.

The GUPPI is mathematically related to the sum of the combined share of the merging firm plus the increase in the HHI when DRs are proportional to market shares, although this strict proportionality is not a general property.⁸⁸ Economists have also shown that the increase in the HHI is a relevant indicator of the magnitude of unilateral effects when the products are homogeneous. Nocke and Whinston show that consumer harm from unilateral effects often outweighs modest assumed synergy levels even when the change in the HHI is less than 200 points and the HHI level less than 2,000.⁸⁹ Although not related to the GUPPI, the HHI can be linked to the change in welfare from a reduction in market output when products are homogeneous.⁹⁰

Basing the structural presumption for unilateral effect concerns on GUPPIs rather than HHIs has more appeal. GUPPIs are direct measures of upward pricing pressure. The 2010 Merger Guidelines stated that agencies relied much more on DRs and GUPPIs than HHIs for diagnosing unilateral effects concerns in a differentiated product market. They also stated that “small” GUPPIs are unlikely to lead to “significant” price effects.⁹¹

3. Role in market definition

Because analysis of unilateral effects focuses on the head-to-head competition between the merging firms, there is no real need to define the market; it is enough to evaluate the DRs between the two merging firms, along with their prices and margins. Similarly, the multilateral effects by the non-merging firms can be gauged by looking at the DRs, margins, and prices.

In contrast, in litigating (as opposed to analyzing) unilateral cases, there can be a role for market definition, as sufficiently high uniform GUPPIs for the two merging firms would imply that the

⁸⁸ When the DRs are proportional to market shares (S), the DR from Firm 1 to Firm 2 is $DR_1 = S_2/(1 - S_1)$, which can be approximated as $S_2(1 + S_1) = S_2 + S_1S_2$, when S_1 is small. Applying this same method to the diversion from Firm 2 to Firm 1, $DR_2 = S_1 + S_1S_2$. Summing the DRs yields the sum $S_1 + S_2 + 2S_1S_2$. This derivation assumes that no sales are lost to products outside the relevant market. See Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L. J. 49 (2010).

⁸⁹ Volker Nocke and Michael D. Whinston, *Concentration Thresholds for Horizontal Mergers*, 112 AMER. ECON. REV. 1915 (2022).

⁹⁰ Keith Cowling and Michael Waterson, *Price-Cost Margins and Market Structure*, 43 ECONOMICA 267 (1976); Robert E. Dansby and Robert D. Willig, *Industry Performance Gradient Indexes*, 69 AMER. ECON. REV. 249 (1979).

⁹¹ 2010 Merger Guidelines at 21. The Guidelines refer to “proportional value of diverted sales,” another term for the GUPPI. An article by then Deputy Attorney General for Economics Carl Shapiro used a 5 percent GUPPI as the threshold—a very rough proxy based on the common usage of 5 percent. As a technical matter, a uniform GUPPI of 5 percent would correspond to a 2.5 percent price increase by the merging firms if demand were linear, rivals did not change their prices, and no efficiency benefits were gained. Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L. J. 49 (2010).

products of the merging firms by themselves define a separate relevant market under the HMT (i.e., the transaction can be seen as a merger to monopoly).

To grasp this point, consider the HMT based on a hypothetical monopolist raising the price of merging Firm 1's product by an SSNIP of 5 percent while holding the price of merging Firm 2's product constant. Assuming a straight-line (linear) demand curve, this 5 percent single-product SSNIP would be profitable if Firm 1's simple GUPPI were at least 10. Similarly, if the HMT is based on a simultaneous uniform SSNIP of both firms of 5 percent, that SSNIP would be profitable if the uniform GUPPI exceeds 10 percent.

4. Further economic analysis

i. Compensating marginal cost reductions

Economic analysis of potential unilateral effects may not stop with simple GUPPI analysis of upward pricing pressure. A uniform GUPPI gauges upward pricing pressure. It can be combined with estimates of the downward pricing pressure from efficiencies (e.g., from marginal cost reductions or quality increases, which can be expressed as reductions in quality-adjusted costs) to determine the net upward pricing pressure from the merger.

Suppose, for example, that the uniform GUPPI is equal to 6 percent. If the marginal cost reductions are more than 6 percent, the merger would lead to downward pricing pressure on balance. In this sense, the uniform GUPPI measures the critical compensating marginal cost reduction (CMCR) needed to prevent net upward pricing pressure.

The CMCR methodology can be used in two ways. First, the actual marginal cost reductions (including quality improvements) estimated for the merger can be compared with the CMCR, to determine whether there is "likely" upward pricing pressure.

Second, merger policy might set a presumptive "efficiency credit" for every merger. If an efficiency credit of 5 percent were applied, unilateral concerns would be treated as insufficient for enforcement if the CMCR were less than 5 percent. This methodology was suggested as underlying the 2010 Merger Guidelines.⁹² The approach did not take hold, however. Instead, estimated marginal cost reductions are used.

ii. Equilibrium simulation models

GUPPIs and the associated CMCRs do not account for multilateral price increases by the non-merging firms. To account for these effects, economists have developed equilibrium simulation models.⁹³ These models can be based on econometrically estimated demand elasticities across

⁹² Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L. J. 49 (2010).

⁹³ See Gregory J. Werden and Luke M. Froeb, *Simulation as an Alternative to Structural Merger Policy in Differentiated Product Industries*, in Malcolm B. Coate and Andrew N. Kleit (eds), COMPETITION POLICY ENFORCEMENT: THE ECONOMICS OF THE ANTITRUST PROCESS (1996).

firms.⁹⁴ They can also incorporate the impact of assumed or estimated cost reductions from the merger.

The analysis also takes account of possible constraints caused by new entry and product extension/repositioning. Those possible constraints are treated separately, because they are not easily incorporated into the GUPPIs or equilibrium simulation models.

5. Economic evidence for gauging likely unilateral effects

Various types of economic evidence may be probative. Much of this evidence overlaps with the market definition evidence. Overlap is not surprising, in that both focus on demand substitution and pricing interaction. The checklist in the annex provides a summary of evidentiary factors.

6. Case law example: Staples (1997)

The first successful unilateral effects merger litigation was *FTC v. Staples* (1997).⁹⁵ This innovative case was notable for its time in that the FTC's economists, headed by Bureau of Economics Director Jonathan Baker, took a lead role.

Staples had proposed acquiring Office Depot, one of the two other office superstores (the other was Office Max). The FTC showed that the three superstores were close substitutes, such that Staples and Office Depot were head-to-head competitors. The three firms had similar (and unique) store layouts and targeted the same type of customers. They monitored each other and defined price zones based on the prices the others charged.

GUPPIs had not yet been used in merger policy analysis. Instead, the FTC presented natural experiment evidence from actual pricing data, including evidence that prices were lower when there was competition among superstores but not when there was more non-superstore competition (e.g., from Walmart).⁹⁶ It also provided evidence that Staples reduced its prices in response to entry by a rival superstore and, in some cases, when it anticipated such entry. Staples argued that its prices would not rise above pre-merger levels. The court rejected this claim, accepting the validity of the FTC's allegation that prices would not decrease by as much as they would absent the merger.

7. Unilateral effects analysis of partial ownership acquisitions

Section 7 applies to acquisition of a partial (including a minority) interest in a competing firm, not just full mergers. Unilateral effects analysis can be applied, because even partial ownership interests can affect the competitive incentives of the firms.

⁹⁴ Two economists in the Antitrust Division of the Department of Justice published a reference manual for running these models. See Charles Taragin and Michael Sandfort, *Antitrust Reference Manual* (September 12, 2025), <https://cran.r-project.org/web/packages/antitrust/vignettes/Reference.html>.

⁹⁵ *Federal Trade Commission v. Staples, Inc.*, 970 F. Supp. 1066 (D.D.C. 1997).

⁹⁶ Jonathan B. Baker, *Econometric Analysis in FTC v. Staples*, 18 J. PUB. POL'Y & MKTG. 11 (1999).

Economists have formulated modified HHIs (mHHIs) and modified GUPPIs (mGUPPIs) to gauge these effects. For most ownership structures, the mHHIs and mGUPPIs are smaller than for a full merger. Where a partial owner is able to control the acquired firm, the mHHIs and mGUPPIs exceed the full merger indices.

Economic analysis of a partial ownership interest examines two factors: financial interest and control/influence. The financial interest factor refers to the effect of the ownership interest on the price and output incentives and decisions of the acquiring firm. The control/influence factor refers to the effect on the price and output decisions of the acquired firm resulting from the control or influence of the acquired firm over those decisions.⁹⁷

The simplest scenario involves a firm acquiring a non-voting, totally passive financial interest in a competitor. In this scenario, the acquiring firm has no control or influence over the decisions of the acquired firm; it should continue to act in a fully independent way and maximize its standalone profits. By contrast, the acquiring firm would have the incentive to take account of its ownership interest. In setting its price, it should take account of the fact that some of its sales lost from a price increase (reflected in the DR) would divert to the acquired firm and that it would recapture a fraction of variable profit margins from its financial interest share. These higher profits would be obtained as dividends or the larger market capitalization of the acquired firm. This description also explains the structure of the modified GUPPI. If Firm 1 acquires a financial interest equal to a fraction, B , of the total stock, the result would be given by the following equation:

$$mGUPPI_1 = B \times GUPPI_1 = B \times DR_{12} \times M_2 \times P_2 / P_1.$$

If the acquiring firm (Firm 1) obtains some control or influence over the acquired firm (Firm 2), it would have an incentive to lead Firm 2 to take Firm 1's profits into account when the acquired firm makes its price or output decision.

Consider the scenario in which the acquiring firm (Firm 1) obtains total control over the acquired firm (Firm 2) because it obtains a majority voting share on control over the board of directors despite having a minority financial interest share. In this scenario, Firm 1 would instruct Firm 2 to choose the price or output that maximizes its profits—that is, the sum of the profits of Firm 1 plus a fraction (B) of the profits of Firm 2. Firm 2's resulting mGUPPI₂ is given by the following equation:

$$mGUPPI_2 = (1/B) \times GUPPI_2.$$

As partial ownership means that $B < 1$, the UPP in this mGUPPI₂ exceeds that of a full merger (in which $B = 1$). The anticompetitive concerns regarding the prices of the acquired firm are thus greater from a partial ownership acquisition than from a full merger. Indeed, when the financial interest share B approaches 0, the multiple approaches infinity ($1/0 = \infty$). This result is not difficult to explain. If a firm controls a competing firm in which it has no financial interest, it has the

⁹⁷ For detailed analysis, including the mHHIs and mGUPPIs, see Daniel O'Brien and Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*. 67 ANTITRUST L. J. 559 (2000).

incentive to shut down that competitor. More generally, a smaller financial interest share will lead to worse conduct by Firm 2, because the acquiring firm has less interest in protecting the profits of the acquired firm.

Total control has the same impact on the pricing incentives of the acquiring firm as does passive ownership. These incentives are weaker than in the case of a full merger ($B \times GUPPI_1 < GUPPI_1$). But the effects on the incentives of both firms taken together can lead to a larger combined effect. If the standalone GUPPIs are identical ($GUPPI_1 = mGUPPI_2 = GUPPI$), the sum of the effects will be

$$GUPPI_1 + mGUPPI_2 = (B + 1/B) \times GUPPI.$$

The multiplier $B + 1/B$ is equal to 2 when $B = 1$; it is larger for any other value of B . Thus, total control is worse than a full merger. Moreover, a smaller ownership interest implies a larger GUPPI. Indeed, as B approaches zero, the multiplier $(B + 1/B)$ becomes infinite.

This result can be explained intuitively. If Firm 1 has only a *de minimis* ownership interest in a competing Firm 2 but nonetheless controls the price charged by Firm 2, it would have the incentive to increase Firm 2's price to the point that Firm 2 shuts down and some of its customers divert to Firm 1, because if Firm 1's ownership interest in Firm 2 is *de minimis*, it does not suffer any of Firm 2's losses.

The impact on the mHHI from total control has a similar form:

$$mHHI = (B + 1/B) \times HHI.$$

When the acquiring firm lacks total control over the acquired firm and is able only to influence it, the competitive impact is worse than in the case of passive financial interest and can raise significant competitive concerns. The results are generally less anticompetitive than in the case of a full merger, however.

Several challenges have been made to the acquisition of minority interests that do not give the acquiring firm total control. For example, the Department of Justice challenged the purchase by the Dairy Farmers of America of a 50 percent voting interest in two competing dairies. The district court dismissed the case on summary judgment, a decision that was reversed on appeal.⁹⁸

8. Common ownership

This type of analysis of partial ownership interests can also be applied to common ownership interests by multiple firms. One type of situation involves the potential joint purchase of a firm by a group of competitors that also independently sell from their own facilities in competition with one another as well as with the firm that is proposed to be jointly purchased.

In 1993, before the entry of DirecTV and Dish Satellite TV, the Department of Justice successfully challenged the proposed purchase of the Primestar satellite TV company by a large set of cable TV

⁹⁸ *United States v. Dairy Farmers of America*, 426 F.3d 850 (6th Cir. 2005).

operators.⁹⁹ Although these cable TV firms did not compete with each other (each had exclusive territories granted by local municipalities), all of them competed with Primestar.

There have also been challenges to the purchase of total ownership or minority shares by financial entities that already own interests in competing firms. In recent years, the common ownership analysis has focused on the broader potential competitive concerns raised by minority ownership interests in multiple competing firms by financial funds such as Vanguard, Fidelity, and Blackstone.

To see why such cases are of concern, suppose that a financial fund owns minority interests in two competing airlines. The fund would prefer that the airlines dampen their competition and would encourage the management of each airline to do so. Other funds with similar minority interests would do the same. Because the funds could collectively own significant ownership shares, they might have significant influence over the competitive decisions of the firms they own.¹⁰⁰

The financial funds could also have countervailing incentives to increase competition if they also owned shares in other firms that provided inputs to these firms, purchased products from them, or sold complementary products. In that situation, the funds' incentives would be more mixed and might even tip to preferring lower prices.

B. Coordinated Effects

Mergers can lead to coordinated effects that enhance market power by increasing the risk of coordinated, accommodating, or interdependent behavior among some or all rivals in the market. This coordination can involve a group of competing oligopoly firms beginning to coordinate or increase prices by improving the degree of tacit coordination or reducing the likelihood that coordination breaks down. The goal of merger analysis is to predict future incentives and the ability of a group of firms (i.e., the group of firms that comprise the relevant market participants) to coordinate.

The same concerns discussed in the analysis of oligopoly interaction in Part II of this monograph are relevant here. These coordinated effects involve greater recognition of interdependence. Specific concerns could involve cartelizing, reaching and enforcing a common understanding, or facilitating more successful conscious parallelism. Concern about explicit cartelization is rare; facilitating conscious parallelism is sufficient to establish a violation. Conscious parallelism by itself does not violate Section 1, but a merger that facilitates it can violate Section 7. Given the connection

⁹⁹ See *United States v. Primestar Partners, L.P.*, No. 93 Civ. 3913 (JES) (S.D.N.Y. filed June 9, 1993) (complaint); *United States v. Primestar Partners, L.P.*, No. 93 Civ. 3913 (JES) (S.D.N.Y. Apr. 4, 1994) (final judgment).

¹⁰⁰ For a sample of the recent literature, see José Azar et al., *Anticompetitive Effects of Common Ownership*, 73 J. Fin. 1513 (2018); Einer Elhauge, *Horizontal Shareholding*, 129 Harv. L. Rev. 1267 (2016); Jonathan Baker, *Overlapping Financial Investor Ownership, Market Power, and Antitrust Enforcement: My Qualified Agreement with Professor Elhauge*, 129 HARVARD L. R. FORUM (2016); Florian Ederer and Bruno Pelligrino, *Common ownership in the U.S. economy*, Washington Center for Ethical Growth (May 2022), <https://equitablegrowth.org/common-ownership-in-the-u-s-economy/>; Mathew Backus et al. *The Common Ownership Hypothesis: Theory and Evidence*, Brookings Institution (2019), <https://www.brookings.edu/articles/the-common-ownership-hypothesis-theory-and-explanation/>.

between coordinated effects concerns and the analysis of oligopoly interdependence, the relevant evidence is similar.

1. Market definition

The HMT for market definition originally arose because of concerns about coordinated conduct. The smallest market that satisfies the HMT and includes both merging firms defines the minimal collusive group (MCG) of firms whose increased pricing coordination would not be constrained by substitution to outside firms. If the firms in the MCG can maintain internal stability, they will be able to successfully maintain or increase their degree of coordination.

When the pre-merger market already involves some tacit coordination, the HMT can fall victim to the cellophane fallacy, as discussed earlier. Suppose that the MCG has already coordinated and achieved the monopoly price. In this case, application of the HMT would find that the SSNIP is unprofitable, reject that candidate market definition, and broaden the relevant market, possibly permitting the merger to proceed. Doing so would reduce the likelihood that the tacit coordination breaks down.

The Merger Guidelines recognize this problem. They suggest that to prevent courts and agencies from falling victim to the fallacy by stating that if suppliers are coordinating before the merger, the agency will base the SSNIP on a lower price. This situation provides another example of why market definition cannot simply be treated as a step to be taken before any analysis of competitive effects. The agency or court cannot know whether there is pre-merger coordination if it analyzes market definition as a threshold step without reference to conduct.

The Merger Guidelines usefully divide the economic analysis of coordinated effects concerns into two prongs:¹⁰¹ evidence regarding the vulnerability of the market to coordinated effects and evidence regarding the impact of the merger on market vulnerability. Both are necessary to establish a Section 7 violation.

2. Market vulnerability to coordination

The following factors suggest greater vulnerability of the market to coordination:

- a high level of concentration (HHI)
- a history of price leadership, coordination, or attempted collusion
- price and output transparency (including information exchanges)
- the presence of small buyers with frequent small sales
- demand predictability
- seller symmetry
- inelastic demand
- a mechanism for side payments (e.g., product exchanges)
- barriers to entry

¹⁰¹ U.S. Department of Justice and FTC, MERGER GUIDELINES (2010); U.S. Department of Justice and FTC, MERGER GUIDELINES (2023).

- lack of importance of innovation.

These factors are essentially the same ones included in the checklist of structural factors in the earlier discussion of cartelization in Chapter 6.

3. Impact of the merger on the vulnerability to coordination

The fact that the market may be vulnerable to coordination is not enough to show that a merger will make post-merger coordination more likely. It is also necessary to show that a merger will increase that vulnerability. Among the factors suggesting an increase in vulnerability and the likelihood of coordination, the most important are the reduction in the number of competitors and the possibility that one of the merging firms has been a “maverick” competitor.

4. Reducing the number of competitors and increasing the HHI

A small number of players makes it easier to reach consensus and monitor competitive interaction. It also increases the incentive to follow price increases. It can support coordinated price increases, because the reduction in head-to-head increases unilateral pricing incentives. The increase in the HHI from the merger is the standard measure, because reducing the number of larger competitors is more significant than increasing the number of smaller competitors. The 2023 Merger Guidelines treat the level of the post-merger HHI as one of the primary factors in coordination effects analysis.

5. Eliminating a “disruptive” or “maverick” competitor

A maverick firm is one that has had a disruptive or constraining market role that benefits consumers. It is often a small competitor that has an outsized impact on competition by playing a disruptive role that prevents or constrains coordination or increases competition and innovation.¹⁰² Mavericks often introduce new product features that rivals are forced to match. They may also fail to follow price increases or other industry competitive norms. Observing an actual disruption of price increases is not necessary for a maverick to have an effect; just the fear of the maverick not following may deter potential price increases.

Mavericks are typically smaller firms, because a firm with a larger market share has a greater incentive to raise prices and a smaller incentive to cut them (because the lower price reduces its profits on all of its existing sales). By joining with another competitor and forming a larger entity, a merger can eliminate the maverick’s incentives because of its impact on its merger partner.¹⁰³

¹⁰² Jonathan B. Baker, *Mavericks, Mergers and Exclusion: Proving Coordinated Effects under the Antitrust Laws*, 77 N.Y. UNIV. L.R. 135 (2002). Methods of identifying a maverick are discussed in Jonathan B. Baker and Joseph Farrell, *Oligopoly Coordination, Economic Analysis, and the Prophylactic Role of Horizontal Merger Enforcement*, 168 U. PA. L. REV. 1985, 2011-12 (2020).

¹⁰³ A merger can also increase the incentives for maverick behavior. If, for example, a merger lowers costs, it can increase incentives to cheat. If the merged firm is vertically integrated into a downstream market, it can have greater ability to cheat by supplying its downstream entity.

The acquisition of a maverick is a very important focus of merger analysis. The 2023 Merger Guidelines treat it as one of the primary factors in coordination effects analysis.¹⁰⁴ They also note that increases in the HHI are important.

6. History of attempted collusion

A history of actual or attempted collusion in the industry is an excellent signal that a merger should raise concerns about coordinated effects. A merger can increase the likelihood of successful coordination short of per se illegal cartelization. For this reason, the 2023 Merger Guidelines treat this history as one of the primary factors in coordination effects analysis.

7. Increasing competitor symmetry

Competitors with similar market shares are more likely to have similar incentives. If cartel members have equal costs and symmetric market shares, they would likely engage in less conflict over the best price to charge. If a merger would increase market share symmetry, it should raise coordinated effects concerns.

8. Decreasing excess capacity

Merging firms may reduce their excess capacity. Doing so may even be part of their business plan as a cost-saving efficiency. Eliminating excess capacity can also facilitate coordination, however, by making price cuts less likely and making it easier to match rivals' price cuts.

9. Case law examples: Heinz, H&R Block, and TMobile/Sprint

The *Heinz/Beechnut*¹⁰⁵ merger litigation involved coordinated as well as unilateral effects concerns. The merging firms had a combined share of about 30 percent of the jarred baby food market. Gerber controlled 70 percent of the market, and entry barriers were high.

The parties argued that the merger would substantially reduce costs, because Heinz had a new low-cost factory with substantial excess capacity and Beechnut's factory was old and high cost. They also argued that using Beechnut's lower-salt recipes and its cradle-to-grave monitoring of ingredients would improve quality. Both Heinz and Beechnut tended to be regional. They argued that the proposed merger would incentivize the merged firm to substantially increase market share throughout the country.

Although the merger would have created a duopoly, Heinz's expert argued that there were substantial barriers to tacit collusion. One was the existence of secret negotiations with sophisticated supermarket chains. The expert argued that the dramatically asymmetric incentives

¹⁰⁴ For a technical analysis of the extent to which a merger facilitates coordination by increasing the maverick's stake in the coordinated outcome relative to its ability to expand inexpensively, see Joseph Farrell and Jonathan B. Baker, *Natural Oligopoly Responses, Repeated Games, and Coordinated Effects in Merger Analysis: A Perspective and Research Agenda*, 58 R. INDUS. ORG. 103, 111-122 (2021).

¹⁰⁵ *Federal Trade Commission v. H.J. Heinz Co.*, 246 F.3d 708 (D.C. Cir. 2001). I consulted with the merging parties on this transaction.

of Gerber and the merged firms would make it difficult to reach consensus. This claim amounted to arguing that the merged firm would become a maverick whereas the independent firms were weak price followers.¹⁰⁶ These arguments were unable to overcome the strong anticompetitive presumption resulting from the high concentration and entry barriers. The D.C. Circuit found the merger to violate Section 7.

The *H&R Block/TaxAct*¹⁰⁷ merger litigation focused on the role of mavericks. TaxAct offered more free services than competitors H&R Block and Intuit, including a free option for simple returns that led the movement toward free services. The Justice Department alleged that its incentives would change if it were acquired by H&R Block, which had resisted the “race to free.” The court said that it did not find the “maverick” term helpful, suggesting that TaxAct was not unique and that all three firms were sometimes “aggressive and innovative.” In the end, the Court found that “TaxAct’s competition played a special role. . . that constrains prices,” which would change post-merger, and ruled that the merged firm would have the incentive to migrate customers to higher-priced products. It also rejected H&R Block’s claims that its strategy would change in a more competitive way after the merger.

The *TMobile/Sprint*¹⁰⁸ merger also raised the maverick issue. TMobile had a reputation as a scrappy disruptive competitor to AT&T and Verizon, the two dominant firms in the market. It had a history of introducing popular new features that the larger firms were forced to match. Its acquisition of Sprint would not only reduce the number of competitors from four to three, it would double the combined firm’s market, making the shares of the three remaining competitors nearly identical.

In response, TMobile argued that its incentives would not change, that the merger of the two physical networks would lead to dramatically more capacity, which would lead to higher product quality and lower costs. It also convinced the court that being a scrappy competitor was part of its corporate DNA that the merger would not alter. Its argument amounted to a claim that it would become a “super-maverick.” The court permitted the mergers.

C. Exclusionary Effects

Horizontal mergers can also raise concerns about exclusionary effects. Increasing its market share may give a merged firm greater ability and incentive to engage in exclusionary conduct to raise the cost or otherwise reduce the competitive constraints posed by actual and potential rivals. In this regard, a merger can be treated as conduct that creates the power to facilitate a number of the types of exclusionary conduct analyzed in Chapter 11. Analysis of exclusionary effects concerns from a merger would thus generally follow the analysis laid out there—that is, determining whether the targeted rivals have cost-effective alternatives that would reduce or eliminate the disadvantages

¹⁰⁶ See Jonathan B. Baker, *Efficiencies and High Concentration: Heinz Proposes to Acquire Beech-Nut* (2001) in John E. Kwoka, Jr. and Lawrence J. White, eds., *THE ANTITRUST REVOLUTION* 157 (5th ed. 2008).

¹⁰⁷ *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36 (D.D.C. 2011).

¹⁰⁸ See *New York v. Deutsche Telekom AG*, 439 F. Supp. 3d 179, 244–46, 248–49 (S.D.N.Y. 2020).

and whether conditions in the downstream relevant market would prevent the merged firm from gaining or increasing its market power.

In his 1986 *Hospital Corporation of America* (HCA)¹⁰⁹ merger decision, Judge Posner explained that HCA and other top competitors provided information to state regulators in charge of “certificate of need” regulations that they hoped would lead them to deny rivals the ability to expand. Preventing entry and expansion would ensure that competition would not increase and avoid downward pricing pressure. (Although Judge Posner explained the economic logic of this exclusionary incentive, he also expressed some skepticism, because of the exclusionary conduct claims came from a competitor, which could have the incentive to complain about increased competition resulting from the merger.)

Not all exclusionary effects claims pass muster. For example, the *Brunswick v. Pueblo Bowl-O-Mat*¹¹⁰ merger case involved a claim by a rival bowling alley that entry by Brunswick would harm it by lowering prices. The Court rejected the rival’s standing to sue, holding that it did not suffer “antitrust injury”—that is, it was complaining about a merger effect that would benefit consumers, not one that would harm consumers.

Exclusionary effects were also relevant in *TMobile/Sprint*.¹¹¹ One contention there was that the merged firm would gain market power in the prepaid contract part of the business, which targeted lower-income consumers. In addition to divesting Sprint’s prepaid contract business and some spectrum to Dish, the consent decree with the Justice Department required the merged firm to provide access to Dish’s wireless company, and the Federal Communications Commission (FCC) set certain non-discriminatory pricing conditions to ensure reasonable wholesale prices while Dish was in the process of expanding its own network.

When AT&T proposed acquiring TMobile, in 2011, Sprint filed an antitrust case based on exclusionary conduct concerns.¹¹² It claimed that by growing even larger, AT&T would be able to block Sprint’s access to desirable new handsets. It supported this concern with the fact that AT&T had obtained exclusive access to the original iPhone rollout for a temporary period. It survived a motion to dismiss on this theory. That merger was ultimately abandoned in light of resistance by the Justice Department and the FCC.¹¹³

¹⁰⁹ *Hospital Corp. of America v. FTC*, 807 F.2d 1381 (7th Cir. 1986).

¹¹⁰ *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.* 429 U.S. 477 (1977).

¹¹¹ *State of New York et al. v. Deutsche Telekom AG et al*, No. 1:2019cv05434 - Document 409 (S.D.N.Y. 2020), *United States et al. v. Deutsche Telekom AG; T-Mobile US, Inc.; SoftBank Group Corp.; and Sprint Corp.*, Civil Action No. 1:19-cv-02232-TJK (D.D.C.). I consulted with Sprint on this matter.

¹¹² *Sprint Nextel Corp. v. AT&T Inc.*, No. 1:11-cv-01600 (ESH), Dkt. No. 1 ¶¶ 84–85 (D.D.C. filed Sept. 6, 2011). I consulted with Sprint on this matter.

¹¹³ *Id.*

1. Entry and expansion constraints

Suppose that a merger would increase concentration, increasing the risk of coordinated effects or eliminating significant head-to-head competition. Although those effects might create upward pricing pressure, pro-competitive responses of other suppliers might mitigate or eliminate it. In the case of a merger of the only two firms with similar differentiated products that engaged in significant head-to-head competition before the merger, other established firms might respond by “extending” their product line to include that variant or “repositioning” their existing brand (or one of their brands) to replicate or more closely resemble the merging brands. All of these types of entry and expansion might take time and involve sunk costs, however. Rapid entry is most likely in the case of product extension and repositioning.

2. Barriers to new entry

If new entry is easy, in the sense that there are no material barriers to entry, post-merger price increases can be deterred even if a merger significantly raises concentration or eliminates significant head-to-head competition. The discussion of barriers to entry in the exclusionary conduct and collusive conduct sections of this chapter set out the details of this analysis. Entry barriers may arise from potential entrants’ lower costs or quality, including the need to bear the cost and delays in establishing a reputation for quality and reliability. Even aside from these disadvantages, if the potential entrants have significant sunk costs and their technology implies a large minimum viable scale (MVS), anticipation of post-merger price competition can create an entry barrier, as discussed in Chapter 2 and explained with the aid of Figure 2.2.

The Merger Guidelines capture these issues by defining easy entry as entry that is timely, likely, and sufficient.

- *Timely*: The longer entry takes, the less likely it is to constrain price increases until the entry actually occurs, because established firms have more time to respond or even to preempt the entry by expanding capacity. To offset this timing disadvantage, entrants may attempt to maintain secrecy while they establish a customer base in advance of entry. In the best-case scenario, some lead customers might agree to buy a certain amount from a new entrant before it sinks significant costs. In this way, the entrant might reach MVS before the established firms have time to respond. The 1992 Merger Guidelines defined “timely” as two years or less; the 2010 and 2023 versions eliminated specific timeframes. Of course, even delayed entry may constrain price increases in some cases if entry would have an outsized effects on the incumbent’s profits relative to the profits from the price increase. One example might be a case in which the announcement of entry in several years leads consumers to extend the life of the products until the entry occurs rather than replacing them at the higher price.
- *Likely*: The larger the MVS, the less like is entry, because a high MVS makes it difficult for an entrant to generate enough sales to be viable. Entry is more likely to induce a large price reduction reaction by the incumbent firms, reducing the entrant’s profits. MVS is greater if the capital costs of entry are high, the entrants’ costs are higher than its established firms, and/or potential new entrants face demand disadvantages. The 1992 HMGs treated MVS of

less than 5 percent as low; the 2010 and 2023 Merger Guidelines removed the specific number.

- *Sufficient*: Entry must be sufficient to offset the output-reducing effects of the merger; it will not be sufficient to constrain price increase unless enough new output/capacity will likely enter. Entry by a single small entrant with only limited capacity may not sufficiently constrain post-merger price increases. In fact, an entrant may enter in this way as a “judo economics” strategy to avoid post-entry price competition, as discussed in Chapters 2 and 4. One simple but overly stringent bright line test might be that there must be sufficient entry to replace the market share of the smaller of the two merging firms. Entry may also be insufficient because only limited essential inputs are available. Evidence of sufficiency also usually requires identification of multiple potential entrants. Simply because a firm has the capacity to enter does not automatically mean that it will: A firm may not be interested in entering, because entry is not part of its core competency or basic investment strategy or because it fears that its entry would lead the merged firm to enter one of its lucrative markets. Possible entrants might also be unaware of the entry opportunity. The annex includes a checklist of possible evidence for proving or disproving ease of entry.

3. Product extension and repositioning

Post-merger price increases may also be deterred or undone by firms selling products in adjacent markets or competitors responding to the merger by increasing their competition. In the case of a merger of the only two firms with similar differentiated products that engaged in significant head-to-head competition before the merger, other established firms selling other brands might respond by an “extension” their product line to include that variant or by “repositioning” their existing brand (or one of their brands) to replicate or more closely resemble the merging brands. For example, a merger of the only two cereal brands that sell a sugary chocolate oat cereal that a significant number of consumers would be unwilling ever to give up might not raise competitive concerns because other producers of oat cereals might easily introduce new chocolate sugar versions of their basic product or replace their cinnamon version with a chocolate version.

4. Rapid entry

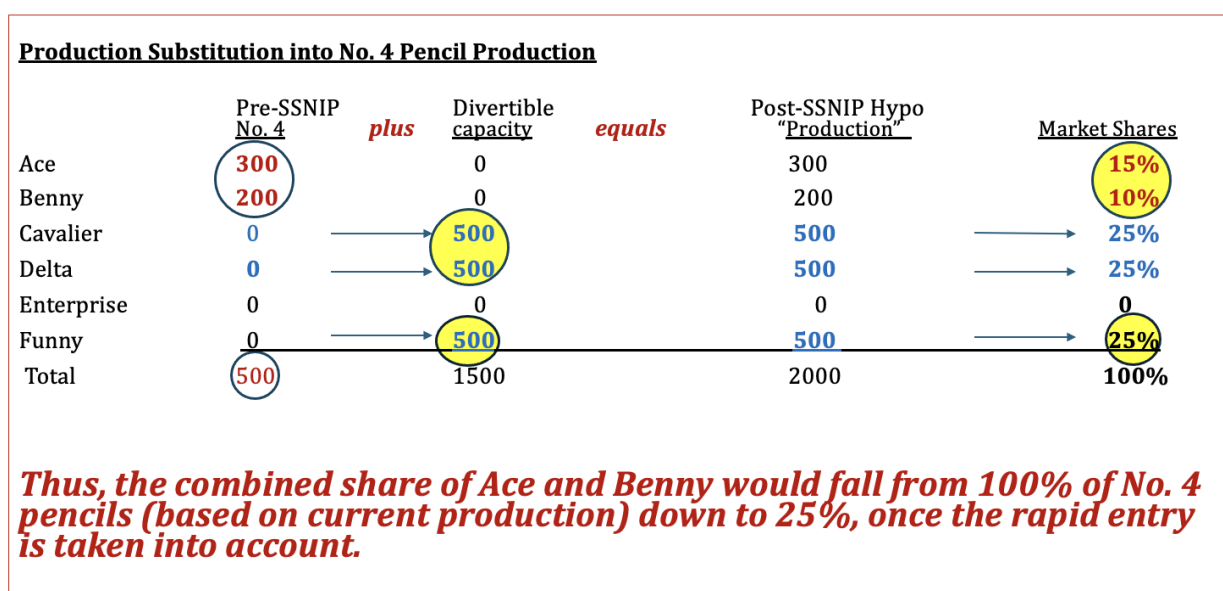
In some cases, the speed of entry may be very rapid entrants would not suffer cost disadvantages or have to spend significant sunk costs. In these cases, the fear of entry would provide the greatest constraint on pricing of the merged firm. The parties’ rebuttal argument in the *Waste Management*¹¹⁴ merger case amounted to a showing of the ease of such entry by a commercial trash collection service in Dallas providing a similar service in the adjacent city of Fort Worth. Entry could be accomplished by using the company’s trucks and renting garage space in the adjacent city. It could obtain customers in advance of entry, because the entrant would already have an established reputation in the adjacent city.

¹¹⁴ *United States v. Waste Mgmt., Inc.*, 743 F.2d 976 (2d Cir. 1984); *United States v. Waste Mgmt., Inc.*, 588 F. Supp. 498 (S.D.N.Y. 1983).

In the Merger Guidelines, an entrant that can enter quickly and with low sunk costs and cost disadvantages is treated as a participant in the relevant market and is assigned a market share equal to its likely post-entry volume. Product extensions and repositioning might be particularly likely to qualify as rapid entry mechanisms.

To see how the market share assignment might work, consider the hypothetical merger to monopoly between Ace and Benny in the No. 4 pencil market depicted in Figure 12.6. Suppose other firms produce No. 3 pencils but not No. 4 pencils. As the only difference in the pencils is the mix of graphite and clay, a firm producing one kind of pencil could easily produce a different type. Some producers of No. 3 pencils could rapidly shift some production into No. 4 pencil production, reducing the combined market share of Ace and Benny.

Figure 12.6 Analysis of rapid entry in a proposed merger



Probative evidence supporting a finding of rapid entry could include evidence that the prices of the two products moved together over time. It could also include the firms' history of switching back and forth between the products; lack of impediments or constraints on shifting production, such as limited capacity; long-term contractual obligations that tie up existing capacity; and the ability to shift production quickly.

5. Countervailing power of buyers

Buyers may be able to countervail adverse unilateral effects with their bargaining power. The constraining role of countervailing bargaining power on the potential anticompetitive effects of a merger may be weak, however, for two reasons.

First, a merger of substitute products increases the merged firm's relative bargaining leverage, because the buyer now faces the merged firm instead of the two independent competitors. Economists normally assume that whatever bargaining leverage the buyer could exert was already used to constrain pre-merger prices, so that a merger would reduce its leverage.

Second, although conduct by a powerful buyer may protect the buyer, it will not automatically also constrain the prices charged by the merged firm to other buyers, because the merged firm and its rivals may provide lower prices to the power buyer but not to others. Even worse, a powerful buyer may use its bargaining power to induce sellers to raise the costs of its rivals rather than reduce its own costs, as discussed in the exclusionary conduct section. In this case, the competitive harms could be magnified rather than reduced. Perhaps for all these reasons, the 2023 Merger Guidelines did not discuss buyer power as a rebuttal factor.

V. Procompetitive Benefits

Mergers can have procompetitive effects, in the form of lower costs from a higher scale or synergies. Synergies may also accelerate innovation. Merged firms may also have incentives to reduce the prices of any complementary products they sell, because a reduction in the price of one complement (e.g., hot dogs) will increase demand for the other (e.g., buns), as discussed in detail in Chapter 13. These forms of downward pricing pressure might outweigh any upward pricing pressure of a merger, making the merger procompetitive overall.¹¹⁵

The following factors create a high bar for efficiency claims embedded in merger law and policy. All of them make sense as a matter of economic analysis and decision theory.

A. Procompetitive Nature

To be treated as a cognizable efficiency benefit, a cost reduction or other alleged benefit of a merger must not be the result of anticompetitive conduct. For example, a firm cannot claim cost-savings efficiencies from reducing post-merger output, product variety, or advertising. Nor can it claim—as some business consulting firms advising on mergers actually have claim—that there will be “revenue synergies” from post-merger price increases that result from eliminating a competitor.

B. Overall Procompetitive Effect

It is not enough to show the existence of efficiency benefits. The benefits must also be large enough to outweigh any potential harms, so that consumers (or other counterparties) do not suffer anticompetitive effects. In the unilateral effects context, they must create downward pricing pressure that overcomes the upward pricing pressure. A merger violates Section 7 if it causes an increase in prices (or quality-adjusted prices if the efficiency increases product quality.)

C. Sliding Scale

*Baker Hughes*¹¹⁶ and *Heinz*¹¹⁷ make clear that a sliding scale is applied to rebuttal arguments, including efficiency claims. The 3-2 *Heinz* decision concerned a merger in the jarred baby food market that was found to have substantial entry barriers. In finding a violation, the D.C. Circuit

¹¹⁵ For an interesting recent analysis, see Nancy L. Rose and Jonathan Sallet, *The Dichotomous Treatment of Efficiencies in Horizontal Mergers: Too Much? Too Little? Getting It Right*, 168 UNIV. PA. L.R. 1941 (2020).

¹¹⁶ *United States v. Baker Hughes Inc.*, 908 F.2d 981, 990–91 (D.C. Cir. 1990).

¹¹⁷ *FTC v. H.J. Heinz Co.*, 246 F.3d 708 (D.C. Cir. 2001).

court noted that no court had ever approved such a merger in a litigated case. As a general matter, the stronger the anticompetitive structural presumption based on high market share and concentration, the higher will be the defendant's rebuttal burden of production.

D. Merger Specificity

Claimed efficiency benefits are not considered a cognizable rebuttal factor unless the merger, is reasonably necessary to achieve them (i.e., unilateral conduct or a less anticompetitive agreement would not). If, for example, the claimed benefit is acquiring a talented software designer, that benefit could be obtained without the merger by simply hiring the designer away. The claim that a merger would permit the acquiring firm to reduce its costs by gaining access to the warehouses of the acquired firm could be countered by showing that the firm could have rented additional warehouse space or built its own. If these unilateral efforts would delay achievement of the efficiency, the cognizable efficiency benefits would be limited solely to the period of delay. The non-merger alternative must increase competition. If the alternative of a joint venture would also involve joint pricing by the parties, it would not.

1. Verifiability

The claimed benefits must be verified—generally quantitatively—rather than simply shown to be plausible. Benefits are considered more credible if they can be supported by evidence of pre-merger estimates rather than estimated during the merger review or litigation.

2. Offsetting inefficiencies

As the focus is on the welfare or consumers or other counterparties, the calculation of cognizable efficiency benefits must net out cost increases or other inefficiencies from the merger.

3. Out-of-market efficiency benefits

Merger law since *Philadelphia National Bank* has counted only efficiency benefits that accrue to consumers in the relevant market; out-of-market benefits are not considered cognizable. This approach makes sense through a decision theory lens.¹¹⁸ Including these out-of-market effects could substantially increase the complexity of adjudicating the merger.

Out-of-market efficiencies are controversial, because measuring them involves interpersonal comparisons.¹¹⁹ Designing an aggregation methodology to deal with the interpersonal comparisons

¹¹⁸ For discussion of the counterargument, see Louis Kaplow, *Out of Market, Out of Mind* (January 9, 2026) (unpublished manuscript) (forthcoming in *Antitrust L.J.*), <https://ssrn.com/abstract=6077535>.

¹¹⁹ *Id.*

is complicated, because the out-of-market benefits may not be commensurable with the harms.¹²⁰ The choice of an aggregation methodology also raises distributional policy issues:¹²¹

- Should within-market harms be given more weight than out-of-market benefits?
- Should a merger be permitted if the beneficiaries are lower- and middle-class consumers whereas the victims are rich consumers but not vice versa?
- If some out-of-market harms are suffered by some consumers and out-of-market benefits gained by others, how should they be weighted?

Under some circumstances, it may be feasible to take account of out-of-market benefits in a practical way. Suppose, for example, that a supermarket merger is predicted to raise the prices of produce but reduce the cost and prices of nonperishables, so that the average cost of a typical market basket would fall. The benefits from the out-of-market efficiencies accrue to the same consumers who bear the harms, so no interpersonal comparisons are necessary. Where the benefits and harms can be compared and aggregated, policy might permit a merger with harm in the relevant market if the out-of-market benefits are much larger.

The *Anthem/Cigna*¹²² merger litigation raised a number of these issues. The parties provided evidence that the merged firm would have “increased muscle” in negotiating with hospitals and other medical providers, which they argued would be passed on to subscribers as lower insurance premiums. The court’s rejection of this claim reflected several concerns:

- It was not clear that the cost savings would be passed through to subscribers.
- Squeezing the providers in this way might reduce quality, by leading to less investment by providers and/or fewer providers.
- The alleged benefit appeared to flow from the achievement of monopsony rather than an increase in efficiency.

Then-Judge Kavanaugh’s dissent responded to the third point by suggesting that the impact of the increased negotiating power might have been procompetitive countervailing power in negotiating with sellers that have market power, rather than classical monopsony; he recommended a remand to resolve that issue.¹²³ Even if the effect had been countervailing power that benefited consumers rather than monopsony, however, the court would have had to decide whether the harms to providers who had legitimate market power should be ignored in favor of the downstream consumer benefits.

¹²⁰ Rebecca H. Allensworth, *The Commensurability Myth in Antitrust*, 69 VANDERBILT L. R. 1 (2016).

¹²¹ See, for example, Steven C Salop et. al, *Rebuilding Platform Antitrust: Moving on from Ohio v. American Express*, 84 ANTITRUST L.J. 883, 908-15(2022).

¹²² *United States v. Anthem, Inc.*, 236 F. Supp. 3d 171, 236–38 (D.D.C. 2017), aff’d, 855 F.3d 345 (D.C. Cir. 2017).

¹²³ *United States v. Anthem, Inc.*, 855 F.3d 345, 379–81 (D.C. Cir. 2017) (Kavanaugh, J., dissenting).

E. Innovation Effects

Innovation effects in horizontal mergers can arise in two ways: by affecting the incentives and ability of the merging firm to engage in innovation efforts and by involving firms that are innovation competitors.

1. Impact on innovation ability and incentives

A merger can increase a firm's ability to innovate by combining complementary assets that increase the quality or reduce the cost of innovation. Where these synergies occur, they can lead to faster or better innovations that lead to new and better products, lower costs, or both.

The impact of a merger on product market competitors' incentives to innovate is more complex. A merger implicates the factors analyzed in Chapter 4. On the one hand, a merged firm can spread a marginal cost reduction over more units of output than can the individual firms absent the merger. This larger total cost saving can increase innovation incentives. On the other hand, cost reductions can give a firm the incentive to reduce prices in order to increase its market share. This incentive is greater for a firm with a smaller market share. The now-larger merged firm suffers a greater direct reduction in profits when it reduces its price, and it may have less room to increase its market share. In the extreme case, in which the two firms are the only competitors, the merger would eliminate the incentive to innovate to gain market share.

A third factor applies to both ability and incentives. If the increased innovation incentive for the merged firm involves a desire to maintain monopoly power, an innovation that leads to a patent or a large first-mover effect may come at the expense of a substitute innovation by a smaller firm that would lead to increased output market competition as well as a new product. In this case, the merged firm's increased ability and incentive to innovate will not increase consumer welfare.

2. Merger of innovation competitors

Innovation competition is critical in some markets. A merger among innovation competitors can combine complementary assets that lead to synergies that in turn lead to faster and better innovation. But just as a merger can lead to a reduction in head-to-head competition in the product market, it can also lead to a reduction in head-to-head innovation competition. For example, a pharmaceutical merger might combine two firms, both of which are engaged in R&D on a medication for a certain type of cancer. In this situation, the merger might have adverse effects by eliminating the race to develop the first product or win the post-entry price competition if both succeed in obtaining new products. Overlaps in R&D of pharmaceutical companies can be identified because of the long Food and Drug Administration (FDA) pipeline. The FTC commonly requires divestitures of overlapping programs where the number of active competitors is low.

Mergers of innovation competitors can raise some interesting economic issues. Suppose that the merging firms are the only two competitors racing to obtain a patent on a new medication. The firms might argue that the merger would not harm consumers because in the end one of the firms will obtain the patent monopoly, leading to a monopoly whether or not the merger is permitted. The firms might also argue that the merger would be efficient, because it would speed the R&D needed to obtain the patent by combining resources and expertise.

The merger could also have anticompetitive effects, for several reasons:

- It would reduce the need for speed, possibly causing the innovation to be discovered later rather than sooner.
- If both firms already had a competing product and the race were for the next-generation replacement, it would reduce the incentive to quickly complete the innovation.
- The patent race would not inevitably lead to a monopoly. Both firms' R&D could lead to a new and better product, but neither firm might succeed in obtaining a patent. In that case, there would be competition absent the merger.

In defending their proposed merger, Flow International and Omax explained to the FTC that they were involved in patent litigation with one another. They argued that the merger was an efficient way to resolve the expensive patent litigation that one side was going to win.¹²⁴ This rationale ignores the fact that both patent infringement suits could fail. It also ignores the fact that the firms could have settled the litigation without the merger. In that merger case, the FTC required the merged firm to provide royalty-free licenses for the critical patents.

VI. Acquisitions of Potential Entrants

Acquisitions of potential entrants by dominant firms have raised potential competitive concerns for decades. They are taking on greater importance in digital and other high-tech markets, where firms often appear to acquire firms that produce complementary (or vertically related) products while those firms are still potential or nascent.

These acquisitions raise two potential entry concerns. One involves the acquisition of a “perceived” potential entrant—a firm whose potential for entry has constrained the pricing or spurred the innovations by the dominant firm. The other involves the acquisition of an “actual” potential entrant—a firm that may soon enter and become an actual competitor, reducing concentration and increasing price or non-price market competition. Most cases involve acquisitions of actual potential entrants by dominant firms. In these cases, it can be presumed that actual entry would lead to increased competition. The key issue is the likelihood that the potential entrant would enter on its own absent the acquisition.

Among such likely actual entrants, three types of firms can be distinguished:

- firms committed to entering in the near future
- firms considering entry and making investments to do so, although the likelihood and speed of their entry is uncertain
- firms with tools or capabilities that would allow them to enter but that have not taken substantial steps toward doing so.

Enforcement is limited solely to the first group of firms. This standard may be too high, particularly in digital industries, where the incumbent is able to look ahead and identify firms that provide the

¹²⁴ Fed. Trade Comm'n, Analysis of the Agreement Containing Consent Order to Aid Public Comment, In re Flow International Corp., File No. 081-0079 (July 10, 2008), <https://www.ftc.gov/sites/default/files/documents/cases/2008/07/080710analysis.pdf>.

greatest threat to its market power. As agencies have less expertise with these industries than with traditional ones, enforcement needs to rely on documents from the acquiring firm.

A. Meta/Within

*Meta/Within*¹²⁵ is a recent potential entrant acquisition case. Meta sells a virtual reality (VR) headset. Within controlled *Supernatural*, a VR dedicated fitness app that was available on Meta and other platforms. The FTC raised potential entry concerns because Meta controlled a different VR fitness app (Beat Saber), which was apparently capable of being extended into the VR dedicated fitness space. Acquiring Within would obviate the need for Meta to enter that market in another way, which would have led to more competition.

In this formulation, Meta was the actual potential entrant into the VR dedicated fitness app market. The issue was thus whether the likelihood of Meta's independent entry was sufficiently high to find liability. The FTC alleged that Meta had "available feasible means" to produce its own VR dedicated fitness app by extending its Beat Saber app in partnership with Peloton. According to the FTC, Meta had been considering this approach when it found out that *Supernatural* was possibly available and Apple a potential purchaser. At that point, Meta quickly dropped Beat Saber and pursued the deal for *Supernatural*.

Given the high burden of proof on Meta's independent entry demanded by the court (discussed below), the court rejected the FTC's claims that Meta was a "reasonably probable" entrant absent the transaction. The burden never shifted to Meta to justify its purchase. Had it done so, Meta probably would have argued that the acquisition would help it design better VR headsets. It is not clear why this motivation would be merger specific, as Meta could have extended the Beat Saber app in partnership with Peloton, which apparently had the necessary entry components to provide this benefit; acquired another app; or cooperated with Within or other firms without merging.

An interesting aspect of the case is whether Apple was an alternative acquirer. Although the opinion is heavily redacted, the court at one point seemed to suggest that the evidence indicated that the "primary animating factor" for pursuing Within was the possibility that Apple might lock up *Supernatural*.¹²⁶ If it were, possible vertical merger exclusion concerns would arise. For reasons not made clear, the FTC did not make any vertical foreclosure allegations.

B. Decision Theory Analysis of the Liability Standard for Potential Entry Mergers

The key issue in cases of acquisitions of actual potential entrants by dominant firms is the likelihood that the potential entrant would enter on its own absent the acquisition. The traditional burden of proof placed on the government to establish a sufficient likelihood that the potential entrant would enter has involved a high bar. In its 1984 *BAT* decision, for example, the FTC decision required "clear proof" that independent entry would have occurred.¹²⁷ In the more recent decision that rejected the FTC's challenge to Meta's acquisition of Within, the court applied a standard of

¹²⁵ *Federal Trade Commission v. Meta Platforms Inc., et al*, No. 5:2022cv04325 - Document 570 (N.D. Cal. 2023).

¹²⁶ *Id.* at 51.

¹²⁷ *In re B.A.T. Industries*, 104 F.T.C. 852, 926 (1984).

proof that required the FTC to show a “reasonable probability” that Meta would have entered independently, but it defined this probability as “noticeably greater than 50 percent.”¹²⁸

Decision theory analysis suggests that this high evidentiary bar for showing the likelihood of independent entry absent the merger makes no economic sense or legal sense, in light of the Section 7 incipency standard. To see why, suppose there are three (and only three) potential entrants into a market that is dominated by a single firm, that the probability that any one of them will enter is 20 percent, and that this probability is independent of whether any of the others enter. If the evidentiary standard is more-likely-than-not (i.e., more than 50 percent), the dominant firm could clearly acquire one of the potential entrants without being found liable under that standard.

This standard may not be unreasonable. What makes it highly excessive is the fact that the dominant firm would be permitted to acquire all three entrants, because the probability that at least one of them would enter is only 48.8 percent. A standard that would allow all three acquisitions of the only potential entrants is clearly too high for a sensible merger policy.¹²⁹

Decision theory analysis might even justify adoption of an anticompetitive presumption for acquisitions of potential entrants by dominant firms.¹³⁰ Such acquisitions raise very substantial competitive risks, for several economic reasons:

- “Market self-correction” will not occur if a dominant firm is permitted to acquire key nascent competitors or entrants that would lead to more competition.
- Dominant firms have the ability and incentive to eliminate or neutralize nascent or potential competition, because the acquisition can protect the dominant firm’s monopoly profits whereas an alternative purchaser will gain only competitive profits, as discussed in Chapters 9 and 11. The dominant firm can thus outbid equally efficient smaller rivals by sharing its monopoly profits, suggesting that its higher bid does not mean that its acquisition is procompetitive.¹³¹
- If the acquisition is prohibited, the dominant firm might achieve most of the efficiency benefits from de novo entry or a less troublesome transaction. The entrant’s technology could flow to an alternative purchaser or partner, which would then force the dominant firm to compete harder and reduce prices, even if the alternative purchaser were somewhat less efficient. The dominant firm is better able to understand the likely anticompetitive effects of the acquisition than the agencies.

¹²⁸ *FTC v. Meta Platforms Inc.*, 654 F. Supp. 3d 892 (N.D. Cal. 2023).

¹²⁹ *Id.* at 927.

¹³⁰ Jonathan B. Baker, *THE ANTITRUST PARADIGM* 167 (2019); Steven C. Salop and Fiona Scott Morton, *The 2010 HMGs Ten Years Later: Where Do We Go from Here*, 58 REV. IND. ORG. 81 (2021); Carl Shapiro, *Antitrust: What Went Wrong and How to Fix It*, 35 ANTITRUST 33 (2021).

¹³¹ Gilbert and Newbery (1982); see also Steven C. Salop, *Potential Competition and Antitrust Analysis* (OCED Note, 10 June 2021), [https://one.oecd.org/document/DAF/COMP/WD\(2021\)37/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2021)37/en/pdf). Erik Hovenkamp and Steven C. Salop, *Litigation with Inalienable Judgments*, 52 J. LEGAL STUD. 1 (2023).

For all these reasons, the expected value of consumer welfare from blocking the mergers will tend to exceed the expected value of permitting them to proceed, *ceteris paribus*.

A key informational asymmetry also will tend to lead to false negatives. It has been argued that prohibiting these acquisitions by a dominant firm would reduce innovation, because start-ups would be unable to undertake the common “invest and exit” investment strategy.¹³² This argument is flawed, as it is unlikely that the only potential acquirer is the dominant firm. Acquisition by a non-dominant firm would lead to more market competition.

C. Killer Acquisitions

A dominant firm or highly profitable oligopolist may have the incentive to acquire a potential entrant in order to prevent it from entering independently or providing its technology to a rival.

Such “killer acquisitions” have been observed in pharmaceutical markets.¹³³ After the acquisition, the new owner shuts down the R&D of a promising new drug that would compete with its product rather than continuing development. Such killer acquisitions amount to naked exclusionary conduct.

VII. Remedies

If a merger is predicted to be anticompetitive, should it be prevented outright? Or is there a remedy that would permit the merger, subject to a partial divestiture or other conditions?

Most challenged mergers are settled with a consent decree rather than being abandoned or litigated in a preliminary injunction hearing. Even in preliminary injunction trials, the court may evaluate a remedy volunteered by the merging parties as sufficient to prevent anticompetitive effects—what has been termed “litigating the fix.”

There are two types of remedies: behavioral remedies and structural remedies. Behavioral remedies are designed to constrain the future conduct of the merged firm. They may involve an agreement to supply technology or inputs to a divested entity for some of time; pricing commitments (e.g., to forgo prices for a period of time or not to discriminate against vulnerable groups); product availability requirements; or even future investment commitments. Structural remedies may involve divestitures of some or all overlapping businesses to create a competing firm or the licensing of technology to facilitate entry or increased competition by rivals.

Structural remedies have been likened to one-time surgery and behavioral remedies to drug therapy that must be continued and monitored over time. Structural remedies are preferred, because behavioral remedies require future monitoring and enforcement by the agency or the court. They also require prediction of all types of potential anticompetitive conducts—something that is particularly difficult, because the agency cannot account well for future market

¹³² Koren Wong-Ervin and James Moore, *Acquisitions of Potential Competitors: The U.S. Approach and Calls for Reform*, COMPETITION LAW AND POLICY DEBATE, (December 1, 2020). Available at SSRN: <https://ssrn.com/abstract=3677443>.

¹³³ See Colleen Cunningham, Florian Ederer, and Song Ma, *Killer Acquisitions*, 129 J. POL. ECON. 649 (2021).

developments or all the ways that the better-informed firms might discover loopholes in the remedy. Agency studies have shown that behavioral remedies have often been inadequate, leading to higher post-merger price increases than structural remedies.¹³⁴

In the *Bertelsman*¹³⁵ publishing merger, the publishers litigated the fix by offering a novel remedy: a promise that they would maintain internal competition among their multiple imprints (publishing divisions). The court rejected this remedy. As a matter of decision theory, the remedy was problematic, because it could be used to justify any merger to monopoly. It would also violate the conclusive presumption in *Copperweld*¹³⁶ that multiple divisions of a company must be treated as a single entity.

Putting these points aside, the court found that the promise lacked credibility, for three reasons:

- The proposed policy would not be profit-maximizing, implying that the company lacked the incentive to follow it.
- The promise could be broken and the policy eliminated by the company.
- The company could eliminate competition by combining imprints or having each imprint direct its efforts toward different authors.

¹³⁴ Federal Trade Commission, *The FTC's Merger Remedies 2006-2012: A Report of the Bureau of Competition and Economics* (Jan. 2017).

¹³⁵ *United States v. Bertelsmann SE & Co.*, No. CV 21-2886-FYP, 2022 WL16949715 (D.D.C. November 15, 2022).

¹³⁶ *Copperweld Corp. v. Independence Tube Corp.*, 467 U.S. 752 (1984).

Annex 12.A Horizontal Merger Checklists**Product Market Definition Checklist**

Note: Analysis of unilateral effects is closely connected to market definition. For further detail, see the unilateral effects checklist.

- Qualitative evidence of actual or likely buyer substitution
 - Inferences drawn from functional and quality differences and other product characteristics known to matter to buyers
 - Inferences drawn from buyers' requests for proposals
- Qualitative evidence from seller behavior
 - Documents showing how prices are determined by the firms (e.g., price zones)
 - Documents indicating how buyer substitution is monitored and understood by sellers
 - Firms' SWOT analyses (Strengths, Weaknesses, Opportunities, Threats)
 - Analysis of industry experts
- Quantitative evidence of actual or likely buyer substitution
 - Consumer switching analysis: Past responses of buyers to changes in relative prices (including econometric estimates)
 - Evidence of switching costs, particularly differences in switching costs among products
 - Buyer surveys indicating likely responses to price increases
- Direct evidence, including from natural experiments
 - Firms' responses to rivals' price changes
 - Price impacts observed in previous mergers
 - Price impacts of entry or exits

Unilateral Effects Checklist

- Evidence of closeness of substitution/diversion ratios (DRs) [*Note: This information is also useful for market definition*]
 - Evidence of customer preferences
 - Product attributes (functional similarities and differences)
 - Consumer preference surveys
 - Customer requests for proposals
 - Evidence of switching behavior
 - Consumer historical switching patterns (including bidding situations)
 - Econometric estimates of DRs/own- and cross-price elasticities of demand (e.g., from econometric analysis based on scanner data)
 - Natural experiments (e.g., impact of brand entry or exit on sales)
- Other evidence of direct competition
 - Natural experiments (e.g., *Staples*-type studies of geographic price differences; entry/exit effects on prices)
 - Competitor analysis (strategic plans, SWOT analysis)
 - Competitive monitoring
 - Pre-merger competitive interaction (pricing, advertising, and quality responses)
 - Third-party analyses of the industry (e.g., trade press, analyst reports, industry consultant reports)
- Evidence of impact of merger on unilateral incentives
 - Merger plans (e.g., pricing, brand rationalization/elimination/repositioning, entry/exit, innovation)
 - GUPPI score
 - Possible with rough estimates of DRs using “proportional diversion” assumption (i.e., based on market shares, market demand elasticity and margin)
 - DRs based on estimates from switching analysis
 - Natural experiments (e.g., price effects of entries or exits, previous mergers, *Staples*-type studies)
- Constraints on upward pricing pressure from non-merging firms (expansion, entry and repositioning)
 - Existence of very closely positioned rivals
 - Rivals’ ability and incentives to expand sales and “reposition” (including capacity constraints, impact of possible exclusionary effects of merger)
 - Rapid or slower entry thru brand repositioning and brand extensions
 - History, including price effects, if data available
 - Cost and speed of brand extensions and repositioning
 - New entry: Evaluation of timeliness, likelihood, and sufficiency of new entry

- Efficiencies/downward pricing pressure
 - Cognizable cost reductions
 - Cognizable quality improvements (that can lower quality-adjusted prices)
 - Estimates of downward pricing pressure from cost/quality changes
 - Increased ability/incentive to innovate
- Comparison of upward and downward pricing pressure
 - Upward pricing pressure minus downward pricing pressure
 - Economic simulation models (which take into account rivals' responses)

Coordinated Effects Checklist

Note that the plus (+) and minus (-) signs indicate whether the factor contributes to more (+) or less (-) vulnerability.

- Vulnerability of market to successful post-merger coordination
 - External stability (identification of a potential “likely collusive group,” under assumption that the groups of firms can perfectly collude)(related to market definition and entry analysis, as discussed later)
 - Substitution to other products by non-colluders (“market definition”) (-)
 - New entry (“ease of entry”) (-)
 - Expansion by non-collusive fringe (“ease of expansion”) (-)
 - Collusive group (market) demand elasticity (-)
 - Internal stability (evaluation of likelihood that LCG can successfully engage in post-merger coordination under a totality of evidence standard)
 - Small number of competitors (+)
 - Market shares/concentration (HHI level) (+)
 - Other facilitating/complicating factors (all relative to other markets)
 - Evidence of current coordination; history of quick responses (++)
 - History of attempted/successful collusion (++)
 - Existence of maverick (— —)
 - Mechanism for side payments (+)
 - Information flows/info exchanges (+)
 - Price and output “transparency” (+)
 - Product homogeneity (+)
 - Lumpy sales/long term contracts (-)
 - Powerful buyers; buyer concentration (-)
 - Volatility/predictability of demand (-)
 - Seller asymmetry/heterogeneity (-)
 - Excess capacity (+ or -)
 - Demand elasticity (-)
 - Importance of innovation (— —)
 - Vertical integration (-)
- Evaluation of incremental impact of the merger
 - Reduction in number of competitors (+)
 - Magnitude of HHI increase (Δ HHI) (+)
 - Acquisition of “disruptive” or “maverick” firm (++)
 - Decrease in excess capacity (reduces incentive to cheat [++], reduces ability to punish [-])
 - Increase in seller symmetry (+)
 - “Natural experiment” evidence (+ or -)

- Lower costs (“efficiencies”) that would affect greater incentives to cheat (-); potentially greater ability to punish (+)(this point is typically ignored)
- Increased ability to cheat secretly (e.g., thanks to vertical integration) (-)

Ease of Entry Checklist

Note: If entry is sufficiently “easy,” it would deter exercise of durable market power.

Entry is “easy” if it would deter or counteract exercise of market power.

- “Entry” includes:
 - De novo entry by new competitors
 - Expansion by “fringe” firms
 - “Repositioning” (i.e., product/geographic “extensions” or “reformulation” by established firms)
- Two types of potential entrants (and fringe firms as potential “expanders”)
 - “Rapid” entrants (also referred to as production substitution; flexible, uncommitted, or hit and run entrants; swing capacity)
 - Ability to rapidly enter or exit and/or to alter participation rates when prices change
 - Lack of significant sunk entry costs or exit costs
 - Treated as market participants (assigned production levels in response to SSNIP)
 - “Regular” entrants (long-term entrants “committed” to the market once they enter);
 - Entrants with significant sunk costs.
 - Three prongs
 - Timeliness: Speed of entry, impact on prices before entry fully carried out
 - Likelihood: Entry profitability, taking account of potential price responses by incumbents
 - Sufficiency: Limitations on number, product formulation, and sales of potential entrants, which might make entry impossible to deter or counteract price increases
 - “Repositioning” (through rapid or regular entry)
- Evidence for evaluating ease of entry
 - History of entry and exit
 - Entry in response to various demand or supply changes
 - Impact of past entry on prices
 - Identification of specific potential entrants (if possible)
 - Analysis of entry requirements and market realities
 - Elements of technology and entry process; entrant product characteristics
 - Time to entry
 - Possible entrant cost or demand (dis)advantages (costs, reputation for quality/reliability, differences in product differentiation characteristics from incumbents, financial constraints)
 - Identification and measurement of sunk costs

- Ability to attract business before sinking costs
- Identification and measurement of entry and operational costs, including possible impediments (patents, input unavailability)
- Evaluation of economies of scale: Minimum Efficient Scale (MES) = output level at which average costs bottom out; Minimum Viable Scale (MVS) = output level at which entrant can earn break-even profits at current prices)
- Prediction of post-merger competition; likelihood that entry will be accommodated
- Possible capacity limitations of entrants
- Entrants' possible product differentiation differences
- Existence of long-term contracts that restrict potential entrant' short-run sales

Merger Efficiencies Checklist

Agencies will not challenge a merger if the cognizable efficiencies are sufficiently large to prevent consumer harms in any relevant market. Efficiencies are cognizable only if they are merger-specific, verifiable, and do not arise from anticompetitive output (or service) reductions. Cognizable efficiencies are assessed net of the inefficiencies from the merger and costs of achieving the efficiencies. The burden of production is placed on the parties.

1. Types of efficiency benefits

- Lower costs (particularly variable costs; possibly procurement efficiencies)
- New and superior products; improved product quality
- Faster and better R&D and innovation

2. Merger-specificity

- Is the merger “reasonably necessary” to achieve the claimed benefits?
- Could “unilateral” (i.e., single-firm) conduct achieve essentially the same benefits?
- Could the benefits be achieved with alternatives such as licensing, a limited joint venture, or acquisition of more limited assets that raise fewer competitive concerns?
- Does the merger increase the speed of achieving the benefits? (If it does, only the timing advantages are merger-specific.)
 - Verifiability
- Can the efficiency benefits be verified by the decision maker by reasonable means? Can they be quantified? Are the claimed benefits so far off in time that they are speculative?
- Will the firm have the incentive to actually spend the money to achieve them?
- Were efficiency projections generated using standard and usual business practice methods or were they specifically formulated for this merger?
- Are they consistent with experience?
 - Impact on competitive incentives
- Will the claimed efficiencies increase the incentives of the merged to reduce prices?
- Do the claimed efficiencies arise from a reduction in output or competition (in which case they are not cognizable)?
- Are these claimed efficiencies a way to exercise market power (in which case they are not cognizable)?
 - Overall consumer benefits (sufficiency)
 - Pass-thru: Are the efficiencies sufficient to deter price increases (or quality-adjusted price increases) in every relevant market?
 - Sliding scale: Are efficiencies sufficiently large to overcome larger potential adverse effects?
 - Timing: Will the efficiencies lead to consumer benefits in the short term, where they are given more weight?
 - Inextricably linked: Are there non-remediable harms in some relevant markets? If so, are these harms inextricably linked to much larger benefits in other markets