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Appraising Merger Efficiencies

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APPRAISING MERGER EFFICIENCIES

Introduction

Mergers of business firms violate the antitrust laws when they threaten to lessen competition, which generally means a price increase resulting from a reduction in output. Mergers of relatively small firms in competitive markets almost never pose this threat, but when markets are more concentrated or products are differentiated the threat of higher prices looms larger.¹ At the same time, however, a merger that threatens a price increase may also enable the post-merger firm to reduce its costs or improve its product.² Few areas of merger law are more controversial than the treatment of purported efficiencies, which are often claimed in merger litigation today, but almost never found to justify a merger that has been shown to be prima facie unlawful. The decisions that credit claimed efficiencies typically also find that the government failed to make out its prima facie case against the merger.³ In that case crediting of efficiencies is simply dicta.

Nevertheless, attitudes toward mergers are heavily driven by assumptions about efficiency gains. If mergers of competitors never produced efficiency gains but simply reduced the number of competitors, a strong presumption against them would be warranted. We tolerate most mergers because of a background, highly generalized belief that most or at least many do produce cost savings or improvements in products or service. Those who think that significant efficiency gains are likely to be both present and strong in most mergers would prefer to give merging firms the benefit of the doubt, and perhaps adjust proof burdens accordingly.⁴ By contrast, those who believe that many mergers produce few or trivial efficiency gains would narrow the defense or perhaps even eliminate it.⁵

Merger analysis today takes efficiencies into account in two ways. First, it makes certain assumptions about efficiencies in determining where the line for prima facie illegality should be drawn. Second, however, it recognizes an efficiencies "defense" once prima facie illegality has been established, with the burden of proof ordinarily on the defendant.⁶ As developed below, the empirical literature suggests that merger policy today is under deterrent. That is, current enforcement policy is more likely to permit an anticompetitive merger than to prohibit a

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²Id. at ¶¶970-976.
³E.g., F.T.C. v. Freeman Hosp., 911 F. Supp. 1213, 1227 (W.D. Mo.) aff'd, 69 F.3d 260 (8th Cir. 1995) (finding substantial efficiencies from elimination of overhead expenses, but rejecting the FTC’s case on market definition grounds). On the burden-shifting framework applied in merger analysis see discussion infra, text at notes __.
⁴See discussion infra, text at notes __.
⁶See discussion infra, text at notes __.
harmless one.\textsuperscript{7} At the same time, however, the fault appears not to lie with the efficiencies defense. The defense has never or almost never been used to defend a merger successfully after the government has made out a prima facie case of illegality. In that case the under deterrence problem must lie in the prima facie case itself.

In highly competitive, undifferentiated markets anticompetitive price increases (or quality reductions) are unlikely to be a motivating factor for a merger. The post-merger firm lacks significant market power, and the market is no more conducive to collusion than it had been before. In that case efficiency gains must be the rationale for the merger. As markets become more concentrated or differentiated, however, anticompetitive consequences become more plausible. More concentrated markets encourage collusion or other forms of coordinated interaction,\textsuperscript{8} particularly when there are only three, four, or a few more firms in the post-merger market.\textsuperscript{9} In markets that are differentiated by product or geography, mergers between relatively "proximate" firms in product or geographical space can facilitate unilateral price increases.\textsuperscript{10} As the case for either of these anticompetitive outcomes becomes stronger, so does the strength of the noncompetitive explanation.

Today most mergers are assessed under § 7 of the Clayton Act, which condemns both asset and stock acquisitions whose effect "may be substantially to lessen competition."\textsuperscript{11} That

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  \item [7] See discussion infra, text at notes __.
  \item [8] The term "coordinated interaction" refers to both explicit price fixing and more tacit forms of collusion. The 2010 Horizontal Merger Guidelines, §7, give this definition:

  Coordinated interaction involves conduct by multiple firms that is profitable for each of them only as a result of the accommodating reactions of the others. These reactions can blunt a firm’s incentive to offer customers better deals by undercutting the extent to which such a move would win business away from rivals. They also can enhance a firm’s incentive to raise prices, by assuaging the fear that such a move would lose customers to rivals.

  Coordinated interaction includes a range of conduct. Coordinated interaction can involve the explicit negotiation of a common understanding of how firms will compete or refrain from competing. Such conduct typically would itself violate the antitrust laws. Coordinated interaction also can involve a similar common understanding that is not explicitly negotiated but would be enforced by the detection and punishment of deviations that would undermine the coordinated interaction. Coordinated interaction alternatively can involve parallel accommodating conduct not pursuant to a prior understanding.

  \item [9] See 4 AREEDA & HOVENKAMP, ANTITRUST LAW, supra note __, ¶¶916-918.
  \item [10] See Horizontal Merger Guidelines (2010), supra note __, §6; 4 AREEDA & HOVENKAMP, ANTITRUST LAW, supra note __, ¶¶914-914.
  \item [11] 15 U.S.C. §18: No person ... shall acquire, directly or indirectly, the whole or any part of the stock or other share capital and no person ... shall acquire the whole or any part of the assets of another person ... where in any line of commerce or in any activity affecting commerce in any section of the
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statute is enforced by both the Antitrust Division of the Justice Department and the Federal Trade Commission. While private plaintiffs are also empowered to enforce §7 through both damages and equity actions, their impact on merger law has been relatively small.\textsuperscript{12}

The "substantially lessen competition" language in §7 is not self-defining, and it has meant different things at different times. Lessening competition could be a reference to simple rivalry, or the number of firms in a market. In that case every horizontal merger lessens competition by reducing the number of rivals. The statutory phrase might also refer to general welfare, which would trade off possible consumer injuries against efficiency gains.\textsuperscript{13} Finally, it could be a reference to output and lower prices: a merger "substantially" lessens competition if it reduces output in the market, with the result that prices rise. This definition comes closest to the approach to merger policy reflected in the 2010 Horizontal Merger Guidelines and applied today by the antitrust enforcement Agencies\textsuperscript{14} and courts.

\textbf{From Brown Shoe to an Efficiency "Defense."}

Section 7 of the Clayton Act was substantially amended in 1950 by the Cellar-Kefauver Act,\textsuperscript{15} first applied by the Supreme Court in its 1962 \textit{Brown Shoe} decision.\textsuperscript{16} Neither original §7 nor the revisions ever mentions efficiencies as a defense, although there are some references in the legislative history.\textsuperscript{17} However, the statute does condemn only those mergers that may "substantially lessen" competition. As a result an efficiencies defense may be built in, so to speak, to the extent that cost savings can reduce or eliminate the threat to competition. That is, the very concept of substantially lessening competition refers to competitive harm that outweighs any likely efficiencies.

\textit{Brown Shoe} did not address the issue, however, and clearly did not recognize an efficiency defense to a merger. To the contrary, it approved of the district court's analysis that the merger should be condemned precisely because it enabled the post-merger firm to produce

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\textsuperscript{12} On private merger challenges, see 2A PHILLIP E. AREEDA, HERBERT HOVENKAMP, ROGER D. BLAIR, AND CHRISTINE PIETTE DURRANCE, ANTITRUST LAW ¶356 (4th ed. 2014)
\textsuperscript{13} See discussion infra, text at notes __.
\textsuperscript{14} The term "Agency" as used here refers to the Antitrust Division of the Justice Department and the Federal Trade Commission, both of whom have the power to enforce §7 of the Clayton Act.
\textsuperscript{16} Brown Shoe Co. v. United States, 370 U.S. 294 (1962).
\textsuperscript{17} For example, during the debates Senator Estes Kefauver asked about a merger of two newspaper "in order to save the expense of operating in two separate buildings." Senator Herbert O'Conor replied that such a merger would not be unlawful because if that were the only effect "competition would be stimulated rather than lessened. 96 Cong. Rec. 16456 (1950) (statements of Senators Kefauver and O'Conor).
shoes of better quality or lower cost, thus injuring its rivals.\textsuperscript{18} Five years later the Supreme Court adhered to that view, concluding that "[p]ossible economies cannot be used as a defense to illegality." Although Congress "was aware that some mergers which lessen competition may also result in economies," ... it "struck the balance in favor of protecting competition."\textsuperscript{19}

Merger policy changed remarkably in the 1970s and later, however. The Government did not take very seriously the general proposition that a merger should be condemned simply because it reduced costs or improved products.\textsuperscript{20} Already in 1968 the Antitrust Division's first set of Merger Guidelines acknowledged that "improvements in efficiency" should be treated as a mitigating factor in merger law.\textsuperscript{21} Nevertheless, the Antitrust Division concluded that the ordinary market concentration standards for assessing illegality should be sufficient because challenges to mergers of "companies operating significantly below the size necessary to achieve significant economies of scale" would be rare.\textsuperscript{22} In other words, the offered substantive standards of illegality already assumed merger efficiencies. Beginning in 1982 the Merger Guidelines elaborated more on an efficiency defense.\textsuperscript{23} Since that time the defense has been expanded in successive editions of the Guidelines, but the fact remains that almost no firms have ever asserted it successfully against a prima facie unlawful merger.

"Defense" or Prima Facie Case?

Today courts assessing mergers apply a burden shifting framework in which the government or private plaintiff challenging a merger must first make out a prima facie case of


[I]ndependent retailers of shoes are having a harder and harder time in competing with company-owned and company-controlled retail outlets. National advertising by large concerns has increased their brand name acceptability and retail stores handling the brand named shoes have a definite advertising advantage. Company-owned and company-controlled retail stores have definite advantages in buying and credit; they have further advantages in advertising, insurance, inventory control . . . and price control. These advantages result in lower prices or in higher quality for the same price and the independent retailer can no longer compete . . .

\textsuperscript{19}FTC v. Procter & Gamble Co., 386 U.S. 568, 580 (1967).

\textsuperscript{20}There were a few exceptions, particularly in the FTC. See, e.g., Allis-Chalmers Mfg. Co. v. White Consol. Indus., 414 F.2d 506, 515-518 (3d Cir. 1969), cert. denied, 396 U.S. 1009 (1970), where the court condemned a merger between a manufacturer of rolling mills, used in the production of steel, and a manufacturer of the electric hook-ups for such mills, because the merger would create "the only company capable of designing, producing and installing a complete metal rolling mill," and this "would raise higher the already significant barriers to the entry of others."


\textsuperscript{22}Ibid.

Most mergers are challenged for one of two reasons. First is the traditional rationale that the merger will increase concentration in a market by reducing the number of firms. In more highly concentrated markets this will increase the likelihood of price fixing or other forms of coordinated interaction that threaten to reduce output and raise price. Alternatively, in product differentiated markets some firms may be more adjacent in product space, usually because of product similarity or occasionally geographic proximity. Other firms are more remote. A merger of two of the more adjacent firms can permit a price increase among those two firms while most of the rest of the market remains unaffected. This “unilateral effects” theory has been quite upsetting to traditional merger analysis and technically does even require a market definition. The underlying principle is that a firm’s ability to raise its price profitability depends on the number of sales it will lose. If a firm acquires a close rival, fewer sales will be diverted away from the merging firms, and a price increase is more likely to be profitable.

Once either traditional concentration theory or unilateral effects theory predicts that the merger will increase prices, the burden shifts to the proponents of the merger to show efficiencies, which are either cost reductions or product improvements that result from the merger. Whether this evidence of efficiencies is sufficient to offset the challengers’ prima facie case depends on a number of factors, including the particular welfare test that the merger analysis applies, the nature of the claimed efficiencies, the robustness of the evidence for them, their magnitude in relation to the predicted competitive harm, and whether or not the claimed efficiencies are “merger specific.”

The view taken by the enforcement agencies today and expressed in the Merger Guidelines is that most mergers are socially beneficial because they lead to cost reductions or better output, but with a few exceptions. As a result a background assumption about efficiencies is built into the initial analysis. Since the Reagan administration the government has challenged fewer than 2% of mergers sufficiently large that they must be reported. This makes an efficiency defense theoretically relevant although perhaps not essential. One might conclude as

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24 This burden shifting framework is generally identified with the decision in United States v. Baker Hughes, Inc., 908 F.2d 981, 982-983 & n. 3 (D.C. Cir. 1990). See discussion infra, text at notes __.
27 See discussion infra, text at notes __.
28 See discussion infra, text at notes __.
29 See discussion infra, text at notes __.
30 See discussion infra, text at notes __.
31 See discussion infra, text at notes __.
32 Fairly recent data suggest that a little under 1% of acquisitions were challenged during the George W. Bush administration. The Obama administration has been more aggressive, challenging about 1.5% of mergers. Even this number is lower than the long-term average of 1.8% since the Reagan administration. See http://www.insidecounsel.com/2013/03/26/how-antitrust-authorities-view-mergers-and-acquisi.
the 1968 Guidelines did that the market structure standards the government agencies use are sufficiently tolerant to take the general run of efficiencies into account.

Indeed, at least as originally conceived, the "upward pricing pressure" models that are used to assess unilateral pricing effects from mergers include a built in factor that simply hypothesizes efficiency gains. These models commonly include a standardized efficiency "credit," typically 10% of marginal cost, rather than seeking to quantify efficiencies on a case-by-case basis. In practice this may not differ all that much from the structural approach taken in earlier Guidelines that suggested that efficiencies were simply assumed in the calculus. To that extent prediction of merger efficiencies becomes part of the government's prima facie evaluation. Without providing any detail, the 2010 Horizontal Merger Guidelines state that the Agencies themselves will "look for reliable evidence" of efficiencies in their initial assessment, and that the economic models that the Agencies use to evaluate unilateral effects "can incorporate merger-specific efficiencies."

Of course, an arbitrary efficiency credit given in advance can either under- or overstate efficiencies. In practice, the process of merger analysis contemplates a fairly generalized efficiency credit at early review stages, but more detailed and case-specific inquiries later. In any event, no matter what the government's opening analysis, once a serious efficiency defense is raised in litigation the government must meet it. The 2010 Horizontal Merger Guidelines acknowledge that ultimately merger efficiency claims will have to be evaluated on a case-by-


35 See, e.g., 2010 Horizontal Merger Guidelines, supra note __, §6.1, Example 19 (acknowledging that once a price increase is predicted "Further analysis is required to account for repositioning, entry and efficiencies."

36 2010 Horizontal Merger Guidelines §2.2.1.

37 Id., §6.1.

38 James Langenfeld & Gregory G. Wrobel, Upward Pricing Pressure Analysis under the 2010 Horizontal Merger Guidelines, 25 ANTITRUST 21, 24-25 (Fall, 2010).
case basis. They list some important factors whose effects vary from one situation to another.\textsuperscript{39} The case law consistently insists on case-by-case evaluation, which naturally requires some kind of measurement in each individual case where efficiencies are claimed.\textsuperscript{40}

In 1976 Richard Posner advocated against any efficiencies defense that would require case specific measurement. He concluded that "the measurement of efficiency (whether based on economies of scale, superior management, or whatever) [is] an intractable subject for litigation...."\textsuperscript{41} A quarter century later in the second edition of that book Posner largely adhered to his position.\textsuperscript{42} Consistent expansions of the efficiency discussion in subsequent editions of the Merger Guidelines, as well as its frequent assertion in litigation, indicates that Posner did not have the last word on this subject. At the same time, litigants' general lack of success in establishing the defense suggest that he may be right after all.

Mergers are not the only area where efficiencies are relevant to antitrust law. Many practices that are challenged under antitrust law's rule of reason simultaneously threaten competitive harm while promising efficiency gains. The purpose of antitrust's rule of reason in these situations is to determine whether the participants have sufficient market power to make an anticompetitive restraint plausible and, if so, whether the restraint really does threaten to harm competition by increasing prices or excluding rivals unreasonably.\textsuperscript{43} If such a threat is found the proponents of the arrangement can defend by showing that the arrangement produces offsetting efficiencies. Even if they show this, however, the challenger can prevail by showing a "less restrictive alternative" that would achieve the efficiencies but without the restraint's harm to competition.\textsuperscript{44} This less restrictive alternative analysis is a rough equivalent to the Merger

\textsuperscript{39} 2010 Horizontal Merger Guidelines, \textit{supra} note __, §10:
The Agencies have found that certain types of efficiencies are more likely to be cognizable and substantial than others. For example, efficiencies resulting from shifting production among facilities formerly owned separately, which enable the merging firms to reduce the incremental cost of production, are more likely to be susceptible to verification and are less likely to result from anticompetitive reductions in output. Other efficiencies, such as those relating to research and development, are potentially substantial but are generally less susceptible to verification and may be the result of anticompetitive output reductions. Yet others, such as those relating to procurement, management, or capital cost, are less likely to be merger-specific or substantial, or may not be cognizable for other reasons.

\textit{See}, e.g., United States v. Oracle Corp., 331 F.Supp.2d 1098, 1174-1175 (N.D.Cal. 2004) (claimed efficiencies such as increased future innovation not verifiable, particularly in light of fact that no contemporaneous internal documents discussed them; government nevertheless lost on relevant market issue). On sufficiency, \textit{see} FTC v. Libbey, Inc., 211 F.Supp.2d 34 (D.D.C. 2002) (whether or not efficiencies were verifiable they were insufficient to overcome high concentration).

\textsuperscript{40} \textit{See} discussion \textit{infra}, text at notes __.

\textsuperscript{41} \textsc{Richard A. Posner, Antitrust Law: An Economic Perspective} 112 (1976).

\textsuperscript{42} \textsc{Richard A. Posner, Antitrust Law} 133 (2d ed. 2001).

\textsuperscript{43} \textit{See} 7 \textsc{Phillip E. Areeda & Herbert Hovenkamp, Antitrust Law}, Ch. 15 (3d ed. 2010).

\textsuperscript{44} \textit{Id.}, \textsection 1505.
Merger efficiencies be "merger specific." That is, the proponents of the merger must show that they could not reasonably have attained these efficiencies through some less harmful way than the contemplated merger. As we show below, the requirement that claimed efficiencies be "merger specific" makes a great deal of sense under a general welfare test for competitive harm from mergers. It makes considerably less sense, however, under the consumer welfare test that the Agencies actually employ.

Assessing Merger Efficiencies Under Alternative Welfare Models

How efficiencies are assessed in merger analysis partly depends on the underlying goals of the antitrust laws -- in particular, on which definition of "welfare" the antitrust laws apply. Merger efficiency analysis is one place where the choice of a welfare standard test matters to the courts. Today the principal debate over antitrust welfare tests concerns whether antitrust policy should adopt a "general welfare" or a "consumer welfare" approach. As a basic matter the general welfare test is more difficult to apply and also harsher on those challenging a merger.

"General welfare" tests in antitrust are derived from a conception of Kaldor-Hicks efficiency, sometimes called "potential" Pareto efficiency. Under this standard a practice is said to be efficient even though it produces both gains and losses, provided that the gains exceed the losses. The term "potential" Pareto is helpful for understanding such situations. A pure Pareto improvement implies gains for everyone, or at least gains and indifference for everyone, but no losers. A practice is efficient in the potential Pareto sense if the gainers gain enough that they could completely compensate the losers, leaving them indifferent. In that case compensation would turn the practice into a Pareto improvement. Importantly, the potential Pareto test does not require that losers actually be compensated, but only that the gainers' gains be large enough to make satisfactory compensation possible. For example, a merger that produced $5M in efficiency gains while raising aggregate prices by $4M would be counted as efficient, assuming it did no other harm. The gains in this case are more than large enough to permit the gainers to compensate the losers fully and still have some gains left over.

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45 2010 Horizontal Merger Guidelines, supra note __, §10.
46 See discussion infra, text at notes __. See FTC v. cardinal Health, 12 F.Supp.2d 34, 63 (D.D.C. 1998), which observed that while merging hospitals presented significant evidence of cost savings,

The critical question raised by the efficiencies defense is whether the projected savings from the mergers are enough to overcome the evidence that tends to show that possibly greater benefits can be achieved by the public through existing, continued competition. The Defendants simply have not made their case on this point.

See also FTC v. Staples, Inc., 970 F.Supp. 1066 (D.D.C. 1997), which rejected an efficiency study submitted by the defendant that purported to show large cost savings: "[T]he evidence shows that the defendants did not accurately calculate which projected cost savings were merger specific and which were, in fact, not related to the merger." Id. at 1090. The court also rejected the methodology that the defendants used to calculate the cost savings, Id., and found no support for the conclusion that two-thirds of the savings would be passed on to customers.

47 See discussion infra, text at notes __.
48 For an introduction see HOVENKAMP, FEDERAL ANTITRUST POLICY, supra note __, §2.3c.
By contrast, a "consumer welfare" standard effectively requires a form of actual compensation. The $5M efficiency gain in the example would meet the test only if at least $4M of it were passed on to consumers, thus yielding prices that are no higher than they were prior to the merger. If consumers suffer a net harm, it does not matter that producers are benefitted by an even greater amount. The merger that raises aggregate prices by $4M should be condemned, whether or not offsetting efficiency gains exceed $4M.

The choice between these two antitrust welfare models has been fiercely debated for nearly forty years. In 1978 Robert H. Bork famously described his approach to antitrust as adopting a "consumer welfare" model, when in fact it was based entirely on general welfare. Both sides have strong supporters and detractors, although the debate has had relatively little explicit impact on antitrust case law outside the context of mergers. In its 2013 Actavis decision, however, all eight participating Justices appeared to accept a consumer welfare model.

Consumer Welfare under the 2010 Horizontal Merger Guidelines

While the 2010 Merger Guidelines never use the term "consumer welfare," that is quite obviously the definition that they have in mind when articulating the tradeoff between competitive threats and efficiencies. The Guidelines state that cognizable efficiencies must be "of a character and magnitude such that the merger is not likely to be anticompetitive in any relevant market." In making that determination the Agencies consider whether the efficiencies are "sufficient to reverse the merger's potential to harm customers in the relevant market, e.g., by preventing price increases in that market." As a result, a merger will not ordinarily be approved unless it makes consumers no worse off than they were prior to the merger. If the amount of efficiencies passed on to consumers are sufficiently large to keep prices to premerger levels, then there is no consumer harm at all.

This approach to efficiencies is not a significant departure from antitrust analysis generally. One is hard pressed to find any American antitrust decision that produced a clear fact finding that a practice (merger or otherwise) actually injured consumers by raising prices, but then went on to approve the practice by concluding that consumer losses were more than offset

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52 2010 Horizontal Merger Guidelines, supra note __, §10.
by efficiency gains. That is, the cases in fact tend toward a consumer welfare approach even though they rarely articulate it.

**Welfare "Tradeoffs"**

Welfare "tradeoff" models attempt to guide legal policy by assessing both the harms and benefits of a particular practice. The best known welfare tradeoff model for mergers was developed by Oliver E. Williamson and applies a general welfare test. Even under a consumer welfare model, however, assessment of tradeoffs is necessary. The lines of legality are simply drawn in a different place. In a general welfare model legality requires that producer gains be sufficiently large to offset consumer losses, but consumer losses are still acceptable. By contrast, in a consumer welfare model the efficiency gains must be so large that the resulting price to consumers is no higher than prior to the merger. Assuming that the savings show up in variable costs, increased savings from efficiencies will cause the post-merger firm's profit-maximizing price to be lower. If the structural effects of a merger tend to push price upward when efficiencies are not present, it will take larger efficiency gains to produce legality under a consumer welfare test than under a general welfare test.

Williamson's welfare tradeoff model, illustrated by Figure 1, shows a market that was competitive prior to a merger, with price ($P_1$) equal to cost ($C_1$). The merger has two results. First, it enables the firm to raise its price from $P_1$ to $P_2$. Secondly, efficiencies resulting from the merger permit the firm to reduce its costs from $C_1$ to $C_2$. Triangle $A_1$ represents the deadweight loss to consumers, while rectangle $A_2$ represents gains that accrue to the firm as a result of the merger-created efficiencies. In this case, while the efficiency gains are significant, they do not completely offset the price increase, so the price rises. As a result, merger analysis under a general welfare test would require the fact finder to determine whether the area of triangle $A_1$ was greater or less than the area of rectangle $A_2$. Williamson then showed that a relatively modest efficiency gain would be sufficient to make such a merger welfare increasing rather than welfare reducing under the general welfare test. By contrast, under a consumer welfare test this

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54 Oliver E. Williamson, Economics as an Antitrust Defense: the Welfare Trade-Offs, 58 AMER.ECON.REV. 18 (1968); see also Oliver E. Williamson, Economics as an Antitrust Defense Revisited, 125 U.PA.L.REV. 699 (1977); Robert Pitofsky, Efficiencies in Defense of Mergers: Two Years After, 7 GEO. MASON L. REV. 485 (1999); 4A ANTITRUST LAW, supra note __, ¶¶ 970–976.

55 On different types of cost savings, see discussion infra, text at notes __.
merger would be unlawful because the post-merger price is higher than the pre-merger price. Williamson did not address that issue.

**Figure 1**

Williamson described his own model as "naive," and it is subject to several qualifications, some quite severe. First, the most common historical reason for condemning mergers is that they facilitate collusion, or "coordinated interaction" in the terms of the 2010 Horizontal Merger Guidelines. Successful collusion reduces output and raises price above cost. But collusion is a market wide phenomenon, not simply limited to the merger parties. As a result mergers that facilitate coordinated interaction permit all firms in the market to raise their prices, a fact that has been borne out both theoretically and empirically. For example, suppose the merger in Figure 1 created a post-merger firm with a 40% market share, in the process

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56 2010 Horizontal Merger Guidelines, note __ at §7.1.
facilitating collusion with other firms. In that case the full 100% of firms in the market would very likely collude and raise their prices, but the efficiencies created by the merger would benefit only the post-merger firm, with its 40% market share. In order to assess the true social cost of such a merger we would have to look at harm across all sales, including the sales of the 60% that did not realize any post-merger efficiencies but merely enjoyed the price increase. All else being the same, the consumer deadweight loss would be two-and-one-half times larger than Williamson's figure suggests.

This critique actually had more force at the time Williamson published his own paper, in 1968, than it does today. At that time the courts were frequently condemning mergers on very small post-merger market shares, often on the order of 10% or less. As a result, if such a merger facilitated collusion the price effects would very likely dwarf the efficiency effects. By contrast, a merger of two 20% firms today would very likely be challenged on collusion grounds only if one or more other firms in the market were also quite large. In any event, if the merger is condemned on the fear of market wide coordination, then the analysis must consider price effects across all firms whose coordinated prices rise, while the relevant efficiencies accrue only to the post-merger firm. In the Baby Food case, where the merger was challenged on concentration increasing grounds, the merging partners (Heinz and Beech-Nut) together controlled a little less than 35% of the market. In the St. Luke's Hospital case, also challenged on concentration increasing grounds, the post-merger firm accounted for 70% to 80% of the relevant market. Full assessment of efficiencies in these cases would require the court to consider the price impact of non-merging competitors.

In the case of so-called "unilateral" effects, it is possible and even quite likely that nonmerging parties will increase their prices as well, although probably not by as much as the prices of the merging firms increase. Nonmerging firms might reposition themselves in order to take advantage of the fact that two rivals, having become one, raised their price and reduced their output. One likely result is that these nonmerging competitors produce more but charge higher

58 United States v. Von's Grocery Co., 384 U.S. 270 (1966) (condemning merger of two small grocery chains with a combined market share of 7.5% of a highly competitive market); see also 1968 Merger Guidelines, §4, available at http://www.justice.gov/sites/default/files/atr/legacy/2007/07/11/11247.pdf (identifying as "highly concentrated" a market in which the acquiring and acquired firm each had at least 4% of the market).
59 Assuming a concentration threshold of 2500 HHI, and a market of A=20, B=20, C=20, D=20,E=10, F=10, the post merger-HHI after a merger between A and B would be 2600, which the 2010 Guidelines would identify as highly concentrated. See 2010 Horizontal Merger Guidelines, supra note __, §5.3.
prices too, given that total market output is smaller as a result of the merger.\(^6\) Once again, the non-merging firms produce additional consumer harm but no offsetting efficiencies.

The consumer welfare standard in the 2010 Horizontal Merger Guidelines requires that the post-merger firm's prices be no higher than they were prior to the merger. If that is the case, the prices of non-merging competitors would not ordinarily increase either, for they would be tracking and matching a downward rather than upward price movement. Quite the contrary, in fact. If efficiencies were so large that the post-merger firm actually cut its price, rivals would have to match the cut and consumers could experience greater gains than represented by the post-merger firm's own efficiencies.

A second problem with the Williamson model is that it assumed that \(A_1\) in the figure was the entire social cost of a merger. That might be true in some cases, but not necessarily in others. This merger is highly profitable, producing gains equal to \(A_2\) (efficiency) + \(A_3\) (noncompetitive pricing). A firm pursuing these profits would be willing to spend up to their value in order to obtain them. Whether these investments were themselves efficient would depend on the circumstances, but in at least some circumstances they would not be. For example, the firm might engage in noncompetitive pricing to beat down the value of a rival's firm before acquiring it.\(^6\)

A third and quite significant problem with Williamson's naive model is that it requires the efficiencies it contemplates to occur at output levels that are lower than they were prior to the merger. Of course, efficiencies might be so substantial that post-merger output is higher, and prices lower, than at premerger levels. But in that case there is nothing to trade off -- both producers and consumers would benefit from the merger. The "tradeoff" model in Figure 1 comes into play when the merger produces an actual output reduction (from \(Q_1\) to \(Q_2\) in the figure) but also significant efficiency gains.

The most common efficiency is the economy of scale, or cost reductions that accrue as output is increased. The 1968 Merger Guidelines recognized economies of scale as the only relevant efficiency.\(^6\) Over some longer run even a merger that results in a short term output reduction might facilitate economies of scale. For example, two firms might operate inefficiently small plants with a capacity of 50 units each. The new post-merger firm might sell 80 units, and an 80 unit plant might be more efficient than a 50 unit plant. But the merger itself does not create the modern 80 unit plant. Rather it simply gives the post-merger firm two inefficiently small 50 unit plants. Perhaps one plant can be re-engineered and the other closed.

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\(^6\) See note __, supra.
but this does not follow naturally and it raises questions about whether the claimed efficiency was really merger specific.\textsuperscript{66} For example, perhaps either firm acting alone could have built a larger more efficient plant.

Other efficiencies might also accrue at reduced output levels. For example, the post-merger firm might reallocate production so that each plant is more specialized after the merger. So while attaining efficiencies at lower output levels is not impossible, it must be explained and proven. Other efficiencies, such as better management or better intellectual property, might be attained at lower output. But these tend to be things that either are not merger specific, because they can be acquired by other means, or else they are very difficult to prove. Still other efficiencies, such as the increased ability to compete in a larger market, might be plausible but appear to imply that output will be larger after the merger.\textsuperscript{67}

One possibility for efficiencies at lower output is the merger that shifts production from one firm's obsolete, high cost plant to the other firm's more modern lower cost plant. In the Heinz baby food case the district court found that the merger would permit Beech-Nut, which had an obsolete plant, to transfer production to merger partner Heinz, whose plant was modern but underutilized. Such a transfer of output might reduce variable costs of production even though aggregate output was lower than the output of the two firms prior to the merger.\textsuperscript{68}

One problem with this defense is that it proceeds from the premise that only one of the merging firms was inefficient, while the other was not. But the rationale for considering efficiencies is that the merger introduces a more efficient firm into the market. A merger between two firms that are both inefficient for reasons relating either to scale or technological obsolescence can accomplish that. But if one of the firms is already efficient then the merger does not add an efficient firm to the market; it only increases concentration.\textsuperscript{69} The rationale for approving such a merger is protection of the inefficiently small firm from losing out in a competitive struggle. In this case, for example, Heinz had an efficient but underutilized plant. The ordinary competitive outcome would be that Heinz would produce more, particularly given its lower variable costs. Beech-Nut might go out of business or it might figure out ways to modernize. But protecting an inefficient rival from competition is not the rationale for merger policy in general, or the efficiency defense in particular. Of course, if the more efficient firm were to acquire the less efficient firm and, after cost reductions, produce just as much as prior to the merger there would be no harm and thus no illegality.

\textsuperscript{66} On "merger specific" efficiencies, see discussion infra, text at notes __.
\textsuperscript{67} F.T.C. v. Freeman Hosp., 911 F.Supp. 1213, 1224 (W.D.Mo. 1995), aff'd, 69 F.3d 260 (8th Cir. 1995) (accepting defense that merging hospitals would be able to compete better at the regional level and would have less overhead and administrative duplication; Eighth Circuit denied the FTC's request for an injunction, mainly for failure to show relevant geographic market).
\textsuperscript{68} FTC v. H.J. Heinz Co., 246 F.3d 708 (D.C. Cir. 2001).
\textsuperscript{69} See 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶976b (4th ed. 2016).
The problem of efficiencies at lower output disappears under the consumer welfare standard, because the merger would be approved only if output were at least as high after the merger as it had been before. Assuming the merger were prima facie unlawful, the proponents would have to show that efficiencies were so substantial that output would be as high or higher subsequent to the merger, and consumer prices as low or lower.

A fourth problem with Williamson's model is also severe. Williamson assumed a market that was perfectly competitive prior to the merger but monopolized thereafter. Virtually no challenged mergers today fall into that territory. Most mergers attacked on coordination-increasing grounds occur in moderately concentrated markets where pre-merger prices are already substantially above marginal cost. The same thing is very likely true in unilateral effects cases involving product differentiated firms where the merger partners are reasonably close to one another in product space and most of the non-merging firms are more remote. In product differentiated markets where this is possible, premerger prices are almost never at marginal cost. When premerger prices are above the competitive level to begin with, the situation can depart quite far from Williamson's model, as Figure 2 illustrates.

Figure 2

Figure 2 shows the same market as Figure 1, with a price increase (P₁ to P₂) and output reduction (Q₁ to Q₂) of the same magnitude. The difference is that the price in Figure 2 is
already above marginal cost prior to the merger. In Figure 1 $P_1$ and $C_1$ are the same, while in Figure 2 $P_1$ is higher than $C_1$. This situations creates two notable differences from Figure 1. First, the loss of consumers' surplus that results from the merger is greater. Indeed, in the figure the loss is roughly three times as large as in Figure 1. Second, because output in Figure 2 was lower to begin with, given the higher prices prior to the merger, the efficiency gains are spread over a smaller output than in Figure 1. As a result, while $A_2$ is clearly larger than $A_1$ in Figure 1, in Figure 2 it is smaller.

The Figure 2 merger produces a much greater consumer loss per unit of output reduction. As a result a price increase of the same magnitude ($P_1$ to $P_2$ in both figures) produces larger consumer losses when the pre-merger price-cost ratio was larger to begin with. The consumer-welfare-based efficiency test in the Guidelines does not require that the post-merger price be competitive, however. It merely requires that the post-merger price be no higher than the premerger price. That means that the price reduction attributable to efficiencies must be at least large enough to offset the merger's propensity to increase prices when efficiencies are not taken into account.

The problem of pre-merger supra-competitive prices illustrated in Figure 2 has most of its traction under a general welfare test. In markets where premerger price/cost margins are already high, it takes a much larger efficiency gain to offset a price increase and output reduction of a given magnitude.

### Assessing Efficiency Claims

#### Burdens of Production and Proof

In a merger challenge the government has the burden of making out a prima facie case of anticompetitive effects, which under the consumer welfare test means that the merger threatens a price increase in at least one market. At that point the burden shifts to the defendant. This burden shifting framework is sometimes referred to as the "Baker Hughes" formulation, developed in that decision and later articulated by the D.C. Circuit in the *Heinz* case:

First the government must show that the merger would produce “a firm controlling an undue percentage share of the relevant market, and [would] result[ ] in a significant increase in the concentration of firms in that market.” Such a showing establishes a “presumption” that the merger will substantially lessen competition. To rebut the presumption, the defendants must produce evidence that “show[s] that the market-share statistics [give] an inaccurate account of the [merger's] probable effects on competition” in the relevant market. “If the defendant successfully rebuts the presumption [of illegality], the burden of producing additional evidence of anticompetitive effect shifts to
the government, and merges with the ultimate burden of persuasion, which remains with the
government at all times."70

This test as formulated in these decisions refers to mergers challenged on concentration-
increasing grounds, but the approach under unilateral effects analysis is similar.71

Several people have observed that courts require stricter proof of merger-generated
efficiencies than of predicted anticompetitive effects.72 That fact may seem odd in a system that
ordinarily places most of the litigation burden on plaintiffs, but in fact it is not. To a significant
extent evidence concerning predicted price effects relates to the market and to relatively soft
predictions about consumer behavior. By contrast, evidence of efficiencies typically relates to a
firm's own internal production and processes. As the Merger Guidelines observe, "much of the
information relating to efficiencies is uniquely in the possession of the merging firms."73
Further, information is assymetrical: firms almost always know more about their own internal
processes and the costs of changing them than any outsider, including the merger enforcement
agencies. Further, as developed below, even with this imbalance merger enforcement is under
deterrent.

70 FTC v. H.J. Heinz Co., 246 F.3d 708, 715 (D.C. Cir. 2001), quoting United States v. Baker Hughes,
Inc., 908 F.2d 981, 982-983 & n. 3 (D.C. Cir. 1990). See also Saint Alphonsus Med. Ctr.-Nampa Inc. v.
St. Luke's Health Sys., Ltd., 778 F.3d 775, 783 (9th Cir. 2015) (similar); In re Se. Milk Antitrust Litig.,
739 F.3d 262 (6th Cir. 2014) cert. denied, 135 S. Ct. 676 (2014) (similar, dicta); United States v.
833 F.Supp.2d 36 (D.D.C. 2011). See also FTC v. University Health, 938 F.2d 1206, 1218-1219 (11th
Cir. 1991):

The government usually makes a prima facie case by showing that the acquisition at issue would
concentrate the market. If the government makes this showing, a presumption of illegality arises.
To rebut this presumption, the defendant must produce evidence to show the picture of the market
inaccurate and the defendant may demonstrate unique economic circumstances that undermine
the predictive value of the government's statistics. 'If the defendant successfully rebuts the
presumption [of illegality], the burden of producing additional evidence of anticompetitive effect
shifts to the government.'" Some courts speak of a double shift: once the defendant meets the
burden of showing efficiencies the burden shifts back to the government, which is entitled to
present "additional evidence of anticompetitive effects." FTC v. University Health, 938 F.2d
1206, 1218-1219 (11th Cir. 1991).


72 Daniel A. Crane, Rethinking Merger Efficiencies, 110 MICH. L. REV. 347, 347-348 (2011) ("the
government is accorded greater evidentiary leniency in proving anticompetitive effects than the merging
parties are in proving offsetting"). See also in re Ardagh Group, S.A., 2014 WL 1493617 (FTC Apr. 11,
2014) (Wright, Com'r, dissenting) (protesting that "the burden facing the agency with respect to the
likelihood of anticompetitive effects should be in parity with that faced by the parties with respect to
efficiencies").

73 2010 Horizontal Merger Guidelines, supra note __, §10.
Price Effects of Marginal but Consummated Mergers

If merger policy is to be fact based, then one important question is how well the current evidentiary requirements are serving the goals of merger enforcement policy. If these requirements result in fairly routine condemnation of competitively harmless mergers then we should be seeking a correction. Empirical evidence of the effects of mergers on market prices is not yet as well developed as it should be. In 2007 the federally created Antitrust Modernization Commission published a call for more empirical work on the effect of merger decisions.\(^{74}\) Perhaps as a result, our image of post-merger firm performance is improving. If merger enforcement is operating as it should be, then mergers threatening price increases should be condemned and those that survive should prove harmless. The empirical evidence that we have, however, suggests that current merger policy tends to underestimate harm, overestimate efficiencies, or some combination of the two.

We must assume that firms making acquisitions are acting rationally. They know their own business better than the generalist government antitrust agencies do, particularly when the relevant information is specific to the firm(s) rather than the market as a whole. That is almost always the case of efficiency claims. Second, as profit-maximizing actors that are responsible to their shareholders, firms will usually make acquisitions if they anticipate profiting from them, and we should expect that they will perform due diligence in assessing the source of those profits. Not uncommonly, firms contemplating transactions will hire expert consultants to evaluate a transaction, looking for likely sources of profit.\(^{75}\)

The due diligence point is doubly relevant given that the overall track record of post-merger firm value and profit performance is quite troublesome. A large portion of acquisitions contribute little or nothing to the value of the merging firms, particularly the acquiring firm.\(^{76}\)


\(^{76}\)See BARBARA S. PETITT & KENNETH R. FERRIS, VALUATION FOR MERGERS AND ACQUISITIONS 10-12 (2d ed. 2013) (value of acquired firms go up in short term, while value of acquirer declines in both short and medium term); G.A. Jarrell, J.A. Brickley and J.M Netter, The Market for Corporate Control: the
Firms contemplating mergers are hardly wading into territory where victory is assured. As a result one should presume that firms will examine transactions very carefully before going ahead.

Assuming that post-merger market structure supports the inference, a firm that cannot convince itself that a merger will reduce costs or improve product quality must believe that a merger’s profits will come from post-acquisition price increases. The available data on post-merger product pricing following mergers in concentrated or product differentiated markets are not encouraging. Several studies have found that the returns to merging are higher as industries are more concentrated.77 Consummated mergers in highly concentrated markets subject to close government scrutiny tend to yield higher prices.78 In one FTC study whose results appear to be very robust, grocery store mergers in concentrated markets produced significant increases in product prices, while those in less concentrated markets tended to produce price decreases.79 Most studies of carefully scrutinized but eventually approved airline mergers indicate price increases, often substantial.80 The same thing is generally true of banking81 and health care.82

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80 John Kwoka and Evgenia Shumilkina, The Price Effect of eliminating Potential Competition: Evidence from an Airline Merger, 58 J. INDUS. ECON. 767 (2010) (examining USAir/Piedmont merger: large price effects where the two airlines were actual competitors; smaller but positive price effects where one airline was a potential competitor); E. Han Kim and Vijay Singal, Mergers and Market Power: Evidence from
Whether these mergers created significant offsetting efficiencies is hard to say, but in any event the magnitude of the efficiencies was not sufficient to offset the price increase. As a result they should have been challenged under the standards articulated in the 2010 Horizontal Merger Guidelines. Certainly no general case can be made that merger policy as we apply it today is over deterrent, either because prima facie cases are too easy to make or qualifying efficiencies too difficult to prove.

Of course, these studies do not, and could not, assess the price effects of mergers that were successfully challenged or abandoned. It seems highly unlikely, however, that the Agencies systematically challenge many harmless mergers while letting many harmful ones go through. While individual errors are possible, the consummated mergers reported in these studies must be regarded as more benign than those mergers that were never completed because of a successful government challenge.

One message suggested by this empirical data is that traditional concentration increasing merger analysis must be taken seriously. The HHI numbers in the 2010 Guidelines were revised upwards from those in previously Guidelines. Those promulgated between 1982 and 1992 identified an HHI of 1800 as "highly concentrated," while the 2010 have moved that number to 2500. One complaint about enforcement policy between 1992 and 2010 is that the Agencies did not really follow the Guidelines. They in fact challenged mergers only on concentration thresholds far higher than the Guidelines suggested. Whether the revision was justified on the basis of the empirical evidence we have is difficult to say, but both predictability interests in policy making as well as the historical record suggest that the 2010 Guidelines need to be enforced more literally than were the predecessors.

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Estimating Merger-Induced Variable Cost Reductions

The consumer welfare approach taken in the 2010 Horizontal Merger Guidelines requires not only that significant efficiencies be proven, but also that these be sufficiently passed on to consumers that the post-merger price is no higher than the pre-merger price. The main ingredients in computing pass through are the nature of the cost savings and the elasticity of demand facing the post-merger firm. Variable costs savings will show up in marginal cost and thus be calculated into the post-merger firm's prices. By contrast, fixed costs do not ordinarily affect the price and thus would not be passed through, at least in the short run. In practice the line between fixed and variable costs is fairly soft, however, depending on such factors as use depreciation and the length of the "run" that one is looking at. For example, over the long run increased investment in fixed cost infrastructure or IP rights could produce lower consumer prices, but these effects would not show up immediately. Empirically, there is some evidence that upward changes in costs are more readily passed through than downward changes, at least over the short run. Pass through is rarely 100%, but in the presence of some market power a certain percentage of variable cost savings should be passed on. By contrast, under perfect competition in an undifferentiated product, cost reductions resulting from efficiencies that accrue to a single firm or a small number of firms are not passed on. A competitive firm will increase its output but, facing a horizontal demand curve, has no incentive to reduce its price.

In computing the effects of downward changes in variable costs care must be taken that they relate properly to the predicted impact on overall costs. This is particularly true for manufactured products whose principal cost is raw materials, power, labor, or other inputs whose costs are not readily affected by the merger. For example, while raw materials are a variable cost, mergers rarely have a significant impact on acquisition costs. The Heinz case illustrates some of the problems. The defendants claimed that variable costs were roughly 43% lower in the acquiring firms modern facility, although the court found it to be much lower, more in the range of 20%. More importantly, however, were some other factors. First, the cost savings applied only to the production that was shifted from the obsolete plant. The production that was already from the more efficient plant enjoyed no further cost savings.

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84 On the problems in classifying costs as fixed or variable for antitrust purposes, see 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶740 (4th ed. 2015).
88 Id. at 721.
Second, variable cost savings almost never apply to all variable costs, and in many cases they may apply only to a fairly small percentage. For example, in the making of strained peas for baby food, both the peas and the processing are variable costs. However, the merger does nothing to change the market price of peas. To illustrate, suppose that the variable cost of producing a $100 batch of strained peas is $90 for raw materials (peas) and $10 for processing. A very substantial 20% in the cost of processing will reduce the $10 to $8, but it does nothing to the cost of the peas. As a result this 20% reduction in processing cost amounts to a 2% reduction in overall cost. The previously noted across-the-board assumptions of 10% cost reductions in first pass merger assumptions assume that overall variable costs decline as a result of the merger. That assumption is very likely highly optimistic across a wide variety of industries, depending on what percentage of variable costs are actually reduced by the more efficient reduction that the merger promises. Raw materials, labor, and utilities are all components of variable costs, but few mergers do anything to change the per unit cost of these inputs. Rather, merger-generated efficiencies enable production that uses fewer of them.

**Measurement Difficulties**

Assessing the overall impact of a merger subject to significant, evidence based efficiency claims is difficult. The 2010 Merger Guidelines suggest the difficulty by their highly general statement on "balancing" anticompetitive effects against claimed efficiencies:

The greater the potential adverse competitive effect of a merger, the greater must be the cognizable efficiencies, and the more they must be passed through to customers, for the Agencies to conclude that the merger will not have an anticompetitive effect in the relevant market. When the potential adverse competitive effect of a merger is likely to be particularly substantial, extraordinarily great cognizable efficiencies would be necessary to prevent the merger from being anticompetitive. In adhering to this approach, the Agencies are mindful that the antitrust laws give competition, not internal operational efficiency, primacy in protecting customers.

In the Agencies’ experience, efficiencies are most likely to make a difference in merger analysis when the likely adverse competitive effects, absent the efficiencies, are not great. Efficiencies almost never justify a merger to monopoly or near-monopoly. Just as adverse competitive effects can arise along multiple dimensions of conduct, such as pricing and new product development, so too can efficiencies operate along multiple dimensions. Similarly, purported efficiency claims based on lower prices can be undermined if they rest on reductions in product quality or variety that customers value.

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89 See Id. at 721; and 4A AREEDA & HOVENKAMP, ANTITRUST LAW, supra note __, ¶974b1.
90 See discussion supra, text at notes __.
91 2010 Horizontal Merger Guidelines, supra note __, §10.
The Guidelines contain nothing more precise relating the magnitude of required efficiencies to the threat level.

Assessing mergers under a consumer welfare test is simpler than assessing them under a general welfare test, at least until one gets to the problem of estimating pass through. Once the requirements for a prima facie case have been met, administering merger policy with an efficiency defense requires the challenger and the courts to find some way to consider both price effects and efficiency effects. Literal “balancing” of competitive harms against efficiency gains is virtually impossible. Balancing requires the fact finder to come up with cardinal (i.e., specific unit) measurements and then net them out against each other. Competitive harms and efficiency effects are rarely amenable to such a process. Rather, the Agencies and the courts employ a very rough scale to conclude that as the predicted price increase or likelihood of anticompetitive effects is larger, a showing of greater efficiencies will be required.

Under a general welfare test the fact finder must make cardinal assessments of harms and benefits. Analyzing a merger would require computation of the deadweight loss accruing to consumers, the magnitude of efficiency gains (cost savings per unit multiplied by the number of units of post-merger production), and then net these two numbers against one another. The merger is efficient, and thus lawful, if the efficiency gains outweigh the deadweight loss. Doing this requires information not merely about the price impact of the merger but also about the shape of the demand curve and price cost margins before and after the merger. For example, the mergers in Figure One and Figure Two above have the same output reduction and price increase, but consumer deadweight loss in Figure Two is greater than in Figure One because price cost margins are higher in Figure Two, both prior to and subsequent to the merger. Computing deadweight loss requires knowledge not only about the price cost margin but also about the shape of the demand curve in the region between the actual price and the competitive price.

By contrast, under a consumer welfare test one needs to know only whether the merger will cause output to go down and prices up – that is, whether there will be any increase in consumer deadweight loss at all. This requires information about the predicted price impact of the merger, offset by the efficiency reduction. The biggest difference between the two standards is that under a general welfare standard the magnitude of efficiencies will have to be traded against consumer welfare losses. By contrast, under a consumer welfare standard the price impact of efficiencies will have to be traded against any upward pressure on price imposed by post-merger changes in structure. That latter number is nearly always easier to determine.

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92 For an argument that false positives are less important than false negatives because price-increasing mergers cannot readily be corrected by other antitrust provisions such as §§1 or 2 of the Sherman Act, see Lawrence M. Frankel. The Flawed Institutional Design of U.S. Merger Review: Stacking the Deck Against Enforcement, 2008 Utah L. Rev. 159

93 See 4A AREEDA & HOVENKAMP, ANTITRUST LAW, supra note __, ¶976e (“‘Balancing’ implies an ability to assign a common unit of measurement to the two things being balanced, and determine which outweighs the other. Except in the clearest cases, this is simply not what courts are capable of doing.”).
Both approaches can produce both easy and hard cases. The easiest cases, of course, will be mergers in competitive markets or where entry is easy and there clearly could not be a durable price increase. But in those cases efficiencies need not be measured at all, because there is no prima facie case of illegality. At the other extreme will be highly threatening mergers where the evidence for proffered efficiencies is weak.

One complicating factor in merger analysis under a consumer welfare test is the pass-through requirement. Pass through considers the extent to which reduced costs are passed on to consumers, principally by lower prices, but conceivably by higher quality or improved services as well. Pass through is irrelevant under a general welfare test, and thus need not be computed. All we would care about is whether efficiency gains outweigh consumer welfare losses. The consumer welfare approach taken by the 2010 Merger Guidelines, however, requires that post-merger prices be no higher than pre-merger prices. Once the challenger makes out a prima case the burden shifts to the defendant to show both offsetting efficiencies and that a sufficient amount of the savings will be passed on to correct the price increase. Further, "the greater the potential adverse competitive effect of a merger, the greater must be the cognizable efficiencies, and the more they must be passed through to customers..."94 Initially this requirement was treated with a great deal of skepticism, mainly because it was thought to be too difficult to prove.95 Today techniques are being developed that permit at least an approximation of pass through.96

942010 HORIZONTAL MERGER GUIDELINES, supra note __, §10.
95Timothy J. Muris, The Government and Merger Efficiencies: Still Hostile After All These Years, 7 GEO. MASON L. REV. 729, 733 (1999) (arguing against rigid pass-on requirement); Robert Pitofsky, Proposals for Revised United States Merger Enforcement in a Global Economy, 81 GEO. L.J. 195, 207-208 (1993) (proof of pass-on requirement would be too difficult); Joseph F. Brodley, Proof of Efficiencies in Mergers and Joint Ventures, 64 ANTITRUST L.J. 575, 584 (1996) (agreeing with Pitofsky). See also Dennis A. Yao & Thomas N. Dahdouh, Information Problems in Merger Decision Making and Their Impact on Development of an Efficiencies Defense, 62 ANTITRUST L.J. 23, 41-43 (1993) (strict pass-on requirement “may foreclose any consideration of efficiencies because it is so difficult to establish and because it prevents consideration of large efficiencies if there is only some probability that such efficiencies will be passed on to consumers”); accord FTC, ANTICIPATING THE 21ST CENTURY: COMPETITION POLICY IN THE NEW HIGH-TECH MARKETPLACE, ch. 2 (1996).
"Merger Specific" Efficiencies, Important or Irrelevant?

The Merger Guidelines emphasize that efficiencies must be "merger specific" -- that is, the proponents of the merger must show that the efficiencies could not readily be attained otherwise than by the challenged merger. This element is critical under a general welfare test where the question is whether efficiencies serve to justify a merger that actually raises prices. If the same efficiencies could be created without the merger, then society would have the efficiency's social gains without the merger's welfare losses. Further, the best engine for producing efficiencies is competition. A merger might be a convenient way of achieving some cost savings, but often competition will work as well or better and leave a more competitive market structure.

But why must efficiencies be merger specific under the consumer welfare approach taken by the Merger Guidelines? The Guidelines require both that the efficiencies be of sufficient magnitude to reverse completely any price increase, and that the claimed efficiencies be merger specific. This approach is perplexing. First, if the efficiencies are not of sufficient magnitude to offset fully any propensity toward a price increase, then the efficiency defense will be rejected whether or not the claimed efficiencies are merger specific. However, if the efficiencies are in fact of sufficient magnitude to predict that the post-merger price will be no higher than the pre-merger price, then why do we care? Such a merger does not harm consumers, and as a result is not anticompetitive. Indeed, such a merger appears to be nearly a pure Pareto improvement: it benefits the merging parties by reducing their costs. It makes consumers no worse off or else benefits them. The most likely harm is to competitors of the post-merger firm, who must now compete against its reduced costs. In sum, if we consistently apply the consumer welfare approach that the Guidelines lay out, we should not care if the efficiencies are merger specific.

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97 See 2010 Horizontal Merger Guidelines, §10:

The Agencies credit only those efficiencies likely to be accomplished with the proposed merger and unlikely to be accomplished in the absence of either the proposed merger or another means having comparable anticompetitive effects. These are termed merger-specific efficiencies. Only alternatives that are practical in the business situation faced by the merging firms are considered in making this determination. The Agencies do not insist upon a less restrictive alternative that is merely theoretical.

The Guidelines add in a footnote:

The Agencies will not deem efficiencies to be merger-specific if they could be attained by practical alternatives that mitigate competitive concerns, such as divestiture or licensing. If a merger affects not whether but only when an efficiency would be achieved, only the timing advantage is a merger-specific efficiency.

See United States v. Bazaarvoice, Inc., 2014 WL 203966 (N.D. Cal. Jan. 8, 2014), where the court found that the defendants’ claimed defense that the merger would provide them with better quality marketing data were both conjectural and not merger specific, but also concluded that prices would rise. See also United States v. H&R Block, Inc., 833 F.Supp.2d 36 (D.D.C. 2011) (numerous claimed efficiencies including consolidation of debit card and other financial accounts neither verifiable or shown to be merger specific); FTC v. CCC Holdings, 605 F.Supp.2d 26 (D.D.C. 2009) (efficiency claim of increased innovation in the future rejected because not shown to be either verifiable or merger specific).
One possible answer is that if the efficiencies are attainable by some means other than merger, then the result may actually be lower prices and a consumer benefit. In that case consumers would be better off if the firm(s) in question attained their efficiencies by other means. While that might be factually true, this approach is difficult to reconcile with a statute that condemns mergers only if they may "substantially lessen" competition, and not merely because they fail to benefit competition as much as some alternative.98

For example, suppose that the government makes out a prima facie case of a merger injuring consumers by $4M from higher prices. The defendants are able to show an efficiency of $5M, more than $4M of which will be passed on. As a result consumers are no worse off under the merger. At that point the merger has been shown not to cause any competitive harm under a "substantially lessen competition" test, and it should not matter whether the efficiencies are merger specific. The challenger might say that the efficiencies could be attained by some other means and, without the merger, prices would fall even further. But that position is not justified by the language of Clayton Act §7. By contrast, if post-merger prices will be higher, then the efficiency defense will be rejected and once again it does not matter whether the efficiencies are merger specific.

Efficiencies Relating to Innovation and Intellectual Property Rights

The 2010 Horizontal Merger Guidelines statement on efficiencies include one and one half paragraphs on innovation efficiencies:

Other efficiencies, such as those relating to research and development, are potentially substantial but are generally less susceptible to verification and may be the result of anticompetitive output reductions. Yet others, such as those relating to procurement, management, or capital cost, are less likely to be merger-specific or substantial, or may not be cognizable for other reasons.

When evaluating the effects of a merger on innovation, the Agencies consider the ability of the merged firm to conduct research or development more effectively. Such efficiencies may spur innovation but not affect short-term pricing. The Agencies also consider the ability of the merged firm to appropriate a greater fraction of the benefits resulting from its innovations. Licensing and intellectual property conditions may be important to this enquiry, as they affect the ability of a firm to appropriate the benefits of its innovation. Research and development cost savings may be substantial and yet not be

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98 This is one reason that neither the Agencies and courts have largely abandoned the "actual potential entrant" doctrine of conglomerate mergers. Under it, a merger was condemned on the theory that if the merger partner had entered the market de novo the market would have been more competitive, but the merger served to preserve the status quo. See 5 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶1127-1131 (4th ed. 2016) (forthcoming)
cognizable efficiencies because they are difficult to verify or result from anticompetitive reductions in innovative activities.\footnote{2010 Horizontal Merger Guidelines, \textit{supra} note __, §10.}

The Guidelines do not mention whether the inefficiencies in these cases must apply to both firms or only one. It is relatively easy to see situations where one laggard firm can improve its efficiency results by piggy-backing on a more effective researcher. But in that case we are not adding an efficient firm to the market, but only protecting an inefficient firm from the competitive process.

Is it conceivable that two firms might each be in a disadvantaged position because of lack of innovation, but then overcome it by merger? Yes, but it is hard to see a situation in which such a gain would be merger specific.\footnote{See \textsc{Areeda & Hovenkamp, Antitrust Law}, \textit{supra} note __, ¶975g, which is severely skeptical.} Most obviously, the firms should cross license. Cross license agreements, particularly if they are nonexclusive, can give each firm access to the other's technology without necessarily impairing competition between the two firms at all.

Research facilities may be a different matter, and could resemble production facilities more than R&D as such. For example, two firms may each have inadequate research facilities that could profit from being enlarged. Here, as for production facilities, a merger doesn't create a single efficient facility but rather leaves the firm with two inefficiently small ones. However, the merger might enable the firm to specialize its research, just as a merger of production facilities might enable increased plant specialization. If one facility takes research of a given type while the other takes the remainder, each might be able to operate at a more efficient scale.

Most efficiency claims related to larger customer bases for intellectual property rights should be rejected. For example, in \textit{Oracle}, which rejected the merger challenge on other grounds, the court also rejected the argument that a merger of two software rivals would give it a larger customer base over which to spread the results of its R & D.\footnote{United States v. Oracle Corp., 331 F. Supp. 2d 1098, 1173-1175 (N.D. Cal. 2004).} The court did not reject the argument on principle, but it found inadequate support in the record. In \textit{Heinz}, the D.C. Circuit found that "recipe consolidation" that might occur when two producers of baby food merged was not merger specific.\footnote{FTC v. H.J. Heinz Co., 246 F.3d 708, 721-722 (D.C. Cir. 2001).} Heinz claimed that while merger partner Beech-Nut had an outmoded an inferior production facility, it had superior baby food recipes.

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\item[\footnote{2010 Horizontal Merger Guidelines, \textit{supra} note __, §10.}] See \textsc{Areeda & Hovenkamp, Antitrust Law}, \textit{supra} note __, ¶975g, which is severely skeptical.
\item[\footnote{United States v. Oracle Corp., 331 F. Supp. 2d 1098, 1173-1175 (N.D. Cal. 2004).}] The court did not reject the argument on principle, but it found inadequate support in the record. In \textit{Heinz}, the D.C. Circuit found that "recipe consolidation" that might occur when two producers of baby food merged was not merger specific.
\item[\footnote{FTC v. H.J. Heinz Co., 246 F.3d 708, 721-722 (D.C. Cir. 2001).}] As the court observed: the district court never explained why Heinz could not achieve the kind of efficiencies urged without merger. As noted, the principal merger benefit asserted for Heinz is the acquisition of Beech-Nut's better recipes, which will allegedly make its product more attractive and permit expanded sales at prices lower than those charged by Beech-Nut, which produces at an inefficient plant. Yet, neither the district court nor the appellees addressed the question whether Heinz could obtain the benefit of better recipes by investing more money in product
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One problem with all of these arguments about IP sharing is how to limit them. Combining all of the world's word processing programs, tax programs, recipes, or other competing commercial programs would enlarge the customer base, right up to the point that one firm controlled 100% of the market. One could say the same thing about fast food fried chicken or ice cream. This is so because if one ignores product and service differentiation, IP rights are natural monopolies. Once the first copy has been created, additional copies cost almost nothing.

Of course, that is where the rub comes in. The reason that all of the world's software entertainment companies do not jointly produce the same game, is that customers appreciate product variety just as they appreciate lower cost. It must be remembered that these "enlarged customer base" arguments are to be treated only after we made out a prima facie case against a merger. In most of these cases product differentiation preserves at least imperfect competition, and economies of scale brought about by a merger would eliminate the product differentiation.

For that reason once a prima facie case for a price-increasing merger has been made out, it is probably best to reject any argument that sharing of intellectual property rights is efficient because it enlarges the base over which sharing occurs. The one exception might be something like an electronic medical record system, where the interest in product differentiation is very likely not substantial. For example, the St. Luke's decision rejected the merging firms' defense that the merger would permit the firm to have access to Epic, an electronic medical record system that St. Lukes already had but the merger partner did not.103

**Conclusion**

Merger analysis today depends more on economic models and simulations than at any time in our history. That development is both good and important, but one must not forget that most judges have only a limited capacity to address the strengths and weaknesses of technical models. Further, the case law of mergers is descriptively thick and provides many alternative accounts of competition and business choices. This is a good thing as well, because ultimately development and promotion—say, by an amount less than the amount Heinz would spend to acquire Beech-Nut. At oral argument, Heinz's counsel agreed that the taste of Heinz's products was not so bad that no amount of money could improve the brand's consumer appeal. That being the case, the question is how much Heinz would have to spend to make its product equivalent to the Beech-Nut product and hence whether Heinz could achieve the efficiencies of merger without eliminating Beech-Nut as a competitor. The district court, however, undertook no inquiry in this regard. In short, the district court failed to make the kind of factual determinations necessary to render the appellees' efficiency defense sufficiently concrete to offset the FTC's prima facie showing.

the legal analysis has to fit the facts. The result that this creates is what appears to be heavy reliance on models in order to make early decisions for second requests and also in the expert analysis that goes into preparation for litigation. Once judges write their opinions, however, the accounts become descriptively thick.

In the final analysis the effectiveness of merger policy depends on results rather than any particular combination of analytic models and descriptively rich stories. Although more empirical work needs to be done, what we have so far suggests that current merger policy if anything underestimates competitive harm, exaggerates passed-on efficiencies, or some combination of both.

Because evidence of efficiencies has almost never succeeded in rebutting an accepted prima facie case of illegality, this creates an inference that the fault lies with the prima facie case, not with the efficiency defense. It is, if anything, too generous to the merging parties. This might give reason to reconsider Judge Posner's conclusion that the problem of merger-specific proof of efficiencies is intractable and should be abandoned. The one thing it does not do, however, is suggest that we need to make defendants' burdens lighter. Not, at least, until there is evidence that too many anticompetitive mergers are being condemned, and that is hardly where we are right now.