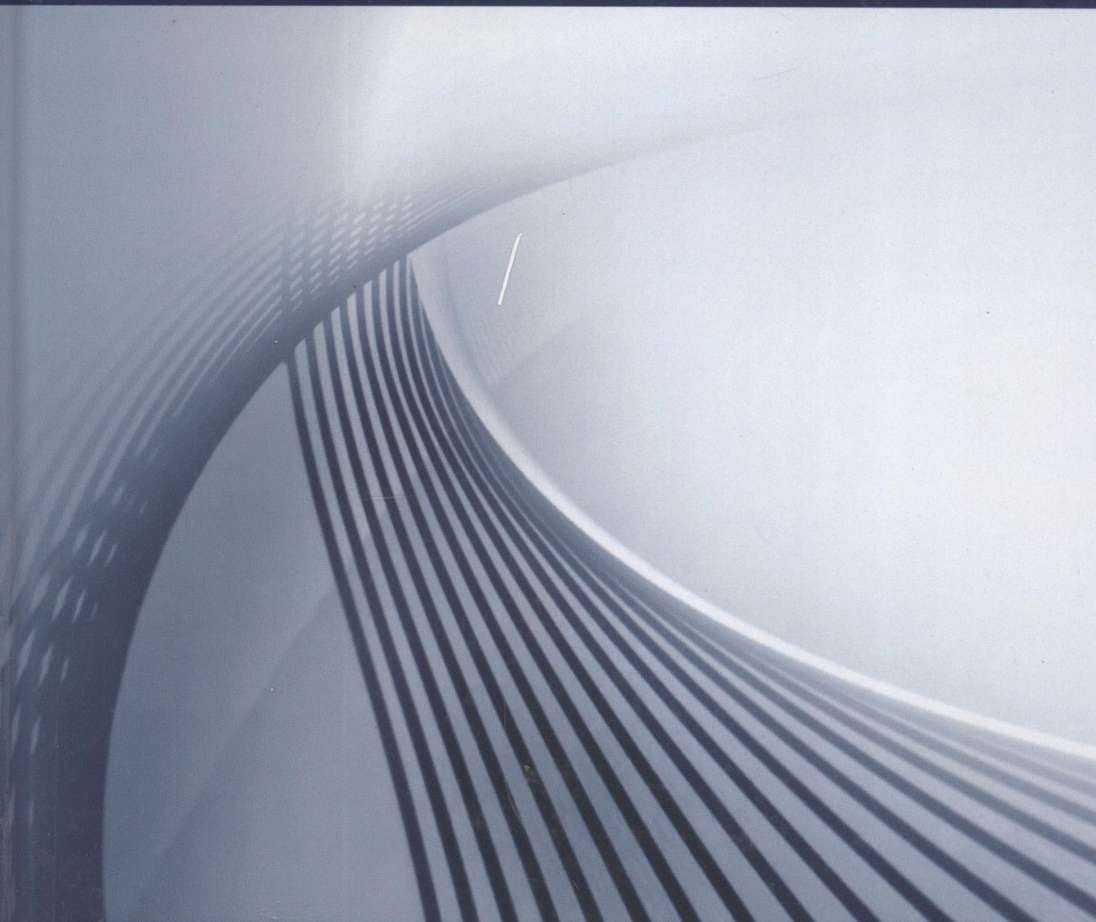




# Research Handbook on the Economics of Antitrust Law

Edited by

**Einer Elhauge**



RESEARCH HANDBOOKS IN LAW AND ECONOMICS

Series Editors: **Richard A. Posner** and **Francesco Parisi**

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*Edited by*

Einer Elhauge

*Harvard Law School, USA*



RESEARCH HANDBOOKS IN LAW AND ECONOMICS

**Edward Elgar**

Cheltenham, UK • Northampton, MA, USA

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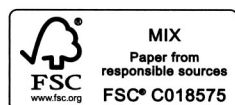
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# RESEARCH HANDBOOK ON THE ECONOMICS OF ANTITRUST LAW

## RESEARCH HANDBOOKS IN LAW AND ECONOMICS

**Series Editors:** Richard A. Posner, *Judge, United States Court of Appeals for the Seventh Circuit and Senior Lecturer, University of Chicago Law School, USA* and Francesco Parisi, *Oppenheimer Wolff and Donnelly Professor of Law, University of Minnesota, USA and Professor of Economics, University of Bologna, Italy*

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Research Handbook on the Economics of Antitrust Law  
*Edited by Einer Elhauge*

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## Abbreviations

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AAC	average avoidable cost
AMC	Antitrust Modernization Commission (US)
AVC	average variable cost
DOJ	Department of Justice (US)
FTC	Federal Trade Commission (US)
ICN	International Competition Network
IMF	International Monetary Fund
IP	intellectual property
LCC	low cost carrier
MC	marginal cost
MNC	multinational corporation
MR	marginal revenue
NTB	nontariff barrier
OECD	Organisation for Economic Co-operation and Development
OEM	original equipment manufacturer
OFT	Office of Fair Trading (UK)
PD	prisoner's dilemma
SSNIP	small but significant nontransitory increase in price
UNCTAD	United Nations Conference on Trade and Development
UPP	upward pricing pressure
WTO	World Trade Organization

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# 1 Introduction and overview to current issues in antitrust economics

*Einer Elhauge*

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Although economic analysis of law is increasingly important in many legal fields, perhaps no field of law is as dominated by economics as antitrust law. This no doubt reflects a confluence of factors. First, serious economic analysis of law really began with antitrust law, so economic analysis into antitrust issues has had time to go deeper and wider than economic analysis of other legal fields. Second, so much of standard microeconomics is directly relevant, given that antitrust involves regulating market competition. Third, the courts and enforcement agencies have grounded antitrust legal doctrines explicitly in concepts of antitrust economics. Fourth, because of the last factor, antitrust law creates a series of issues on which expert testimony on antitrust economics is relevant, meaning that every antitrust case of significance has at least one (often more) testifying expert on antitrust economics on each side. Antitrust law is thus unusual not only in the extent to which it turns on economics, but also in the extent to which that economics is vigorously debated in each case.

One might mistakenly think that such a long tradition would mean that there would be little new to say about antitrust economics. Yet antitrust economics is surprisingly dynamic and changing. In part, this is because new decisions or legal developments, often in response to old economic developments, tend to raise new economic issues. In part, it is because the continued testing of economic logic in adversarial economic testimony leads to continued self-reflection.

Given the rich literature in antitrust economics, this handbook does not purport to provide an exhaustive overview of all it has to tell us. This handbook focuses on those areas of antitrust economics that are most in flux because of new developments in law or the economics literature.

## PART I MERGERS AND MARKET DEFINITION

Perhaps one of the most important recent developments is the promulgation of the 2010 US Horizontal Merger Guidelines. The new guidelines are notable in their increased emphasis on unilateral effects theory, their de-emphasis of market definition, and their inclusion of mergers that eliminate potential competition (which were previously classified as non-horizontal). Part I of this handbook includes a chapter on each of these three developments, illuminating the relevant economic issues.

*Chapter 2 – Unilateral Effects Under Modern Merger Analysis.* A merger is said to have unilateral effects when it reduces the incentives of the merged firm to compete aggressively, holding constant the strategies of non-merging rivals. Jon Baker and David Reitman's chapter provides a timely assessment of how mergers can produce adverse

unilateral effects and what the best models are for assessing the likelihood and magnitude of unilateral effects, focusing on mergers in differentiated product markets. In differentiated markets, mergers can create unilateral effects because they allow the merged firm to recapture the profits they would otherwise lose to each other by raising prices, thus increasing their profit-maximizing price. A complementary explanation is that mergers can create unilateral effects by removing the competitive response of an important rival that would otherwise increase firm-specific demand elasticity. Baker and Reitman note that market shares may bear no relationship to such unilateral effects.

Baker and Reitman explore various simple models that can provide a quick preliminary read on likely unilateral effects with relatively light data requirements. They first address the Upward Pricing Pressure model proposed by Carl Shapiro and Joe Farrell, the Chief Economists for the Department of Justice and Federal Trade Commission, which is now included in the 2010 US Merger Guidelines. This model uses the diversion ratio, which is the fraction of customers who would switch from firm 1 to firm 2 in response to a firm 1 price increase. The model calculates that the recaptured profit equals the diversion ratio times the pre-merger profit margin on firm 2's product, and then observes that this recaptured profit has the same impact on firm 1's pricing as an increase in its marginal cost. The reason is that, after the merger, each successful sale of the firm 1 product now has the additional cost of losing that diverted profit on firm 2's product. Thus, such a merger will create upward pricing pressure when the recaptured profit is greater than any cost reduction produced by merger efficiencies. They propose using a standard deduction of some percentage of pre-merger costs. A related model, Compensating Cost Reduction, is similar to Upward Pricing Pressure, but uses the actual expected cost reduction rather than a standard deduction.

Baker and Reitman then address two other simple models. Critical Loss Analysis asks whether, given the demand elasticity for the merged firm's product and its pre-merger profit margin, the merged firm could profitably impose a small but significant nontransitory increase in price (SSNIP). Simple Price Effect models instead project merger price effects using the marketwide elasticity and an assumption that the diversion ratio is proportional to the market share of each brand. As Baker and Reitman observe, this assumption underestimates price effects if the merged products are relatively close substitutes and overestimates them if the merged products are relatively distant.

These simple models can reach decisions with relatively light data requirements that are more accurate than those one would reach using market definition and market concentration presumptions. However, the simple models can reach conclusions that conflict with each other. If the existing profit margins are high, the Upward Pricing Pressure model is more likely to conclude a merger is anticompetitive and Critical Loss Analysis is less likely to do so.

Further, the simple models sometimes deviate from the predictions reached using more complicated merger simulation models, which estimate demand functions for the differentiated products and parameters on costs and oligopoly behavior and then solve the merged firm's price-maximization decision. Assuming the merging firms have the same diversion ratios and profit margins, have constant costs unaltered by the merger, and do not engage in oligopolistic coordination, a Shapiro model shows the percentage price increase equals the diversion ratio times the profit margin divided by (with linear demand) two times the nondiversion ratio or (with constant elasticity) the nondiversion

ratio minus the profit margin. More complicated models can quantify the degree of uncertainty in price predictions and take into account any merger-specific efficiencies. Merger simulations can also take into account rival reactions and cases where the merging brands are not the closest substitutes for each other.

Baker and Reitman also discuss measurement issues, as well as the possibilities that one might extend these models to take into account various possibilities excluded in standard unilateral effects models. First, they consider the possibility that firms might reposition their products post-merger. Although the Guidelines suggest this would only reduce predicted prices, they note that repositioning by the merged firm could increase price effects. Second, they consider the possibility that firms might price more strategically, noting that while such strategies are difficult to model *a priori*, they can help address deviations between the simple models and available evidence. Third, they consider bidding markets, noting that the unilateral effects models can be extended to them by assuming firms pick the bid they think most optimal given the need to beat the second best bid, which is sometimes the one offered by the merger partner. Fourth, they consider increasing marginal costs or capacity limits. Although such factors are usually assumed to increase price effects because they reduce the price constraint imposed by nonmerging rivals, they observe these factors can sometimes also reduce the merging firm's incentives to cut output post-merger, making the effects more mixed. Fifth, they consider the extent to which any merger cost-savings are passed on to customers.

Finally, Baker and Reitman observe that the most reliable empirical study of five approved mergers that seemed likely to have presented a close call for US antitrust agencies found that four of the five mergers increased prices by 3–7%. This may suggest the US agencies are being a bit too lax, unless efficiencies take longer to kick in. The increasing access to electronic sales data heralds more such retrospective merger studies in the future, refining our understanding about how best to analyse unilateral effects mergers.

*Chapter 3 – Do We Need Market Definition?* David Evans' chapter considers the current controversy about the need for market definition. As he notes, under the 2010 US Guidelines, one does not need market definition and the chief economists of the two US antitrust agencies have proposed abandoning it in merger analysis in unilateral effects cases.

Evans provides many arguments for lightening up on the emphasis on market definition. He points out that market definition is one of the few areas not supported by economics. A major problem is that product heterogeneity is the norm, not the exception, so that markets have no sharp boundaries. It thus often makes little sense to talk about 'the' market. Further, he observes that market share is not a reliable indicator of market power because the same market share can indicate much or little market power depending on the market elasticity and rival elasticity of supply. Moreover, he notes that, if we have the elasticity information necessary to do the SSNIP test that is needed to properly define a market, then we have enough information to directly assess the unilateral effects of a merger on price.

Nonetheless, Evans also argues that we should lighten up on the issue generally. In particular, while market definition should be less determinative, he argues that courts should continue to define markets because doing so provides information on competitive constraints. However, courts should not draw hard boundaries or make strong inferences about market power. Instead, as he would use it, market definition would consist more of a narrative about the potential competitive constraints.

This promises to be a hot issue in years to come. Although some cases suggest a need for market definition, many other cases have held that market definition is unnecessary when there is direct evidence of market power or anticompetitive effects.<sup>1</sup> Moreover, an increasing body of economic literature has indicated that market definition is not only unnecessary, but actually unnecessarily complicates and obscures the analysis, and thus should affirmatively be abandoned. I myself have argued that market definition should generally be abandoned on these grounds, other than in: (a) monopolization or exclusionary conduct cases, where market share may bear on whether a firm is a unitary actor who can exploit buyer collective action problems; or (b) oligopolistic coordination cases, where market definition may indicate whether a firm has few enough rivals to make coordination feasible.<sup>2</sup> A recent influential article by Professors Farrell and Shapiro argues that market definition should be abandoned just for mergers in differentiated markets.<sup>3</sup> Finally, a just-published article by Professor Kaplow takes the even more sweeping position that market definition should be abandoned in all antitrust cases.<sup>4</sup>

Evans' theory that market definition might still provide a useful narrative about potential competitive restraints seems to provide the best defense for keeping market definition. The more critical literature effectively responds that elasticities or diversion ratios would give us better and more precise information on competitive constraints, at least in some categories of cases. Still, it can be difficult to carry a matrix of elasticities or diversion ratios around in one's head when thinking about cases, especially in cases that involve the interaction of multiple market levels. For some forms of analytical analysis, it may be useful to exclude firms who, given those elasticities or diversion ratios, impose a weak enough competitive constraint that they are unlikely to change the analysis. Or at least one might want to do so for working purposes, as long as one then tests the ultimate conclusion against the possibility that their more marginal competitive constraint might matter. I would expect this debate to play out in the upcoming years.

*Chapter 4 – Modern Analysis of Mergers that Eliminate Potential Competition.* The 2010 US Horizontal Merger Guidelines are the first revisions since 1982 to update analysis of mergers involving potential competitors. It is thus particularly timely to address the antitrust analysis of mergers that may raise potential competition issues, which is the topic of John Kwoka's chapter. Whereas older versions classified mergers involving potential competitors as non-horizontal, the 2010 Guidelines call them horizontal.

Kwoka reviews the predicted market results with two firms under various standard

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<sup>1</sup> *FTC v. Indiana Federation of Dentists*, 476 U.S. 447, 460 (1986) (direct proof of anticompetitive effects obviates the need to prove market definition or power); *Re/Max International v. Realty One*, 173 F.3d 995, 1018 (6th Cir. 1999) (collecting cases holding that direct proof of market power obviates need to define markets); P. AREEDA, H. HOVENKAMP, and J.L. SOLOW, *IIB ANTITRUST LAW* 108 (3rd ed. 2007) (same).

<sup>2</sup> E. Elhauge and D. Geradin, *Global Antitrust Law and Economics* 293–5 (Foundation Press, 2007); E. Elhauge and D. Geradin, *Global Antitrust Law and Economics* 316–18 (2d ed., Foundation Press, 2011).

<sup>3</sup> J. Farrell and C. Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E.J. THEORETICAL ECON. ISS. 1 (Policies and Perspectives), Article 9 (2010) (in differentiated markets, proving price effects directly is simpler and more accurate than market definition).

<sup>4</sup> L. Kaplow, *Why (Ever) Define Markets?*, 124 HARVARD L. REV. 437 (2010).

models, assuming a homogeneous product and two identical firms. He shows that the Stackelberg leadership model, coupled with an assumption about the fixed costs of entry, allows an incumbent to set the output that it knows will deter entry. He offers formulas for calculating whether such entry deterrence is profitable, and to measure the increase in inefficiency and consumer harm that results. He then compares these formulas to the monopoly results in order to analyse the effects of a merger with a potential competitor, assuming only one potential entrant exists.

Kwoka finds that in each case a merger that fully compensates the potential competitor for the profits it could have earned from entry is profitable to the incumbent. He also derives formulas for calculating the increase in incumbent profits, inefficiency, and consumer harm that results from merging with a potential competitor. The harm is bigger the more competitive the market would have been without the merger. In the case of Stackelberg leadership, the incumbent would (without the merger) be setting output to deter entry, so the merger eliminates perceived potential competition rather than actual potential competition. He shows that mergers that eliminate perceived potential competition create smaller increases in profits, inefficiency, and consumer harm, consistent with intuition and empirical findings.

Kwoka then notes that, if we relax the assumption that only one potential entrant exists, the other potential entrants may offer enough of a competitive constraint to eliminate any harm from the merger. Also, if we alter assumptions to assume the entrant has higher per-unit costs than the incumbent, eliminating the entrant by merger is less profitable. Finally, if we assume a differentiated market, then one should analyse the merger like a merger between actual competitors, but the analysis is difficult because there is no actual diversion ratio so a projected diversion ratio would have to be estimated.

Kwoka also reports an empirical study finding that an airline merger increased prices by 10% when it eliminated an existing competitor and by 6% when it eliminated a potential competitor. Other empirical studies focus on the market effects of each additional potential entrant, a measurement that Kwoka points out reflects the *average* effect of a potential entrant and thus is likely to underestimate the effect of a merger, which is likely to focus on the *most* constraining potential entrant. Nonetheless these empirical studies have found statistically significant effects. One study found that each additional competitor in an airline market lowers prices by 4% and each additional potential competitor reduces prices by 1.4%. Other studies have replicated this conclusion, finding each additional potential entrant reduces prices by 0.25–2%, which is one-third to one-eighth of the effect they find for each additional actual competitor. Some studies find a particularly strong effect if the potential entrant is Southwest, which decreases prices by 12–33% if it is a potential entrant and by 46% if it is an actual competitor. Other studies have found that potential entrants significantly constrain prices in markets for railroads and pharmaceuticals. In cable television markets, potential entrants interestingly do not affect prices but instead affect quality, leading incumbents to offer more channels.

Kwoka thus concludes that, although enforcement against potential competition mergers declined from an earlier period, the theoretical and empirical literature indicates that mergers that eliminate potential competitors can have significant anticompetitive effects, even though those effects are less than those of mergers that eliminate existing competitors. He thus applauds the fact that the 2010 US Merger Guidelines include potential competition mergers in their analysis, and recognize that they can have



significant anticompetitive effects, which he concludes will help elevate the importance of these issues in the future.

## PART II AGREEMENTS AND UNILATERAL CONDUCT

This handbook next moves on to consider various hot topics in the antitrust assessment of agreements and unilateral conduct. Some of these issues are hot because they involve conflicts in law among cases within the United States or between the United States and the EU and other nations. Other issues are hot because they involve issues that have been newly raised by recent Supreme Court decisions and cases.

*Chapter 5 – The Recent Economic Literature on Tying, Bundled Discounts, and Loyalty Discounts.* Probably the area of antitrust law and economics that is currently most contested is tying, bundled discounts, and loyalty discounts. A slew of recent cases in the United States have adopted diverging standards from each other and from EU cases.<sup>5</sup> It is thus particularly timely to have Nicholas Economides' chapter unpacking the findings of the economic literature.

Economides begins by clarifying the oft-neglected distinctions between fixed ratio ties, requirements ties, and volume-based ties, the parallel ones between fixed ratio bundled discounts, bundled loyalty discounts, and bundled volume-based discounts, and the distinction between loyalty commitments and conditions. He further observes that any nominal bundled or loyalty 'discount' can really be a penalty if the noncompliant price is set above the but-for price that would prevail without the program.

Economides then rebuts the single monopoly theory for such tying and bundling because they can extract consumer surplus through intra-product price discrimination, intra-consumer price discrimination, or inter-product price discrimination. Further, they can foreclose a substantial share of the tied market in a way that increases tied or tying market power.

Moving on to single-product loyalty discounts, he finds that all-units discounts are more problematic than incremental unit discounts. In particular, he finds that loyalty discounts on all-units can be equivalent to bundling incontestable and contestable demands. He also finds that share-based or individualized discounts are much more problematic than fixed volume-based discounts because the former can extract all consumer surplus and be tailored to exclude rivals.

Economides also rebuts the profit-sacrifice test, finding that no profit sacrifice is necessary to utilize these strategies is an anticompetitive way. The main reason is that buyers have a prisoner's dilemma that makes them willing to accept anticompetitive ties, bundled discounts, or loyalty discounts, as long as they get some trivial individual discount from the noncompliant price, even if the result is that collectively all buyers are harmed. Because no profit sacrifice is required, Economides concludes that the Antitrust Modernization Commission was mistaken to recommend requiring proof that a profit sacrifice was recouped.

Economides also demonstrates various problems with using cost-based tests to assess

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<sup>5</sup> Elhauge and Geradin, *supra* note 2, at 625–90 (2d ed).