

Antitrust Insights

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From the Editor

Can it be true that economic analysis is the reason why the quality of damage estimation in antitrust cases is generally high? If so, what distinguishes the economic approach from other ways of determining damages? And what accounts for the times when antitrust damages are done badly?

These are interesting questions, and in this issue of *Antitrust Insights*, Richard Rapp, a Special Consultant in NERA's office in New York City, considers the centrality of economics in solving antitrust problems, including damages, and the difference between economics-based expert testimony and "connoisseur" testimony. Recalling the mistakes that sometimes spoil antitrust damage calculations, Dick reminds us that the best analyses are based on theories of competitive harm that are consistent with case facts and benchmarks that are derived from realistic models of competitive pricing.

Dick served as President of NERA from 1988 through 2005. He specializes in the economics of antitrust, intellectual property, and damages estimation in complex commercial litigation. Prior to joining NERA, Dick was an Associate Professor at the State University of New York at Stony Brook and an award-winning author of books and articles on trade rivalry and economic decline.

I hope you enjoy this issue.

—Lawrence Wu, Editor

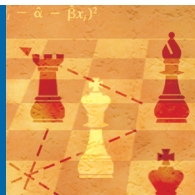
The Economic Approach to Antitrust Damages: Learning from Two Nobel Laureates and Three Common Mistakes

Richard T. Rapp*

In the antitrust arena, damage studies have long since moved away from simple accounting exercises to more complex economic analyses of consumer and firm behavior. This reflects not only the availability of better data and tools, but also more refined economic thinking and analysis. To help describe the key elements of a good antitrust damages analysis—the things that are done right—I will turn to the contributions of two great economic thinkers for some Nobel-quality advice, and I will highlight three commonly-made errors to watch out for, even in the most technically adept damage studies.

The Economic Approach to Antitrust Damage Analysis

The essence of any antitrust analysis is to understand how a commercial market works. This includes how the incremental cost of sellers and the substitution possibilities of buyers, along with other influences, determine price, output, and profit. Because of this focus on understanding markets, economic principles are central to a competent analysis of damages. Naturally, in such a setting, the work of expert economists is critical. Unlike others who are often called to testify about damages in other settings, economists consider the actions that firms take to create value and the market forces that can diminish that value quickly.



Although damage analysis is closely related to solving problems in valuation, the economic approach is not based on ad hoc valuation rules. Instead, the economic approach is based on scientific inquiry and hypotheses that are testable. It also is an approach that avoids inapt, but handy, rules of thumb, or an unnecessary reliance on benchmarks that are not very good, but easily found.

In a useful article titled “Expert Witnesses, Adversarial Bias, and the (Partial) Failure of the *Daubert* Revolution,”¹ David Bernstein uses the term “connoisseur testimony” to distinguish testimony whose primary basis is the experience and training of the expert from scientific and related testimony that relies upon recourse to theory and measurement (i.e., scientific explanation). This distinction is at the heart of the quality gap between damages testimony delivered by economists in antitrust trials and damages testimony delivered by experts whose methodology is not subject to scientific testing and replication. Indeed, scientific explanation is what makes antitrust damages more reliable and bad work more easily uncovered.

This brings us to two Nobel Prizes in damages. (Well, not really. No one has ever received a Nobel for that.) But to understand some of what is right and wrong with antitrust damages—or, for that matter, damage estimation of any sort—the work of two Nobel economists calls for attention.

Robert Fogel and the Need to Construct the Correct Counterfactual

Robert Fogel is one of the most creative contemporary economic historians in the profession, a 1993 Nobel Laureate in economics, and a student, among many other things, of the contribution of railroads to American economic growth. In the early 1960s, Dr. Fogel was wrestling with what seemed like a non-question in economic history: were railroads indispensable contributors to US economic growth and social welfare in the age of the westward expansion in the 19th century? By 1890, railroads carried 80 percent of freight in the US and 60 percent of all agricultural produce came to market by rail. During the era of the westward expansion, railroad lines extended themselves across the continent to the Pacific. Total track mileage in the region west of the Mississippi grew from 2,000 miles to over 72,000 miles between 1860 and 1890 as the population in that region increased fourfold. Could anyone doubt the crucial contribution of the growth of the railroads to 19th century American economic growth and expansion? Here is what Dr. Fogel found:

“[D]espite its dramatically rapid and massive growth over a period of a half century, despite its eventual ubiquity in inland transportation, despite its devouring appetite for capital, despite its power to determine the outcome of commercial (and sometimes political) competition, the railroad did not make an overwhelming contribution to the production potential of the economy.”²

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Europe, the Americas, Asia, Australia and Oceania, and Africa. To view the latest editions or to receive our newsletters each time they are published, click here: www.nera.com/newsletters.asp.

$$\frac{[\theta(1-p)n_0/(n_s-1)n_s]}{n_0/n_s}$$

$$T_2 = \frac{Q^2/G}{Q_2/(N-K_1-2G)}$$

How did Dr. Fogel arrive at that conclusion? He did two things right instead of just one: he paid attention to what happened in the *actual world*, described above, and more importantly, he constructed the correct *counterfactual*, which is what we in the damage estimation business call the “but-for world.” To answer his original question correctly, Dr. Fogel needed to answer an antecedent question: “Had there been no railroads, what would we have had instead and how would that have worked?” The answers Dr. Fogel found using econometric modeling were:

- First, that an expanded canal system would have brought all but seven percent of agricultural land to within 40 miles of a navigable waterway.
- Second, that roadway improvements, along with the expanded canal network, would have brought all but four percent of agricultural land within the reach of distant markets.
- Consequently, he estimated that the increase in gross domestic product (GDP) from railroads, relative to the most likely hypothetical alternative, was no more than three percent.

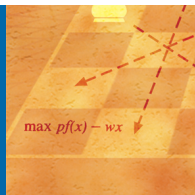
The moral of this story is that a good damages analysis, like good economic history, depends upon constructing the correct counterfactual and solving accurately for the value between that but-for world and that of the actual state of affairs. The use of the correct counterfactuals, including the preservation of a sharp distinction between actual and but-for scenarios and the skillful use of econometric methods, distinguishes what is (often, if not always) right about antitrust damages.

Daniel Kahneman and the Importance of Framing in Determining Outcomes

I now turn to the lessons that can be learned from the 2002 Nobel Laureate in economics, Daniel Kahneman. Dr. Kahneman was not trained as an economist. His field was psychology and, along with the late Amos Tversky, he first made the connection between the rationality assumption in economics and the defects and biases in reasoning from which we all suffer. This leads me to the subject of what sometimes goes wrong in analyses of antitrust damages.

Dr. Kahneman and Dr. Tversky’s research yielded a number of key insights, including the power of framing.³ They found that, when making choices, even rational people are strongly affected by the manner in which the problem is presented. For example, I will pay the full sticker price (say, \$20,000), if I must, for a car that I know to be much in demand. But you can’t make me fork over the same \$20,000 for the same car if the sticker price is \$18,500 and the dealer says, “We’re surcharging this one \$1,500!” That would be, of course, unfair! Price-gouging even! On the other hand, I would be much keener to buy if the sticker price was \$21,000 and I thought I was getting a \$1,000 break. In theory, framing shouldn’t matter—\$20,000 is \$20,000 is \$20,000 no matter how you frame it—but it does.

The use of the correct counterfactuals, including the preservation of a sharp distinction between actual and but-for scenarios and the skillful use of econometric methods, distinguishes what is (often, if not always) right about antitrust damages.



Preserving the generally high quality of antitrust damage analysis requires paying careful attention to the distinction between fact and counterfactual (actual and but-for), and by steering clear of tactical framing.

Trial lawyers are no strangers to the bias that can result from framing. They knew about it before it ever had a name, and lawyers for plaintiffs and defendants are equally well acquainted with it. Defense lawyers tell themselves, “If I can get our damages witness to say that damages are a pittance, then even if the jury is ill-disposed toward us, a double pittance is still a pittance, even after trebling.” Simultaneously, plaintiffs’ lawyers say to themselves, “If my damages witness can be prevailed upon to say that the damage award should be measured in the billions, then even if the jury mistrusts my client and my witness, a fraction of billions is still big money.” In other words, imprinting the choice of a damage award with a very high number (for the plaintiffs) or a very low one (for the defendants) is a good stratagem as it stands a chance of pushing a subliminal button in even the most careful fact-finder.

A predictable tactic is to attempt to conscript experts into this effort because who better than an expert to provide the rationale for a huge or tiny outcome? When lawyers do manage to draft their experts into this ploy, antitrust damages analyses are no better than the analyses that are frequently seen in other fields of law.

About NERA

NERA Economic Consulting (www.nera.com) is an international firm of economists who understand how markets work. Founded in 1961 as National Economic Research Associates, our more than 45 years of experience creating strategies, studies, reports, expert

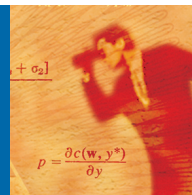
testimony, and policy recommendations reflects our specialization in industrial and financial economics. Our global team of more than 600 professionals operates in over 20 offices across North America, Europe, and Asia Pacific.

Learning from Past Mistakes

Preserving the generally high quality of antitrust damage analysis requires paying careful attention to the distinction between fact and counterfactual (actual and but-for), and by steering clear of tactical framing. A good damages analysis also avoids the following three common errors.

Estimating Damages Based on a Flawed Theory of Competitive Harm

One common error is the use of a flawed theory of competitive harm. When thinking about how this error often appears in practice, my thoughts turn to the varieties of behavior that offend Section 1 of the Sherman Act. Consider, for example, a widespread increase in the price paid by eight named plaintiffs. This could be the result of two distinct types of anticompetitive conduct. One theory of competitive harm might be based on a market-wide, OPEC-like price-fixing cartel. As economists know, the hallmark of a cartel is a restriction in output that leads to higher prices. Even observant lay newspaper readers will notice that the headlines never say “OPEC agrees to raise the price of oil by 12 percent.” What they say instead is that “OPEC agrees to new quotas,” or something along those lines. The result is the widespread increase in oil prices—a consequence of collusive output restriction.



A second theory of competitive harm might be based on a market allocation or customer allocation scheme. For example, the sales managers of each of the four largest competitors in the market may be accused of trying to increase their bonuses by agreeing to avoid outbidding each other for the orders of a small group of customers in the market. Under this theory of harm, prices would rise for these few customers, but there would be little restriction in total market output and no basis in economics for thinking that others would be adversely affected.

The correct estimate of damages will, of course, depend on the correct theory of competitive harm. If there was a cartel at work, then prices may have increased for all customers in the market, and not just the eight named plaintiffs. However, if the bad conduct were the creation of a customer allocation scheme limited to the eight named customers, damages to other customers in the market may be unlikely. Moreover, an assessment of damages under a theory of customer allocation will involve a different set of questions: what is the loss to each of the eight named plaintiffs of dealing with a near-monopoly instead of all four competitors, and was there competition outside the agreement?

Estimating Damages Using an Analytical Model that is Not Grounded in Reality

Damages models rise and fall on the validity and strength of the underlying assumptions and factual predicates. Models based on assumptions that are inconsistent with market-wide facts will not yield useful or informative damages estimates.

Two interesting examples can be found in the case law. In *Concord Boat et al. v. Brunswick*,⁴ a group of plaintiff boat builders alleged that Brunswick, a marine engine-maker, had an acquisition program and a pricing strategy that rewarded customers who purchased a greater share of their engines from Brunswick (as opposed to a rival engine-maker). The plaintiffs' damages theory implied that damages were due on every dollar of sales that Brunswick garnered above a 50 percent market share benchmark. The Eighth Circuit Court of Appeals, in jettisoning the plaintiffs' case in its entirety, pointed, among other failings, to the plaintiffs' expert's failure to account for several reasons why Brunswick enjoyed a high market share: (a) a competing engine was defective and subject to recall; (b) an engine-maker had exited the market; and (c) the merger of two other engine-makers was fraught with marketing mishaps. This analysis was flawed because it was based on assumptions that do not reflect reality, although this could also be termed the "failure to disaggregate."⁵

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There are more complex versions of this sort of flaw in estimating damages. For example, a regression-based damage model needs to take account of the realities no less than non-econometric approaches. Badly specified models are, by definition, detached from reality, as illustrated in the summary judgment opinion in *American Booksellers Assn. v. Barnes & Noble et al.*⁶ In this case, the plaintiff's model was rejected by the Court on the grounds

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that it failed to employ actual prices and costs, making no allowance for the fact that differences in discounts might be due to differences in cost. The Court also noted that the plaintiff's analysis took no account of actual levels of competition among defendants, or between the plaintiff and defendant bookstores and other outlets that belonged in the relevant market (e.g., internet sellers and price clubs). Because of a lack of connectedness to reality, the model could not be used to establish either injury or damages, and the case was dismissed.

Estimating Damages Using a Flawed Model of Competitive Pricing

The third common error is closely related to the failure to construct a proper counterfactual, but it is worth discussing separately because it can arise even if the counterfactual market conditions are properly specified. There is a common assumption that in a competitive market, the price should be low—perhaps even zero. This assumption often arises in controversies over markets in which marginal costs are low: recorded music, credit card transactions, and the like. The argument goes like this: economics textbooks tell us that in competitive industries, price should equal marginal cost. This would imply that in industries that are characterized by low (or zero) marginal costs, prices should be zero (or something very close to it). Therefore, any difference between the actual price and (something very close to) zero must be due to collusion or some other kind of anticompetitive behavior.

Our Practice

NERA economists employ economic theory and quantitative methods grounded in a thorough understanding of the market facts to provide a full range of theoretical and empirical economic analysis and testimony in matters involving mergers and acquisitions, antitrust litigation, and competition policy. We advise companies and their attorneys, as well as governments and regulators, throughout the world on investigations of alleged monopolization, abuse of dominant position, and market power. We analyze the entire range

Indeed, in the imaginary world of perfect competition where there are no sunk costs and widget factories that cost nothing to build, competition will drive price to marginal cost. Since the markup over marginal cost is zero in a competitive market, it is a good thing that there are no other costs. If there were, operating cost margins would necessarily be negative, which is no way to make a living.

What distinguishes antitrust damages models is usually the care that is taken to construct the proper counterfactual or but-for scenario and to explain damage estimates as outcomes of market processes.

The error here is that the competitive benchmark of marginal cost pricing is derived from a counterfactual market that is built on wordplay. The words “competition,” and “competitive,” like many other words in our language, have more than one meaning, even within the confines of economic usage. When modified by “perfectly” or “atomistically,” a competitive market is one in which all profits are competed away and any attempt by one competitor to raise price causes him to lose all his sales to rivals who profit by refusing to go along. But, as we all know, a competitive market also properly means a market in which competition, while unrestrained by collusion, may require investment in plant, brand, talent, product differentiation, or innovation. We can think of these as

of economic issues that arise in antitrust cases, including market definition and market power, market structure and entry conditions, pricing, and other conduct affecting competition, profitability, and damages. NERA's expertise includes assessing and, when necessary, testifying to the economic merits of allegations of foreclosure and exclusionary conduct, tying and bundling, refusals to deal, vertical restraints, collusive behavior, essential facilities, and anticompetitive pricing behavior.

$$\frac{[\theta(1-p)n_0/(n_x-1)n_x]}{n_0/n_x}$$

$$T_2 = \frac{Q^2/G}{Q_2/(N-K_1-2G)}$$

real-world markets because the other kind, in all but the rarest of cases, is not. A particular variety of such a real-world situation is the high up-front, fixed cost, low marginal cost industry. Here are just a few examples:

- Pharmaceuticals: it costs a lot to invent a new drug and get it approved, but not much to make an extra bottle of pills.
- Music: it costs a lot to bring a new performer, band, or orchestra to prominence, but not much to make an extra compact disc of the latest recording.
- Financial transactions: it costs a lot to create the infrastructure of a financial institution, but not much to move funds around electronically.

In industries such as these, pricing at near-zero marginal cost implies an inability to invest in projects necessary to sustain the enterprise. Needless to say, we don't see that in the real world. Thus, a damage theory that depends on the proposition, "If the market were *competitive* (nudge, nudge, wink, wink), then we would see prices equal to the pennies that it takes to make the product" is nothing more than a bad pun. This is because, as a matter of arithmetic, damage calculations which pretend that near-zero marginal costs would also be essentially the same as the prices that we would have observed in the but-for world impute almost the entirety of revenue to damages.

Conclusions

In the area of antitrust, economic analyses of damages are usually understandable and testable. This is because what distinguishes antitrust damages models is usually the care that is taken to construct the proper counterfactual or but-for scenario and to explain damage estimates as outcomes of market processes, which they are. The best models also avoid three commonly found errors: they are based on a theory of competitive harm that is sensible and specific; they rely on an analytical framework that is consistent with the real world; and they rely on benchmarks that are derived from a realistic model of competitive pricing.

NOTES

- * This article is based on remarks that I prepared for a panel discussion on "Proving and Disputing Damages at the Trial of an Antitrust Case," at the 56th Annual Spring Meeting of the American Bar Association Section of Antitrust Law, Washington, DC, 26 March 2008.
- 1 David E. Bernstein, "Expert Witnesses, Adversarial Bias, and the (Partial) Failure of the *Daubert* Revolution," *Iowa Law Review* 93, 2 (February 2008): 451-489.
 - 2 Robert William Fogel, *Railroads and American Economic Growth: Essays in Econometric History*, (Johns Hopkins University Press, 1964), at 235.
 - 3 Amos Tversky and Daniel Kahneman, "Rational Choice and the Framing of Decisions," *Journal of Business* 59, 4, Part 2 (1986): S251-S278.
 - 4 *Concord Boat Corporation et al. v. Brunswick Corporation* (US Court of Appeals for the Eight Circuit, 24 March 2000). I was Brunswick's trial witness on damages.
 - 5 When there are multiple causes for a particular outcome, an expert may be asked to separate or disaggregate the specific effect of the challenged conduct from that of other market events or acts that may have played a contributing role. Here, the failure to disaggregate refers to the need to determine the extent to which Brunswick's market share was due to the alleged bad act and not other market events.
 - 6 *American Booksellers Assn., Inc., et al. v. Barnes & Noble Inc. et al.* (US District Court, Northern District of California, Opinion and Order, 19 March 2001). I was one of the defendants' economists.

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