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Herbert J. Hovenkamp

University of Pennsylvania Carey Law School

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A PRIMER ON ANTITRUST DAMAGES

(revised)

Herbert Hovenkamp***Introduction: Antitrust Damages Actions and Social Welfare*****The Role of Efficiency in Damages Theory***

The marriage between economics and federal antitrust policy becomes rocky when it reaches the law of damages. With the exception of market definition issues, most of the economics applied in substantive antitrust analysis is conceptual and written by academics who were not contemplating litigation. By contrast, an economically sophisticated law of damages requires empirical studies to be made within the context of litigation and with specific application to the facts placed before the court. For the economist, empirical studies invariably mean statistics, regression analysis and other forms of higher mathematics. The result can be a nightmare for the judge, who must ultimately instruct the jury in such a way that their decision will not be arbitrary.

Certain complexities in the law of damages limit the contribution of theoretical economics. The economics revolution in antitrust has been concerned chiefly with the "quality" of antitrust injury. It has helped policy makers determine when certain practices, such as vertical integration, are beneficial to society and when they are harmful; or alternatively, whether the plaintiff is complaining about anticompetitiveness or efficiency. But the law of damages has the much more difficult task of *quantifying* injury; the difference between saying that a certain practice is harmful and quantifying the amount of harm can be significant.

Most of the law continues to be based on concepts of justice and compensation that are inconsistent with any notion that the purpose of antitrust enforcement (including private enforcement) is to deter conduct only to the extent that it is inefficient. But the economics revolution in the substantive law of antitrust cannot be ignored in the law of damages, or nearly everything given by one hand will be taken back by the other. The availability and amount of damages determines the amount of antitrust enforcement that exists. More importantly, it affects the cost-benefit calculus any firm undertakes when it considers whether to undertake a risky, probably efficient practice whose legality is uncertain and which is likely to injure certain competitors. The great majority of antitrust cases are filed by private plaintiffs,¹ and most of these include a damage claim. As a result, most antitrust enforcement comes from private parties whose personal motive is not optimal efficiency or the maximization of consumer wealth, but rather their own economic gain.

* Ben V. & Dorothy Willie Professor of Law, University of Iowa.

¹ See the data cited in Herbert Hovenkamp, *Federal Antitrust Policy: the Law of Competition and its Practices* § 16.1 n.7 (4th ed. 2011) (forthcoming).

The basic economic ideology of antitrust policy today is that antitrust should maximize the wealth of society by condemning practices when they permit inefficient output reductions and price increases, and by approving practices when they are competitive. With respect to damages, however, economists have offered antitrust policy makers a far more difficult proposition: that the damages for a particular offense should be calculated so as to make the offense unprofitable if it is inefficient, but not if it is efficient.² The "antitrust injury" doctrine developed by the Supreme Court in *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*³ gives ambiguous support for this doctrine, although academic writings have carried the doctrine further than anything the Supreme Court stated.⁴

Many practices alleged to violate the antitrust laws are efficient. Others are inefficient and have few socially redeeming virtues. Still others may simultaneously increase both the efficiency of the participants and their market power. A perfectly designed antitrust policy would exonerate the first set of practices, condemn the second set, and condemn the third set only when the social cost of the restraint exceeds its social value. A theory of damages based on the same principle would make them unprofitable when they are inefficient but leave them alone when they are not.

Deterrence and Damages

One superficially plausible way of making damages measurement easier is to establish a relatively high floor for damage recoveries and no ceiling. If all presumptions were in the plaintiff's favor, if the rankest speculation was permitted to go to the jury, and all ambiguities were resolved in favor of the plaintiff's estimates, we could confidently predict that damages would always be large enough to deter the violations. The same result might be achieved by establishing a scale of very high minimum damages, or by changing the multiplier—say, from treble damages to tenfold damages.

² See William Breit & Kenneth G. Elzinga, *Antitrust Penalty Reform: An Economic Analysis* 3–29 (1986); William M. Landes, *Optimal Sanctions for Antitrust Violations*, 50 *U.Chi.L.Rev.* 652 (1983); Herbert Hovenkamp, *Treble Damages Reform*, 33 *Antitrust Bull.* 233 (1988). On the relative value of private and public antitrust enforcement in achieving optimal enforcement, see Randolph Preston McAfee, Hugh M. Mialon & Sue Mialon, *Private v. Public Antitrust Enforcement: A Strategic Analysis*, 92 *J.Pub.Econ.* 1863 (2008); Robert H. Lande & Joshua P. David, *Benefits from Private Antitrust Enforcement: An Analysis of Forty Cases*, 42 *USF L.Rev.* 879 (2008); Ilya R. Segal and Michael D. Whinston, *Public vs. Private Enforcement of Antitrust Law: A Survey* (Stanford Working Paper, 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=952067.

³ 429 U.S. 477, 97 S.Ct. 690 (1977).

⁴ For example, see William H. Page, *Antitrust Damages and Economic Efficiency: An Approach to Antitrust Injury*, 47 *U.Chi.L.Rev.* 467 (1980).

If antitrust enforcement by means of damages actions were costless, if courts never made an error in identifying a certain activity as an antitrust violation, *and* if all antitrust violations so identified were inefficient, without compensating efficiencies, then a case could be made for penalties far in excess of the expected profitability of any illegal act.⁵ Such high penalties would certainly deter. Further, when deterrence is costless and *never* deters an efficient practice, then overdeterrence is not a substantial social concern.

If any one of the above propositions fails to obtain, however, deterrence itself becomes a socially costly commodity. Private antitrust enforcement is not costless, but in fact quite expensive. Furthermore, there is good reason to believe that it is subject to declining marginal utility and increasing marginal cost. If there were only a small amount of enforcement it would be directed at egregious, probably *per se* violations, such as price fixing, which are relatively easy to prove. As the law provides for increasing amounts of enforcement (perhaps by increasing the damages multiplier), however, the enforcers will attempt to reach increasingly marginal activity whose social costs are more ambiguous. Furthermore, proving a violation and injury in such circumstances will cost more. As the amount of enforcement increases the benefits may continue to increase, but at a decreasing rate. Likewise, as the amount of enforcement increases the costs will rise at an increasing rate. Eventually the marginal cost and marginal benefit curves will intersect. Enforcement beyond that point would be inefficient: the amount of social gain claimed by the additional enforcement would be less than the additional costs of providing it.⁶

⁵ In a public enforcement system the large fine may reduce enforcement costs, because fewer prosecutions would be necessary to achieve a given level of deterrence. For example, a one in ten chance of paying a \$1000 fine should theoretically have about the same deterrent effect as a one in one thousand chance of paying a \$100,000 fine. If people are not risk neutral and transaction costs are positive, however, some care must be taken in determining the proper trade-off between the probability and the size of an expected penalty. See William Breit & Kenneth G. Elzinga, Antitrust Penalty Reform: an Economic Analysis 7 (1986); A. Mitchell Polinsky & Steven Shavell, The Optimal Tradeoff Between the Probability and Magnitude of Fines, 69 Amer.Econ.Rev. 880 (1979); Michael K. Block and J. Gregory Sidak, Why Not Hang a Price Fixer Now and Then? 68 Geo.L.J. 1131 (1980).

In a private enforcement system such as that created by § 4 of the Clayton Act, however, an increase in the size of the expected fine will increase, not decrease, the probability of having to pay the fine, because there would be more private enforcement. More private plaintiffs would bring actions, for as the expected return rises more lawsuits at the margin would become profitable. In short, there would very likely not be a "trade-off" between the probability and the magnitude of the expected penalty at all, but both would increase together. Of course, some other mechanism could be used to reduce the amount of private enforcement, such as narrowing standing to a smaller group of people or radically shortening the limitation period. But calibrating damages by such methods would almost certainly be impossible.

⁶ See Kenneth G. Elzinga & William Breit, The Antitrust Penalties: A Study in Law and Economics 9–12 (1976).

Figure 1 shows the marginal social cost of deterrence (the sum of all costs to the enforcer, the defendant and the rest of society) rising and the marginal social benefit (the sum of all benefits to both the private plaintiff and the rest of society) falling. The optimal amount of deterrence is point 0. Any enforcement beyond point 0 would yield a higher degree of competition, but the social value of the greater competition would be outweighed by the social cost of the additional deterrence.

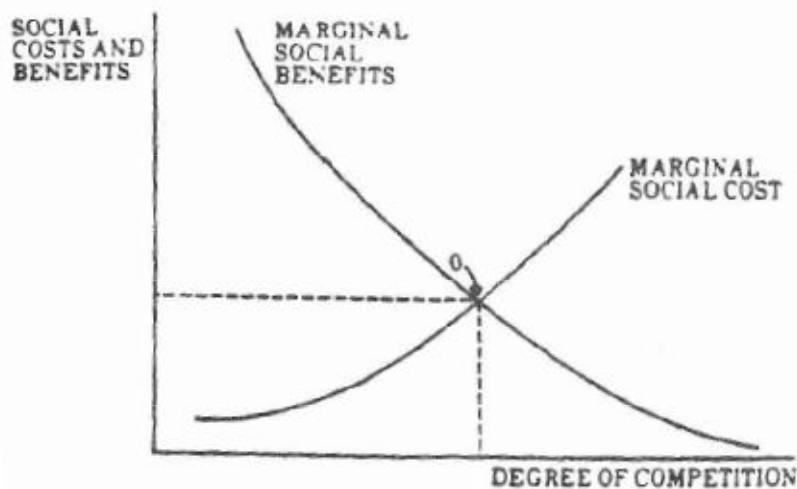


Figure 1

An optimal antitrust enforcement policy would enforce to the point that the marginal cost of enforcement equaled the marginal benefit. However, locating the intersection of marginal enforcement cost and marginal benefit is possible only in a vague and most general way. At the extreme, some people have argued that the cost of *any* amount of private enforcement exceeds its benefit—that is, that the marginal social cost curve never intersects the marginal social benefit curve at all, but is higher at all places.⁷ This would be true if inefficient antitrust violations never occurred, or if the costs of proving the existence of even a simple price fixing conspiracy were higher than the amount of social benefit that condemnation of the conspiracy would produce.

But others believe that the current level of antitrust enforcement falls short of the intersection with marginal benefit—that society would be wealthier if there were more antitrust

⁷ For example, William F. Shughart II, *Private Antitrust Enforcement: Compensation, Deterrence, or Extortion*, available at <https://www.cato.org/pubs/regulation/regv13n3/reg13n3-shughart.html>. A somewhat more moderate position is Robert H. Bork, *The Antitrust Paradox: A Policy at War With Itself* (1978; rev. ed. 1993).

enforcement. They would propose more enforcement, usually by means such as broader rules of standing, damages actions for indirect purchasers, broader *parens patriae* actions, easier and more frequent use of class actions, changes in certain presumptions and burdens of proof, more rules of *per se* illegality, and perhaps even changing the damages multiplier from treble to some higher number.⁸

Even if courts could identify antitrust violations with absolute precision and every activity branded as an antitrust violation were inefficient, an unlimited amount of enforcement would nevertheless against violations not be optimal. Sooner or later the cost of enforcement would exceed the benefits.

The social costs of enforcement loom larger when we consider that courts are not always able accurately to distinguish competitive from anticompetitive conduct. The more private enforcement there is, the more likely that the enforcement, at the margin, will be in areas where courts are prone to error. For example, predatory pricing is a "marginal" offense. The costs of litigating it are relatively high, as is the likelihood that the court will make an error.⁹ A likely result is many potential defendants (not merely the ones involved in litigation) avoid aggressive pricing for fear of litigating a predatory pricing case, even though they might eventually win. Although the antitrust laws provide costs and attorneys fees for prevailing plaintiffs, they make no similar provision for prevailing defendants. The social cost of the rule against predatory pricing must include not only the costs of litigating the two or three cases in which predation is proved, but also the dozens of cases in which the defendants eventually prevail. The more ambiguous the offense, the larger these costs become.

Using Damages to Minimize the Social Cost of Antitrust Violations

As Gary Becker once observed, the costs of harmful conduct and the system of preventing it are of three kinds: 1) the costs imposed by the conduct itself; 2) the costs of detecting, apprehending and determining the guilt of alleged violators; 3) the costs of imposing sanctions on

⁸ E.g., Robert H. Lande, Multiple Enforcers and Multiple Remedies: Why Antitrust Damage Levels Should be Raised, 16 *Loy. Consumer L. Rev.* 329 (2004); Lawrence A. Sullivan, Monopolization: Corporate Strategy, the IBM Cases, and the Transformation of the Law, 60 *Tex. L. Rev.* 587 (1982); Robert Pitofsky, The Political Content of Antitrust, 127 *U. Pa. L. Rev.* 1051 (1979). See also Spencer Weber Waller, Private Law, Punishment and Disgorgement: the Incoherence of Punishment in Antitrust, 78 *Chi.-Kent L. Rev.* 207 (2003) (arguing that there is no more than a random relationship between current treble damages awards and optimal penalty). In the special context of merger enforcement, see Joseph F. Brodley, Antitrust Standing in Private Merger Cases: Reconciling Private Incentives and Public Enforcement Goals, 94 *Mich. L. Rev.* 1 (1995) (arguing for broader private plaintiff standing in numerous areas).

⁹ See Ch. 8.

condemned violators.¹⁰ An optimal antitrust policy would minimize the sum of these three costs. However, the costs are not independent of each other. Sometimes one cost will rise as another declines. For example, the substantive law of antitrust is calculated so as to minimize costs of the first type: a well-designed antitrust policy will condemn socially costly acts and approve socially beneficial ones. By contrast, the *per se* rule is designed to minimize costs of the second type—in this case, the costs of operating the system that determines when the antitrust laws have been violated. Expansive use of *per se* rules (either of legality or illegality) might well reduce costs of the second type substantially; however, the reduction would probably cause an increase in costs of the first type. For example, if too many practices are declared *per se* legal without elaborate inquiry into their rationale and likely effect, underdeterrence and socially costly antitrust violations will be encouraged. By contrast, if too expansive a rule of *per se* illegality is used, the result will be overdeterrence and some socially beneficial practices will be condemned.

The same thing generally applies to punishment costs. Too expansive a law of damages will encourage too many private plaintiff filings, give plaintiffs an incentive to litigate longer, and to hold out for higher settlements. The result will be increased costs of the second type. At the same time, an overexpansive law of damages and the excessive filings caused thereby will dissuade firms from engaging in competitive practices calculated to injure competitors but which might later be characterized as antitrust violations. This will also increase costs of the first type. The greater the room for misinterpretation, or the greater the uncertainty about the law, the greater these social costs become.

Finally, antitrust law, just as all other areas of law, must deal with the problem of marginal deterrence.¹¹ Deterrence works because people find certain kinds of punishment unpleasant, and some kinds more unpleasant than others. For example, large fines are less pleasant than small fines and long prison sentences are less pleasant for most people than short ones. The marginal deterrence argument says, quite simply, that if both robbery and murder are punishable by death, the person who has just committed a robbery will have no disincentive to kill his victim as well. The chances of detection might be less once the victim is out of the way, and the punishment will be no greater. By contrast, if robbery is punishable by ten years in prison and murder by death, then the person who has just committed a robbery will be forced to balance the decreased chances of detection that might result from killing the victim against the greatly increased expected cost of punishment.¹²

¹⁰ Gary Becker, *Crime and Punishment: An Economic Approach*, 76 J.Pol.Econ. 169, 181 (1968); an application of Becker's argument to antitrust damages actions is Warren F. Schwartz, *An Overview of the Economics of Antitrust Enforcement*, 68 Geo.L.J. 1075 (1980).

¹¹ For the history of marginal deterrence in the common law tradition, see Herbert Hovenkamp, *The Marginalist Revolution in Legal Thought*, 46 Vand. L. Rev. 305 (1993).

¹² See George J. Stigler, *The Optimum Enforcement of Law*, 78 J.Pol.Econ. 526, 527 (1970); Block and Sidak, note __ at 1134.

The marginal deterrence argument applies to antitrust. For example, there is probably a correlation between the size of a cartel's monopoly overcharge and the chance of detection: a cartel which pushes the price of widgets from a competitive level of \$1.00 to \$1.20 is less likely to be detected than a cartel that pushes the price up to \$2.50.¹³ Since private damages actions yield three times the monopoly overcharge, the "fine" that a violator must pay if it is caught will be substantially larger if the price increase is larger. When the cartel members calculate the increased probability of detection *and* the increased size of the expected fine, they may well decide to be content with the relatively small \$1.20 cartel price. The result is that the cartel will probably impose smaller losses on society.¹⁴ However, if all instances of price fixing were punished by a fine of \$1,000,000, then the cartel would consider only the increased likelihood of detection and might well conclude that the larger monopoly overcharge would be better. If the probability of detection does not vary with the amount of the overcharge, a uniform fine of \$1,000,000 would give the cartel no legal incentive to charge a lower rather than a higher cartel price.

The Optimal Deterrence Model for Antitrust Damages

Victim's Losses v. Violator's Gains

The rationale for private antitrust damage actions could be either compensation or deterrence. The goal of an enforcement system based on compensation is to restore injured parties to their position had the violation not occurred. The goal of an enforcement system based on deterrence is to identify some optimal level of violations that should be eliminated, and make that level of violations unprofitable by imposing costs on prospective violators.

An *economic* model for assessing the optimal level of antitrust damages will employ a deterrence rationale, making conduct unprofitable precisely to the extent that it is inefficient. As a result, there is a correlation between the expected profitability of harmful conduct and the proper measure of damages needed to deter it.

But there may be little correlation between the expected profitability of inefficient conduct and the amount of harm caused to injured plaintiffs. For example, the profitability of predatory pricing depends on the number of sales that the successful predator eventually makes at a monopoly price, multiplied by the amount of the monopoly overcharge.¹⁵ This number likely

¹³ See Michael K. Block, F.C. Nold & J. Gregory Sidak, The Deterrent Effect of Antitrust Enforcement, 89 J.Pol.Econ. 429, 431 (1981).

¹⁴ However, the social cost of a cartel includes 1) the monopoly deadweight loss; 2) the cartel's enforcement costs; and 3) the length of time the cartel exists. If (3) goes up as (1) goes down, the welfare effect of the change may not be positive.

¹⁵ On predatory pricing, see 3A Phillip E. Areeda & Herbert Hovenkamp, Antitrust Law, Ch. 7C (3d ed. 2008).

bears no relation to the losses suffered by the competitor driven out of business by the predation. There may be a better correlation between the profitability of the post-predation monopoly pricing and the amount of the injury to the monopolist's customers. Here, however, the monopoly profits must be reduced by the costs that the predator encountered during the predatory period. The consumer's overcharge injuries reflect no such discount.

Courts have not often taken sides in the theoretical battle over whether compensation or deterrence should be the goal of private antitrust enforcement. The Supreme Court has said that *both* compensation and deterrence are legitimate goals of private treble damages actions.¹⁶ But the goals of compensation and deterrence are inconsistent with each other, certainly in the face of our present system of legal rules and the high costs of enforcement. Forced payment of compensation, multiplied by three, to every person who could show he was injured by an antitrust violation would almost certainly yield outrageous overdeterrence. By contrast, optimal deterrence can be achieved only by our refusal to compensate some people whose injuries were in fact caused by antitrust violations.¹⁷

In the vast majority of litigated cases, damages are assessed and computed in ways far more consistent with a compensation model than with any deterrence model.¹⁸

Optimal Damages for Overcharge Injuries

Consider first the relatively simple situation of the single-firm monopolist charging its short-run profit-maximizing price. In Figure 2 (on the following page), the competitive price would be P_c and output Q_c , but the monopolist reduces output to Q_m and raises price to P_m . Rectangle 2–3–5–4 represents a wealth transfer from consumers to the monopolist, while triangle 4–5–6 represents the traditional "deadweight loss" caused by the monopolist's output reduction. Traditionally economists have identified triangle 4–5–6 as the social cost of monopoly, while they have considered rectangle 2–3–5–4 as a transfer payment that has no effect on the overall wealth

¹⁶ See *Pfizer, Inc. v. Government of India*, 434 U.S. 308, 314, 98 S.Ct. 584, 588 (1978); *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 485–86, 97 S.Ct. 690, 695–96 (1977). The Court stated a stronger preference for deterrence in *Hoffman-La Roche, Ltd. v. Empagran*, 542 U.S. 155, 169, 124 S.Ct. 2359, 2369 (2004), on remand, 388 F.3d 337 (D.C.Cir.2004) (expressing concern that foreign plaintiff actions would interfere with government's cartel detection programs); and also in *Illinois Brick Co. v. Illinois*, 431 U.S. 720, 746, 97 S.Ct. 2061, 2075 (1977) (stating that the two-thirds of the treble damages above the compensatory amount were designed to supplement public enforcement by the creation of "private attorneys general."

¹⁷ See Warren F. Schwartz, *Private Enforcement of the Antitrust Laws: An Economic Critique* 28–32 (1981).

¹⁸ See the discussion *infra*..

of society.¹⁹

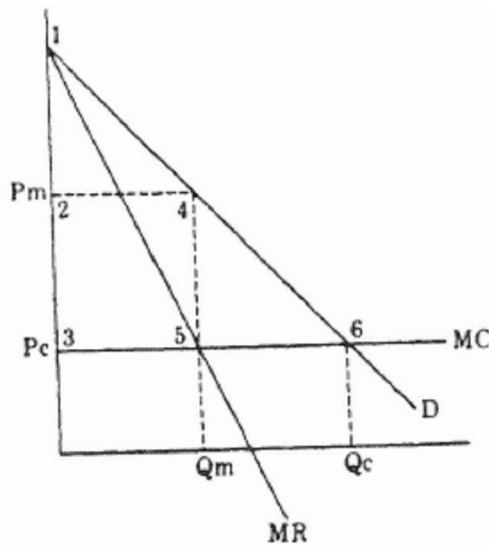


Figure 2

If the demand curve is perfectly linear and the firm's marginal costs are constant, line 3–5 is the same length as line 5–6, and the deadweight loss triangle is precisely one half the size of the wealth transfer rectangle.²⁰ Assuming the rectangle represents \$1000, the monopoly makes the monopolist \$1000 richer, the customers who continue to buy \$1000 poorer, and generates a lost value, which does not accrue to anyone, of \$500.

Assume that the antitrust laws give an action for treble damages and that the possibility of detection and successful prosecution is precisely 1 in 3. The expected costs of a violation to a violator are the amount of damages times the damages "multiplier" (3, in the case of the federal antitrust laws) multiplied again by the likelihood that the violator will have to pay the damages, in this case 1/3. In this hypothetical case the damages multiplier and the risk of detection cancel each other out and the expected cost of the violation will equal whatever damages the legal rule compels. This analysis initially ignores the cost to the defendant of litigating the antitrust claim, and of paying the plaintiff's costs and attorney's fees if the plaintiff should prevail.

¹⁹ See Herbert Hovenkamp, *Federal Antitrust Policy* §§ 1.2–1.3 (4th ed. 2011) (forthcoming).

²⁰ This is because if the demand curve is linear, the marginal revenue curve will also be linear and its slope will be exactly double that of the demand curve. Hovenkamp, *Federal Antitrust Policy* § 1.2.

Even though triangle 4–5–6 is the efficiency loss created by the monopoly, a damages policy designed to maximize efficiency would *not* set damages equal to the deadweight loss triangle: that is, the optimal rule would not require the defendant merely to pay damages equal to the social cost of his activity. The expected cost of the violation on that basis is \$500, while the expected gain from the activity is \$1000. The violator will engage in the activity even though it is socially costly. The damages payment is a transfer payment made after the fact. If the social cost of this monopoly is \$500, payment of the \$500 to the plaintiff does not in any way correct or "eliminate" the social cost of the monopoly. The purpose of the deterrence model is to ensure that an inefficient monopoly will never occur in the first place.

By contrast, a rule that measured damages by either the amount that the violator gained or by the amount that purchasers lost would reduce the expected value of the monopolization to zero. In this case, if the expected level of the fine were \$1001.00 no profit-maximizing firm would engage in the illegal activity.²¹

The problem becomes more complicated when we consider a possibility that is frequently addressed in earlier chapters of this book: that an antitrust violation simultaneously increases both the efficiency and the market power of the participants. For example, a horizontal merger or joint venture involving firms that dominate a relevant market may give the firms the power to increase price by reducing output. At the same time, it may permit them to lower their costs. Courts are generally incapable of "balancing" the increased market power that might arise in such circumstances against the increased efficiencies. Rather, they condemn mergers and joint ventures that create a substantial danger of monopoly pricing, and generally ignore offsetting efficiencies, except in the clearest circumstances.²²

However, the one person or group of persons arguably in a position to measure the efficiencies and assess their value is the participants themselves. This raises the possibility that, although the substantive law of antitrust cannot "net out" efficiencies and increased market power, perhaps the law of damages can. Consider Figure 3, which illustrates the consequences of a merger or joint venture of competitors that simultaneously gives the participants increased market power and increased efficiency. Before the joint venture, the firms faced costs of C_2 , output was equal to Q_c , and price equal to P_c . After the inception of the joint venture the firms acquire substantial market power, but their average costs drop from C_2 to C_1 . They now determine price and output by the intersection of their new, lower marginal cost curve and their marginal revenue curve. They reduce output to Q_{ml} and raise the price to P_{ml} .²³

²¹ The analysis assumes that the firms are risk neutral. If they are risk averse, a lower fine would be sufficient. See A. Mitchell Polinsky & Steven Shavell, *The Optimal Tradeoff Between the Probability and Magnitude of Fines*, 69 *Amer.Econ.Rev.* 880 (1979).

²² See 4A Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law*, ¶¶970-976 (3d ed. 2008).

²³ See William M. Landes, *Optimal Sanctions for Antitrust Violations*, 50 *U.Chi.L.Rev.* 652 (1983).

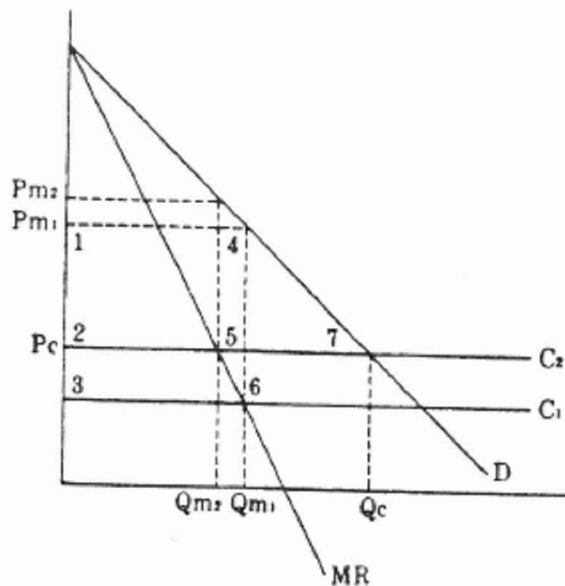


Figure 3

In this case, triangle 4–5–7 represents the deadweight loss produced by the firms' increased market power, while rectangle 2–3–6–5 represents the efficiency gains achieved by their increased productive efficiency. The merger or joint venture will be efficient on balance if rectangle 2–3–6–5 is larger than triangle 4–5–7.²⁴ The merger is characterized as "efficient" in this case *even* though price P_{m1} is higher than price P_c , because the additional cost to consumers is merely a wealth transfer, not a social loss. That is, the merger or joint venture may be efficient, but most of the benefits of the increased efficiency accrue to the participating firms, not to consumers.²⁵

²⁴ See Oliver E. Williamson, *Economies as An Antitrust Defense: the Welfare Trade-Offs*, 58 *Amer.Econ.Rev.* 18 (1968).

²⁵ However, some of the benefits of the efficiency will accrue to consumers even if price P_{m1} is higher than price P_c . If no efficiencies were created the market price would be determined by the intersection of the original cost curve, C_2 , and the marginal revenue curve. In that case the monopoly price would be P_{m2} in Figure 3; and output would be reduced to Q_{m2} .

It is also possible that a merger or joint venture that simultaneously creates market power and efficiencies will yield a profit-maximizing price lower than the former, competitive price. This would occur when the amount of market power created by the venture is relatively small and the

Suppose that the area of rectangle 1–2–5–4 (the monopoly wealth transfer) is 1000, the area of triangle 4–5–7 (the deadweight loss) is 400, and the area of rectangle 2–3–6–5 (the efficiency gain) is 500. In this case the gain to the participants from the merger or joint venture is 1500. The loss to consumers who continue to purchase from the participants is 1000, and the loss to consumers who substitute away is 400. Total losses are 1400. On balance, the venture is efficient even though consumer losses are substantial.

If the participants' expected damages are limited to the monopoly overcharge paid by customers who continue to buy from the firms, then *any* cost reduction produced by the venture will make the venture profitable. For example, if 1–2–5–4 is \$1000, and the expected damages award to be paid to consumer plaintiffs is also \$1000, then the joint activity will be profitable to

increased efficiencies are substantial, as Figure 4 illustrates. Many marginally illegal horizontal mergers probably fall into this category. For example, under the 1992 Horizontal Merger Guidelines a merger between a firm with a 20% market share and a firm with a 5% market share in a market whose HHI exceeds 1800 would probably be illegal. However, the post-merger firm might not exercise substantially more market power than the pre-merger firm. Whether the threat of collusion were higher would depend on other factors in the market. See §§ 12.4c, 12.7. If the available efficiencies are extraordinarily large, perhaps even a merger to monopoly could yield a price reduction. See A.A. Fisher, R.H. Lande, and W. Vandaele, *Afterward: Could a Merger Lead to Both A Monopoly and a Lower Price?* 71 *Calif. L.Rev.* 1697 (1983).

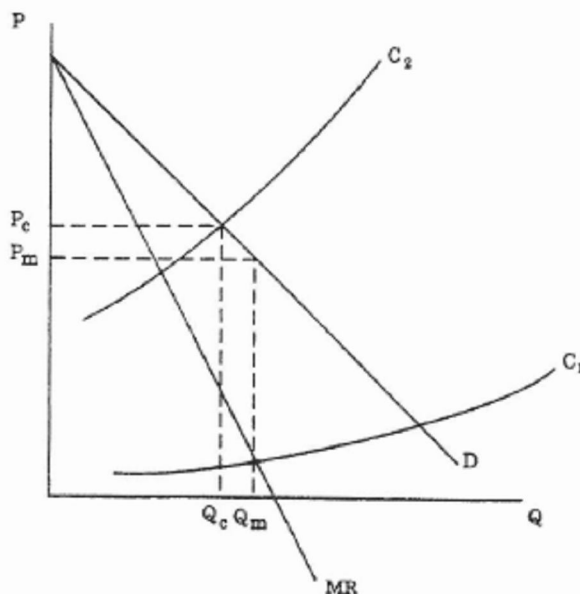


Figure 4

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the participants even if the area of rectangle 2–3–6–5 is equal to \$1.00. It would not matter that the area of the deadweight loss triangle 4–5–7 might be many times \$1.00, and thus the net effect of the venture inefficient. An expected damages award equal to the overcharge would not deter any joint activity that produced an efficiency savings, even if the savings were dwarfed by the deadweight loss.

But suppose that the expected damages is not merely the overcharge, but the *sum* of the overcharge and the deadweight loss: rectangle 1–2–5–4 plus triangle 4–5–7. The venture will be profitable to the participants *only* if rectangle 2–3–6–5 is larger than triangle 4–5–7. Since the venture is efficient under the same circumstances, a rule of damages that gave plaintiffs a cause of action for the overcharge plus the deadweight loss would make the venture profitable if it were efficient, but unprofitable if it were inefficient. Firms would undertake only efficient ventures. For example, if the monopoly overcharge rectangle were \$1000, the deadweight loss triangle \$400, and the efficiency gain rectangle \$450, the expected damages cost of the venture would be \$1400 but the expected gain would be \$1450. The venture would be beneficial to society *and* profitable to the participants. They would pursue the venture.

As noted above, this assessment of expected damages was premised on the firm's belief that the probability of detection and successful prosecution was one in three. Precisely the same reasoning would hold if the arrangement was absolutely public, so the probability of "detection" were one, but the firms were uncertain about whether the contemplated activity violated the antitrust laws. For example, the blanket licensing agreement at issue in *Broadcast Music, Inc. (BMI) v. Columbia Broadcasting System, Inc.*²⁶ was a public price-affecting agreement among sellers who were treated as competitors. The arrangement created substantial efficiencies; however, it may also have increased the market power of the licensors, and it did permit them to price discriminate.²⁷ If *ex ante* BMI had predicted a one-in-three chance that the blanket licensing arrangement would be condemned in an antitrust treble damages action, then it would have undertaken the blanket licensing venture anyway if the efficiencies gained by the venture exceeded the deadweight loss, assuming that the expected penalty would be based on the overcharge plus the deadweight loss. However, if the efficiencies had been less than the deadweight loss, BMI would have foregone the venture. In the *BMI* case there was likely *no* monopoly overcharge: that is, the transactional efficiencies created by the joint venture dwarfed the increased market power so substantially that the joint venture's profit-maximizing price for blanket licenses was lower than the price that would have existed in a competitive market for individual licensing agreements.²⁸

²⁶ 441 U.S. 1, 99 S.Ct. 1551. also *National Society of Professional Engineers v. United States*, 435 U.S. 679, 98 S.Ct. 1355 (1978), which involved a public agreement among engineers not to bid against each other for contracts; and *FTC v. Superior Court Trial Lawyers Ass'n*, 493 U.S. 411, 110 S.Ct. 768 (1990), which involved a public agreement among public defense lawyers to withhold legal services until they received higher fees. In the latter two cases the defendants predicted incorrectly that their agreements would not violate the antitrust laws.

²⁷ See Herbert Hovenkamp, *Federal Antitrust Policy* § 5.2 (4th ed. 2011) (forthcoming).

²⁸ See Figure 4 *supra*.

At this point it is possible to state a general rule: the best measure of damages for overcharge injuries caused by monopoly pricing should equal the amount of the overcharge plus the deadweight loss. This should be the proper amount even if the agreement among the firms is naked price fixing with no efficiency creation whatsoever. In that case, overdeterrence is not a problem. However, the creation of any efficiency will throw upon the defendants the obligation to compare the efficiency gains produced by their venture against the social losses. Such a rule would permit efficient conduct, even if the conduct is an antitrust violation, but would effectively deter inefficient antitrust violations.

If the costs of litigation, including attorney's fees, are considered, the basic analysis remains the same. Since prevention and enforcement costs are a deadweight loss, the effect of inclusion of these costs is simply to enlarge the deadweight loss that must be balanced against the efficiency gains. For example, if the monopoly overcharge is \$1000, deadweight loss from monopoly pricing \$400, litigation costs and attorney's fees \$50, and efficiency savings \$500, the efficiency savings will exceed the sum of deadweight loss and enforcement costs by \$50 and the agreement will be profitable. However, if the anticipated litigation costs exceed \$100, the agreement will not be profitable; likewise, it would be inefficient. This suggests that the rule requiring defendants to pay costs and attorneys' fees is correct.

Optimal Damages for Exclusionary Practices

An "exclusionary practice" is designed by the perpetrator to discipline or exclude rivals so that it can attain or maintain monopoly power. These practices include monopolization and attempt to monopolize, predatory pricing, some concerted refusals to deal and tying arrangements in which the effect is to exclude a rival from the market for the tied product, exclusive dealing, and other forms of vertical integration including vertical restraints. These restraints have in common that they may drive another firm out of business, prevent it from expanding output, or deter it from entering in the first place. The optimal deterrence model suggests that these practices should be condemned if they gave the perpetrator the ability to earn monopoly profits and there were no compensating efficiencies.

But exclusionary practices may be efficient. Further, they may simultaneously be efficient and increase the market power of the participating firms. Courts cannot easily distinguish between competitive and anticompetitive exclusionary behavior, however. Allegations of predatory pricing are often complaints about greater efficiency resulting in lower prices.²⁹ Tying arrangements, refusals to deal, exclusive dealing and territorial division might all be mechanisms by which a firm improves the efficiency of its production or distribution system. All these practices are efficient if the gains from the increased efficiency exceed any deadweight loss caused by increased market

²⁹ See Herbert Hovenkamp, Federal Antitrust Policy § 8.4e.

power. By the same token, however, both the increased efficiency and the increased market power will impose private costs—the former generally upon competitors, the latter generally upon consumers.

An antitrust policy designed to deter inefficient exclusionary practices but permit efficient "exclusionary" practices would assess penalties by looking at the net welfare effect of the practice. Although a court could not quantify efficiency and market power and balance them, the law of damages could arguably be used to shift the obligation to balance to the defendant. If the penalty is the monopoly overcharge plus the monopoly deadweight loss, the practice will be unprofitable if the deadweight loss is greater than the resulting efficiencies, but profitable if the deadweight loss is less than the efficiencies. In short, the damages rule should be the same in exclusionary practices cases as it is in overcharge cases.

The optimal deterrence model's application to the law of exclusionary practices is thus a radical departure from the existing law of damages. Under all prevailing antitrust damages rules for exclusionary practices in lawsuits brought by competitors, the measure of damages is based on the plaintiff's business losses, not on the defendant's monopoly gains and the size of the deadweight loss. Indeed, there is probably no useful correlation between the amount of an injured competitor's lost profits and other consequential damages, and the amount of the monopoly overcharge and deadweight loss caused by the defendant. An efficient practice, which produced no monopoly overcharge and deadweight loss at all, and an inefficient, monopolizing practice might both drive a competing firm out of business. The victim's losses might be precisely the same whether or not the practice was efficient. In one case, however, optimal damages would be zero, in the other very large.

A review of the discussion of the social cost of monopoly in § 1.3 suggests why there is no useful correlation between the amount of an injured competitor's lost profits and the size of the deadweight loss triangle plus the monopoly overcharge. The deadweight loss triangle represents the social cost of monopoly *pricing*—that is, of raising the price to a monopolistic level, with the result that certain persons make inefficient substitutions to different products. By contrast, the injury to the victim of an exclusionary practice such as predatory pricing is a cost of monopolizing *conduct*. If the anticipated return from a particular monopoly is \$1,000,000 per year, the firm will be willing to spend any amount up to \$1,000,000 per year in acquiring or maintaining its monopoly position. Some of this may be spent in inefficient ways, and thus must be included in the social cost of monopoly.

This analysis reveals the highly static nature of the optimal deterrence model. Under the model no damages are due until after the defendant has engaged in a certain period of monopoly pricing. Suppose a dealer is terminated because its supplier and other suppliers in the same market are in the process of forming a cartel, and are using vertical integration to the retail level to monitor output prices. The terminated dealer is in a relatively good position to know what is going on at the time of its termination. Customer-victims of the cartel may not know until later, after the cartel has succeeded in reducing output and raising price. Indeed, they may never know at all. However, the terminated dealer would not have an action for *damages* until the cartel

began operating. Furthermore, the longer the terminated dealer waited before it announced the existence of the cartel and commenced the lawsuit, the greater the damages would be—i.e., since the dealer's damages are measured by the injury suffered by *other* members of society (customers of the cartel) and its own losses are already sunk, the dealer would have an incentive to have those damages be as large as possible.

One radical solution to this problem is to eliminate competitor lawsuits altogether.³⁰ If the only activities that should be illegal under the antitrust laws are those that are calculated to result in monopoly performance, and if the optimal damages for all instances of monopoly performance equal the overcharge plus the deadweight loss, then the best enforcers of the antitrust laws in all instances are customers. Although this might result in a much more efficient level of antitrust enforcement within a static model, it would also eliminate the entire "early warning" system that is now facilitated by competitor lawsuits.³¹

The "early warning" argument cannot be disregarded. The kind of monopoly with which antitrust is concerned is generally "short-run," or of finite duration. Its social cost is a function of its duration. Competitor victims of exclusionary practices are often injured long before consumers are—particularly in cases involving such practices as predatory pricing, where the competitor injury occurs during one time period and consumer injury occurs only later. Further, competitors and other non-consumers, such as terminated employees, are often in a position to detect antitrust violations that may never be detected by consumers.³² These are values of non-consumer lawsuits that cannot be disregarded, notwithstanding that competitors often have the wrong set of incentives.³³

The optimal deterrence model for exclusionary practices has other, more analytic shortcomings. It is based on a low estimate of the social cost of monopoly. As § 1.3 noted, the social cost of the kind of monopoly that concerns antitrust consists of three parts: 1) the monopoly "deadweight" loss; 2) the expenses that the monopolizing firm incurs in excluding rivals; and 3) the loss of irreversible investment made by wrongfully excluded rivals. The optimal deterrence model as stated takes costs of the first two types into account, but not costs of the third type. A properly defined model should include the costs to *all* of the victims of a monopolistic practice except those costs that are incurred by the violator.

³⁰ See Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U.Chi.L.Rev. 263, 331 (1981), which proposes this rule for predatory pricing cases; see also Frank H. Easterbrook, *On Identifying Exclusionary Conduct*, 61 Notre Dame L. Rev. 972 (1986).

³¹ See Herbert Hovenkamp, *Antitrust's Protected Classes*, 88 Mich.L.Rev. 1, 31 (1989).

³² See Hovenkamp, *Federal Antitrust Policy*, § 16.5b.

³³ See generally Herbert Hovenkamp, *Protected Classes*, note __; Herbert Hovenkamp, *Antitrust Policy and the Social Cost of Monopoly*, 78 Iowa L. Rev. 371 (1993).

For example, assume that a challenged practice produced (1) monopoly overcharges of \$100, (2) efficiency gains of \$60, (3) a deadweight loss of \$50, and (4) loss of competitor investment of \$30. The optimal deterrence model indicates damages equal to \$150 (overcharge plus deadweight loss). This would make the practice profitable, since it produces profits of \$160 (overcharge plus efficiency gain). But the practice is in fact inefficient, because it also caused \$30 in loss of competitor investment. A properly defined deterrence model should include as damages the sum of overcharges, deadweight loss *and* loss of competitor investment caused by the exclusionary practice.

The optimal deterrence model suggests damages of zero for failed attempts. Suppose an anticompetitively intended exclusionary practice fails to create a monopoly. Perhaps the dominant firm underestimated ease of new entry or the strength of a rival. For example, the firm attempted predatory pricing but quickly found that the costs exceeded any anticipated benefits. The failed attempt produces no monopoly overcharge, and thus it produces no deadweight loss. Clearly, however, rivals could have been injured. Suppose a firm engaging in predatory pricing forces one rival to shut down, but four other rivals remain, and prices stay as competitive as they had been before. Although the attempt fails, the unrecoverable investments of the rival forced to exit are a social cost of this particular attempt to monopolize. The exiting competitor should be permitted a lawsuit in this case, but damages should be based on the lost investment.³⁴

The Optimal Deterrence Model in Litigation

The case for adopting the optimal deterrence model wholesale becomes quite weak when we consider the difficulties of using it in litigation. The model requires a court to account for several variables that are usually impossible to measure. For example, the entire discussion of optimal deterrence was predicated on a given probability that an antitrust violation would be detected. For example, the treble damages rule that we actually have is justified by an assumption that the risk of detection and successful prosecution is precisely one in three.

But administering such a rule requires us to know the probability of detection and successful prosecution *ex ante*. Not only do we have no reliable information about the probability of detection, but it is clear that different antitrust violations produce widely different probabilities of detection. For example, the probability of detection of a corporate merger or of a public joint venture is virtually 100%. The probability of detection of secret price fixing agreements is certainly much lower, or else there would be far fewer such agreements.³⁵

³⁴ See Steven Shavell, Deterrence and the Punishment of Attempts, 19 J. Legal Stud. 435 (1990).

³⁵ There have been some attempts to estimate the probability of detection of cartels overall. See Peter G. Bryant & E. Woodrow Eckard, Price Fixing: the Probability of Getting Caught, 48 Rev. Econ. & Stat. 531 (1991), which estimates very roughly that between 13% and 17% of cartels are detected and successfully prosecuted. See also the discussion of the Justice Department's cartel amnesty program in *Hoffman-La Roche, Ltd. v. Empagran*, 542 U.S. 155, 169, 124 S.Ct. 2359, 2369 (2004), on remand, 388 F.3d 337 (D.C.Cir.2004). That program is designed to improve

But even *within* the class of secret price fixing agreements known by the participants to be illegal, the probability of detection varies with the nature of the agreement. A cartel with a dozen members may be easier to detect than one with three members (unless the government scrutinizes three firm markets much more carefully). A cartel in a market with thousands of small buyers may avoid detection more easily than a cartel with a small number of large, knowledgeable buyers. A cartel in an industry where the costs are well known to outsiders is certainly easier to detect than a cartel in an industry in which costs are unknown. A cartel containing firms with widely differing sizes and levels of efficiency is calculated to invite defection, and the probability of detection may rise as the number of defections increases. A cartel that finds it necessary to incorporate certain facilitating devices, such as basing point pricing, that are hard to disguise from the public, is certainly more likely to be detected than one that can get along without such devices.³⁶ Finally, the probability of detection may vary with the amount of the monopoly price increase—the higher the increase, the greater the likelihood of detection.³⁷

Even assuming that through some miracle we could compute the probability of detection for all the various kinds of cartels and then produce some weighted "average" probability of detection, such as one in three, we still would not have adequate information upon which to assess optimal penalties. For example, if we concluded that the average probability of detection of all cartels was one in three, and created a treble damages rule, firms would respond by creating more cartels for which the probability of detection is less than one in three, and fewer cartels for which the probability of detection was greater than one in three. As soon as that happened, the weighted average and damages multiplier would have to be recomputed.³⁸

Our usable knowledge of probability of detection is so scant that any argument that the damages multiplier is used to offset the probability of detection must admit that the choice of treble damages or any other multiplier is an absolute shot in the dark. Treble damages is probably

cartel detection rates by giving criminal amnesty and reduced civil penalties to cartel members who blow the whistle on their associates. For interesting graphical analysis of cartel detection rates worldwide, see John M. Conner, *Cartels & Antitrust Portrayed: Detection – Private International Cartels, 1990-2008* (2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1372866. The authors conclude that detection rates are much higher than they used to be, but that many foreign jurisdictions are doing better than the United States is.

³⁶ See Federal Antitrust Policy, § 4.6.

³⁷ See Michael K. Block, Frederick C. Nold & J. Gregory Sidak, *The Deterrent Effect of Antitrust Enforcement*, 89 J.Pol.Econ. 429, 431 (1981). See also Juwon Kwak, *Optimal Antitrust Enforcement: Judicial Standard, Judicial Error and Deterrence Effect* (Georgetown Univ. Working Paper, July, 2010).

³⁸ See Herbert Hovenkamp, *Treble Damages Reform*, 33 Antitrust Bull. 233 (1988).

outrageously overdeterrent with respect to some offenses, such as mergers, and underdeterrent with respect to some others, such as naked collusion.

Second, computing optimal damages requires information about the size of the monopoly overcharge *and* of the deadweight loss. Courts have some experience at guessing the size of the overcharge; measuring the size of the deadweight loss is next to impossible. Courts often estimate the overcharge caused by monopoly pricing, for this is the principal basis for damages in consumer-brought antitrust cases. The court takes the price the plaintiff actually paid for the product and subtracts from it the price that would have been charged for the product in a competitive market.

Occasionally there will be another market with a firm and cost structure similar to the market at issue, from which the court can draw some inferences about the competitive price. For example, if St. Louis shoe retailers are convicted of price fixing, the court might look at the Kansas City retail market for shoes in order to determine what the competitive price of shoes should be. If the costs in the Kansas City market are the same as in the St. Louis market, or if any differences can be quantified, then the court will have some fairly reliable information about the competitive price. But often such information is unavailable, because the cartel is nationwide and the structure of foreign markets is too different to invite comparison, because the product is custom-made, or else because there simply are no markets similar enough to support such comparisons. Courts generally respond to these difficulties by saying that once violation and fact of injury are established, the plaintiff and court need only develop an approximation of the amount of the overcharge.³⁹

Calculation of the deadweight loss makes calculation of the overcharge look easy. If a demand curve is perfectly linear the monopoly overcharge is equal to twice the deadweight loss, but real world demand curves are seldom linear. As a result, the relationship between deadweight loss and overcharge is not constant but varies from case to case. Furthermore, it presents an empirical question that is certainly beyond courtroom measurement. About the only thing that can be said with any confidence is that when the demand curve is concave the amount of the monopolist's *output reduction* from the competitive level will be larger than it would be if the curve were linear. By contrast, if the demand curve is convex, then the amount of the output reduction from the competitive level will be smaller than it would be if the curve were linear.⁴⁰ However, deadweight loss is not a function merely of the output reduction, but also of the amount of consumers' surplus above the output reduction. In order to measure it, the court would have to determine the price that would have existed in a competitive market, reconstruct the demand curve faced by the monopolist, and then compute the size of the deadweight triangle.

The difficulties of applying the optimal deterrence model in litigation suggest that, at least

³⁹ See the discussion *infra*.

⁴⁰ See Joan Robinson, *The Economics of Imperfect Competition* 144 (2d ed. 1969).

for the time being, courts should retain the system under which damages are calculated on the basis of the plaintiff's losses rather than the defendant's gains. First of all, whether deterrence or compensation is the underlying goal of private antitrust enforcement, a powerful case can be made that the framers of the antitrust laws intended damages as compensation. Most obviously, § 4 of the Clayton Act authorizes a private plaintiff to sue and "recover three-fold the damages by him sustained * * *."⁴¹ Indeed, damages based on compensation are a virtually universal attribute of private litigation in every legal area.

In addition, an economic as well as a legislative case can be made for compensatory measurement. The view that the purpose of private damages actions is to deter does not necessarily dictate that damages be based on some formula other than computation of the plaintiff's losses. Within a deterrence system, the amount of any potential transfer from defendants to plaintiffs serves both as the potential defendants' incentive to avoid the activity and as the potential plaintiffs' incentive to bring the action. Presumably, a plaintiff's incentive to sue is not strictly a function of the amount of its losses—that is, if all antitrust recoveries were regulated at \$1,000,000 many plaintiffs would continue to sue, including some whose injuries were less than \$1,000,000 and some whose injuries were far greater. At the time of suit the plaintiff's injuries are "sunk," and the potential recovery must be treated simply as a prospect of future income. Nevertheless, if optimal deterrence damages were so low that plaintiffs were unwilling to undergo the costs and risks of litigation, then optimal deterrence damages would not optimally deter: too few lawsuits would be filed.

Further, there is no reason to believe that compensatory measurement is worse than any other kind of measurement in estimating the optimal amount of damages. Any "optimal damages" rule applied in litigation will end up being so capricious that the resulting recoveries will have only a random relationship with the optimal level of deterrence. In that case, if all rules for estimating damages are equally good (or equally bad), then a strong case can be made that the damages formula should attempt to maximize social wealth in some other way. Two possibilities come to mind. One is to maximize social wealth by reducing the costs of litigation. For example, a rule that all antitrust damages recoveries will be \$1,000,000 would eliminate damages "computation" entirely. Once standing, violation and antitrust injury had been established, the plaintiff would be entitled to collect its \$1,000,000 and go home.

The alternative rule, which intuitively seems to increase the wealth of society far more, is the compensation rule. At the very least, the compensation rule attempts to quantify the private losses (discounted by gains) of successful plaintiffs. Further, the sum of all private losses, reduced by gains, is the social cost of any activity. Second, if people place any value at all on "redress" or "restoration," then compensatory measurement increases social wealth in a way that cannot be overlooked. Third, our democratic policy as expressed in § 4 of the Clayton Act commands it.

⁴¹15 U.S.C.A. § 15. On the legislative history respecting damages actions, see Herbert Hovenkamp, *Antitrust's Protected Classes*, note __ at 21–30, 41–48.

The Rationale for Treble Damages

Section 4 of the Clayton Act grants a prevailing plaintiff "three-fold the damages * * * sustained."¹ Treble damages for antitrust violations were hardly new with the federal antitrust laws. Already in 1623 the English Statute of Monopolies provided that any person injured by a monopoly "shall recover three times so much as the damages that he sustained by means or occasion of being so hindered * * *."² Few legal rules are more firmly rooted in history than treble damages recovery for victims of antitrust violations.

Although the Sherman Act and later the Clayton Act both provided for treble damages, the Congressional Record suggests that the members of Congress spent very little time debating the issue. Indeed, the members of Congress probably did not believe there would be a great deal of private antitrust enforcement.³

The rationales given for treble damages in private antitrust actions are manifold. Perhaps the oldest is that the antitrust violator deserves to be punished for his crimes, and mere payment of single damages is not punishment enough. This moral argument has gradually given way to an argument based on general deterrence: since not all antitrust violations are detected, a rule providing only single damages would make antitrust violations profitable.⁴

As the previous section suggests, there is no precise correlation between a particular damages rule and the amount of deterrence provided. Viewed in the most favorable light, the treble damages rule must be characterized as a guess that single damages provides too little deterrence and would permit too many antitrust violations to go unchallenged. Likewise, some higher multiplier, such as tenfold damages, would yield overdeterrence and flood the dockets with unmeritorious actions filed by people seeking a quick settlement from a risk averse defendant. There will never be anything approaching a perfect fit.⁵

One thing is clear, however. The treble damages rule has different effects in different areas of substantive antitrust law. Some antitrust violations, such as clandestine price fixing, are quasi-

¹ 15 U.S.C.A. § 15.

² 21 Jac. 1, c. 3 (1623).

³ 21 Cong. Rec. 2569 (1890). Senator Sherman originally proposed double damages. After a few amendments, the final proposal for treble damages was modeled largely after the English Statute on Monopolies. Hans B. Thorelli, *The Federal Antitrust Policy* 212 (1955); Herbert Hovenkamp, *Antitrust's Protected Classes*, 88 Mich. L. Rev. 1 (1989).

⁴ See the discussion, *supra*.

⁵ For a more general discussion, see Robert H. Lande, *Are Antitrust "Treble" Damages Really Single Damages?*, 54 Ohio St. L.J. 115 (1993).

criminal or even criminal in character. A large amount of deterrence and perhaps even moral outrage expressed by punitive damages is appropriate. Other antitrust violations such as mergers generally take place only after the parties have made some kind of calculation that the act is legal. The line between efficiency-creating and efficiency-destroying practices is difficult to locate, and overdeterrence comes with much higher social costs. Furthermore, the case for "punishment" is far weaker.

Congress has entertained proposals that would limit the scope of treble damages recovery in antitrust litigation. For example, one proposal would have provided for treble damages in cases involving *per se* antitrust violations, but single damages for rule of reason violations.⁶ A second proposal would have permitted single damages for lost profits, but treble damages for monopoly overcharges.⁷ Neither proposal passed.

Although segregating antitrust violations for different damages multipliers is a good idea and might reduce excessive litigation in certain substantive areas, the distinction between *per se* and rule of reason violations is not the appropriate place to draw the line. Nor is the distinction between overcharge and lost profit damages. The most plausible rationale for multiple damages is that they provide a proper deterrent in situations where the chances that the defendant will be caught are relatively small. In that case, however, use of the same multiplier would be overdeterrent in situations where the chances of detection are very high.

The best place to draw the line between different damage multipliers is between "clandestine" or secret violations on one side, and "public" violations on the other. Price fixing, predatory pricing, improper patent infringement suits and some other exclusionary practices would generally fit into the former category in which the secrecy of the violation requires a damages multiplier. However, mergers and joint ventures of public record, refusals to deal, resale price maintenance and other vertical restraints would fit into the latter category, in which single damages would be more appropriate. Most mergers are reported in the press or on the internet when they occur. In such cases the inference is strong that the parties undertaking the action did

⁶ See the draft of Reagan Administration Legislation on Antitrust, Patents, and Joint Research and Development Ventures, 44 Antitrust & Trade Regulation Report (BNA) 1272 (June 30, 1983), which would abolish treble damages and grant only single damages except with respect to "agreements or practices the nature or necessary effect of which is so plainly anticompetitive that they are deemed unreasonable and therefore illegal without elaborate study in each individual case as to the precise harm they have caused or the business justification for their use * * *."

⁷ Antitrust Remedies Improvements Act of 1986, Trade Reg. Rptr. (CCH), Report 744 at 21–22 (Feb. 24, 1986). Both proposals are discussed in Herbert Hovenkamp, Treble Damages Reform, 33 Antitrust Bull. 233 (1988). For a survey of alternatives, see Edward D. Cavanagh, Detrebling Antitrust Damages: An Idea Whose Time Has Come?, 61 Tul.L.Rev. 777 (1987).

not believe they were violating the antitrust laws. Further, the probability of detection is 100%.⁸

Most vertical restraints must also be characterized as more public than clandestine. Although the "offense" in such cases is not always obvious to the public, the victim (and most frequently the subsequent plaintiff) is usually a party to the agreement in which the offense was contained. For example, the general public may not have very good knowledge about the "tying arrangement" under which a franchisor requires its franchisees to lease their locations from the franchisor as a condition of obtaining the franchise. However, the plaintiff in such cases is usually the franchisee, not consumers, and the franchisee is a party to the agreement containing the tying arrangement.⁹ Detection of violators in such situations is not a problem, assuming that the franchisee is the person who bears the cost of the violation.

The second problem with dividing treble and single damages actions between *per se* and rule of reason antitrust violations is the complex problem of "characterization" that accompanies a judicial decision whether to apply the rule of reason. For example, although explicit, clandestine price fixing is *per se* illegal, not all agreements among competitors that affect price are illegal *per se*, and it often takes the Supreme Court to tell us which rule should be applied. Likewise, today both the rule of reason and the *per se* rule are applied to tying arrangements, vertical restraints cases, and concerted refusals to deal, depending on the circumstances. Whether a particular act was undertaken in public or in secret with the intent to withhold information from the public, however, is a question of fact.

Finally, a policy of providing treble damages for clandestine activities concealed from the public, and single damages for public activities, would give firms an incentive to "go public" with activities that may be efficient but whose legality is open to some doubt. Exchanges of price information, long-term contractual arrangements, and joint ventures are less likely to be anticompetitive if the public (and the government enforcement agencies) know about them from their inception and are thus able to keep a watchful eye.

How Accurately Must Damages Be Measured?

⁸ See the proposal in Herbert Hovenkamp, *The Antitrust Enterprise: Principle and Execution*, Epilogue, 305-306 (2005).

⁹ E.g., *Queen City Pizza v. Domino's Pizza*, 124 F.3d 430 (3d Cir.1997), cert. denied, 523 U.S. 1059, 118 S.Ct. 1385 (1998).

Any discussion of the accuracy required in measurement of antitrust damages must begin with one premise: the use of private damages actions to enforce the antitrust laws will be undermined by an unrealistic requirement of precision. When a potential plaintiff calculates the chances that antitrust litigation will be successful, he takes into account the risk that he will not be able to prove damages, or that he will not be able to prove an adequate amount of damages. If the probability that he can successfully make out standing, the substantive violation, and antitrust injury is high, but his estimate of damages will likely be thrown out of court, then the action may not be promising.¹ Any system of antitrust enforcement that takes private damages actions seriously must permit plaintiffs to estimate damages by mechanisms that are reasonably within their reach.

Computation of damages often involves more speculation than determining that a particular act is anticompetitive and should be condemned. For example, proof that a price fixing conspiracy existed and even that it raised the price of some product may be relatively easy to establish, but quantifying the increase can be very difficult. In this case, the overcharge is the difference between the price that would have prevailed in a competitive market and the price actually charged by the cartel. In the competitive market, firms presumably would have sold at marginal cost; however, marginal cost would normally be somewhat higher in the competitive market than it was in the cartelized market.² The result is that precise quantification of the cartel overcharge requires not merely knowledge of the defendants' marginal costs—a fact normally out of reach of most courts—but knowledge of what their marginal cost would have been at competitive rates of output. Any legal rule that required the plaintiff to establish this figure with even modest precision would effectively be a rule of nonrecovery.

The Supreme Court has responded to these difficulties by setting a relatively high standard for proof of the *fact* of an antitrust violation and resulting injury, but a lower standard for proof of the amount of damages. As the Supreme Court put it in *Story Parchment Co. v. Paterson Parchment Paper Co.*, "there is a clear distinction between the measure of proof necessary to

¹ Many plaintiffs who did or perhaps could have established a violation have been frustrated by their inability to show damages with sufficient precision. See, e.g., *Blue Cross and Blue Shield United of Wisconsin v. Marshfield Clinic*, 152 F.3d 588 (7th Cir.1998), cert. denied, 525 U.S. 1071, 119 S.Ct. 804 (1999) (plaintiff could not prove damages, but was entitled to an injunction); *United States Football League v. NFL*, 644 F.Supp. 1040, 1051–1054 (S.D.N.Y.1986), affirmed, 842 F.2d 1335 (2d Cir.1988) (jury could not find actual damages without undue speculation about which losses were caused by defendant's violation and which were caused by its own business decisions and fortunes; nominal damages approved). A particularly good discussion of the kind and degree of permissible speculation or uncertainty is Roger D. Blair & William H. Page, "Speculative" Antitrust Damages, 70 Wash. L. Rev. 423 (1995), developed further in 2A Antitrust Law ¶¶ 391-392 (3d ed. 2007).

² That is to say, in the relevant decision making range marginal cost is typically rising, and would thus be higher at the competitive output than the cartel output.

establish the fact that petitioner has sustained some damage and the measure of proof necessary to enable the jury to fix the amount."³

The need for relaxed standards of measurement is augmented by the fact that the uncertainty is often caused by the defendant's control of essential information. In price fixing cases, for example, the relevant cost data that will establish the relationship between the defendant's costs and the cartel price are not only exclusively in the control of the defendants, but thoughtful firms engaged in price fixing may have distorted or destroyed these data. Once again, the Supreme Court has responded that the "risk of the uncertainty" in damages measurement which was created by the defendant's own wrongdoing must ultimately fall on the defendant itself.⁴

This proposition can be carried to extremes, however: the defendant's unlawful acts are presumably responsible for the difference between the plaintiff's actual position and its position had the violation not occurred. Measurement of that difference is certain to require some speculation, even if the defendant produces all relevant evidence. A rule that saddled the defendant with the entire risk of uncertainty of measurement would open the door to unlimited speculation by plaintiffs. At the very least, a defendant who cannot rebut a plaintiff's damages claims with facts must be permitted to challenge their plausibility.

Courts have not gone so far as to throw the entire burden of uncertainty upon the defendant. Rather they have required the plaintiff to establish at least a reasonable basis for belief that its damages equal some particular amount. Then the defendant may give evidence that various elements of the plaintiff's claim should be reduced or eliminated. As the Supreme Court assessed the plaintiff's requirement, "while the damages may not be determined by mere speculation or guess, it will be enough if the evidence show the extent of the damages as a matter of just and reasonable inference, although the result be only approximate."⁵ This effectively forces the plaintiff and defendant to share the risk of uncertainty. In extreme cases—where it is clear at

³ 282 U.S. 555, 562, 51 S.Ct. 248, 250 (1931). *Accord Coastal Fuels of Puerto Rico, Inc. v. Caribbean Petroleum Corp.*, 79 F.3d 182, 200 (1st Cir.), appeal after remand, 175 F.3d 18 (1st Cir.1999).

⁴ See *Eastman Kodak Co. v. Southern Photo Materials Co.*, 273 U.S. 359, 379, 47 S.Ct. 400, 405 (1927):

* * * a defendant whose wrongful conduct has rendered difficult the ascertainment of the precise damages suffered by the plaintiff, is not entitled to complain that they cannot be measured with the same exactness and precision as would otherwise be possible.

See also *Bigelow v. RKO Radio Pictures*, 327 U.S. 251, 265, 66 S.Ct. 574, 580 (1946).

⁵ *Story Parchment*, __ 3, 282 U.S. at 563, 51 S.Ct. at 250.

an early stage that any proof of damage will be highly speculative—the court may dismiss the complaint. The Supreme Court has cited the speculative nature of damage claims as one basis for denying antitrust standing.⁶

The general trend in the lower courts, where most of the antitrust law of damages is made, has been to impose rather strict standards for proof of violation and fact of injury, but to allow greater latitude for estimates of the amount.⁷ One result is that well-prepared plaintiffs come into court with economic experts armed with computer-created models that often rest on many debatable but plausible assumptions. *If* the plaintiff had stayed in business but for the antitrust violation, and *if* its share of the market had persisted, *if* the overall market continued to grow at its pre-violation rate, and *if* the rate of return were not changed substantially by new entry, then the plaintiff would have made this amount of profits. The problem with such models is that any particular assumption, taken alone, may be plausible. However, the models frequently compound one "plausible" assumption upon another with the result that the final outcome must be characterized more as "possible" than plausible.⁸ Then the line between plausibility and speculation becomes rather difficult to locate. Perhaps nowhere is this more true than in the case of damages actions by precluded firms—plaintiffs who allege that they were prevented by the defendant's violation from ever entering business in the first place.

⁶ Associated General Contractors v. California State Council of Carpenters, 459 U.S. 519, 543–544, 103 S.Ct. 897, 911–912 (1983).

⁷ A typical example is this conclusion from the Third Circuit's decision in *LePage's, Inc. v. 3M*, 324 F.3d 141, 166 (3d Cir.2003) (*en banc*), cert. denied, 542 U.S. 953, 124 S.Ct. 2932 (2004), an exclusionary practices case:

In *Bonjorno v. Kaiser Aluminum & Chem. Corp.*, 752 F.2d 802, 812 (3d Cir.1984), this court stated that "[i]n constructing a hypothetical world free of the defendants' exclusionary activities, the plaintiffs are given some latitude in calculating damages, so long as their theory is not wholly speculative." *Id.* Once a jury has found that the unlawful activity caused the antitrust injury, the damages may be determined without strict proof of what act caused the injury, as long as the damages are not based on speculation or guesswork. *Id.* at 813. The *Bonjorno* court noted that it would be extremely difficult, if not impossible, to segregate and attribute a fixed amount of damages to any one act as the theory was not that any one act in itself was unlawful, but that all the acts taken together showed a § 2 violation. *Id.*

⁸ For some of the problems produced by strings of plausible assumptions see *Litton Systems, Inc. v. AT & T*, 700 F.2d 785, 822–24 (2d Cir.1983), cert. denied, 464 U.S. 1073, 104 S.Ct. 984 (1984); *Malcolm v. Marathon Oil Co.*, 642 F.2d 845, 858 (5th Cir.1981), rehearing denied, 651 F.2d 1016 (5th Cir.), cert. denied, 454 U.S. 1125, 102 S.Ct. 975 (1981). An event whose chance of occurrence is 50–50 is undoubtedly "plausible." However, the chance that five such events will all fall in the plaintiff's favor is approximately 3%.

Measuring Damages for Overcharge Injuries *Introduction*

Basic Conceptual Problems

An "overcharge" injury is the injury suffered by a customer who paid a monopoly price for a product purchased from an illegal monopolist or cartel. The term "overcharge injury" may also describe the injury suffered by a seller for whom the price was suppressed by a monopsonist or buyer's cartel,⁹ or the injury suffered by the purchaser of an illegally tied product.¹⁰

The basic common law rule of compensatory damages is that a plaintiff is entitled to an award of damages that will restore him to the position in which he would have been but for the violation. Antitrust generally follows this rule, with the important difference that once the damages are computed, they are trebled. According to the classic formulation for antitrust damages, the plaintiff is entitled to treble the difference between the price he actually paid or received and the price that would have prevailed in a competitive market.¹¹

The difference between the price actually paid and the competitive price is not necessarily the correct amount to restore the purchaser to the position in which it would have been absent the violation. When the price is raised to monopoly levels the purchaser will often take actions, such as substituting a different product for part of the monopoly product, that will reduce its total damages. As a result, at least in those situations where the victim is itself a business, lost profits rather than the monopoly overcharge might be a more correct measure of damages.¹² In fact, it has been suggested that the Supreme Court adopted the "overcharge" method of computing damages in *Chattanooga Foundry and Pipe Works v. Atlanta* only because the plaintiff was unable to show lost profits.¹³ The plaintiff was a municipal waterworks that paid a monopoly price for

⁹ For example, see *American Crystal Sugar Co. v. Mandeville Island Farms, Inc.*, 195 F.2d 622 (9th Cir.), cert. denied, 343 U.S. 957, 72 S.Ct. 1052 (1952); *In re Beef Industry Antitrust Litigation*, 600 F.2d 1148 (5th Cir.1979), cert. denied, 449 U.S. 905, 101 S.Ct. 280 (1980).

¹⁰ See generally Ch. 10.

¹¹ See *Chattanooga Foundry & Pipe Works v. Atlanta*, 203 U.S. 390, 396, 27 S.Ct. 65, 66 (1906): " * * * the difference between the price paid and the market or fair price * * *;" see also *Reiter v. Sonotone Corp.*, 442 U.S. 330, 340, 99 S.Ct. 2326, 2331, on remand, 602 F.2d 179 (8th Cir.1979).

¹² However, in 1979, in *Reiter v. Sonotone Corp., Id.*, the Supreme Court recognized that consumers may have damages actions for violations of the antitrust laws. The lost profits measure of damages would be inappropriate for them.

¹³ Note __; and see Lawrence A. Sullivan, *Handbook of the Law of Antitrust* 788 (1977); Jeffrey L. Harrison, *The Lost Profits Measure of Damages in Price Enhancement Cases*, 64 *Minn.L.Rev.* 751, 760 (1980).

underground pipe. There were no measurable lost profits because the utility passed all its costs on to Atlanta's residents in the form of higher water rates.¹⁴ Not being able to show lost profits—at that time considered the ordinary measure of damages in all antitrust cases—the plaintiff sought recovery of the overcharge instead.

Today the overcharge method of computing damages is well established. Although both measures of damage are difficult to compute, overcharges remain easier to calculate in most cases than are lost profits, and the amount of speculation is usually less. The case has been made for a return to the lost profits method of damages computation in overcharge actions, particularly when the injured buyers include both direct and indirect purchasers.¹⁵ But courts have declined the invitation, and the Supreme Court's adoption of the indirect purchaser rule in *Illinois Brick Co. v. Illinois* makes such a rule unlikely.¹⁶

The concept of *overcharge* is not self-defining, however. The total amount of monopoly profits in a sale is the difference between the actual price and the seller's marginal cost. The overcharge "caused" by a particular antitrust violation could be considerably less if the market was not performing competitively before the violation occurred. For example, markets conducive to cartelization are likely candidates for oligopoly price leadership or tacit collusion.¹⁷ As a result, the pre-cartel price may not have been a competitive price at all but a monopoly price. At the extreme, a newly formed cartel might decide not to increase its price at all from the pre-cartel, oligopoly level, but merely to organize the market better so that sales will be assigned to the lowest-cost provider. In that case the "overcharge"—as measured by the difference between the pre-cartel and cartel prices—would be zero. However, the "overcharge" as measured by the difference between the cartel price and the competitive price might be quite substantial.

The same situation applies to single-firm monopolists. In *Berkey Photo, Inc. v. Eastman Kodak Co.*, the plaintiff claimed damages both as competitor and as direct purchaser from the

¹⁴ Actually, to say there were *no* lost profits is not quite correct. Presumably the Atlanta waterworks sold less water when it raised its rates. Thus it might have suffered lost profits even though its rate of return on sales remained constant. However, many utilities face very low elasticities of demand, and the amount of sales lost may have been very small. Furthermore, the monopoly overcharge in the Atlanta waterworks case was in a durable item—steel pipe—whose costs would be calculated into the utility's rate base. Most price-regulated utilities receive a rate designed to give them their operating expenses plus a "fair rate of return" on the capital invested in fixed-cost materials. In that case an overcharge in a fixed-cost item could actually increase the utility's gross profitability, although its rate of return would remain the same.

¹⁵ See Harrison, note ____; and George Kosicki & Miles B. Cahill, *Economics of Cost Pass Through in Indirect Purchases Antitrust Cases*, 51 *Antitrust Bull.* 599 (2006).

¹⁶ 431 U.S. 720, 97 S.Ct. 2061 (1977).

¹⁷ See Hovenkamp, *Federal Antitrust Policy*, § 4.2.

defendant.¹⁸ With respect to the latter, the Second Circuit observed that the defendant Eastman Kodak had already been a monopolist before it engaged in the exclusionary practices alleged to be illegal. A monopolist whose position is lawfully created is generally entitled to charge a monopoly price.¹⁹ As a result, damages should not equal the entire difference between the monopoly price and a competitive price, but rather "the price increment caused by the anticompetitive conduct that originated or augmented the monopolist's control over the market."

This constraint may overlook the fact that not all illegal, anticompetitive conduct raises the monopolist's profit-maximizing price. Many of the exclusionary practices undertaken by the monopolist must be characterized as "mobility barriers"—that is, they are designed not to enable the monopolist to charge a higher price but to prevent its monopoly position from eroding.²⁰ The cost of monopoly is a function both of the amount of the overcharge and inefficient substitutions, and of the duration of the monopoly. Some exclusionary practices such as sabotage, vexatious litigation, or patent fraud may have little effect on the monopolist's short-run profit-maximizing price but may greatly increase the duration of the monopoly by enabling the monopolist to deter competitive entry. In such cases, however, the proper measurement of damages under the rule in *Berkey Photo* is zero. One example of such conduct is predatory entry deterrence by the monopolist. Suppose that Firm A is a monopolist which for some time has charged a monopoly price of \$1.00 for widgets. When Firm B, an aspiring entrant, appears on the scene, Firm A drops its price below short-run marginal cost until Firm B is driven from the market. Then it restores the price to the pre-entry level. In such a case, the proper measure of damages in an action brought by a customer is the difference between the price that the customer is forced to pay and the price that the customer would have paid in a market in which Firm B would have been permitted to enter. It is manifestly *not* the difference between the price Firm A was charging as a legal monopolist and the price that it charged after the predation had done its work.

It may also be difficult for an expert to estimate the damages caused by the particular "anticompetitive conduct that originated or augmented the monopolist's control over the market."²¹ We can at least *conceptualize* the difference between a marginal cost price and a price

¹⁸ 603 F.2d 263 (2d Cir.1979), cert. denied, 444 U.S. 1093, 100 S.Ct. 1061 (1980). Quotation at p. 297. Accord *City of Vernon v. Southern Cal. Edison Co.*, 955 F.2d 1361, 1371–1372 (9th Cir.), cert. denied, 506 U.S. 908, 113 S.Ct. 305 (1992); *Allegheny Pepsi-Cola Bottling Co. v. Mid-Atlantic Coca-Cola Bottling Co.*, 690 F.2d 411, 415 (4th Cir.1982).

¹⁹ See 3 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* § 6.1 (4th ed. 2011) (forthcoming).

²⁰ See generally ch. 7; Steven C. Salop, *Strategic Entry Deterrence*, 69 *Amer.Econ.Rev.* 335 (1979).

²¹ The Second Circuit's proposal in *Berkey Photo* itself suggests the complexity of damages determination that would follow:

dictated by the intersection of the monopolist's marginal cost and marginal revenue curves. However, assuming that a monopolist was alleged to have committed two or three different exclusionary practices—perhaps predatory pricing, vexatious litigation, and patent fraud—it may be impossible to determine how to assign part of the monopolist's price increase to the patent fraud, part to the vexatious litigation, etc. But this division would be essential to damages recovery if one alleged practice were found to be illegal while the others were not.

The great majority of consumer actions for overcharge damages allege price fixing, not illegal monopolization. Cartel members, unlike monopolists, enjoy no presumption that they already had market power before the illegal act was committed. As a result, the damages rule for price fixing cases is somewhat clearer: the plaintiff is entitled to the difference between the "competitive" price and the cartel price, multiplied by the number of units purchased, multiplied by three.

Methods of Measurement: "Yardstick" and "Before-and-After"

Assuming that the cartel price less marginal cost in a competitive market is the correct determinant of overcharge damages, courts would be unable to quantify damages very precisely. They usually cannot measure marginal cost directly. But courts have developed two surrogates for the competitive price. Under the "yardstick" approach the price that prevails in a different market, similar to the cartelized market but presumed to be competitive, becomes the surrogate for the competitive price. Under the "before-and-after" method the price that prevailed in the cartelized market before the cartel came into existence or after it fell apart is presumed to be the competitive price. These two approaches have been used by courts not only to estimate overcharges but also to estimate lost profits in competitor antitrust suits.

The courts are currently divided on the question whether the "yardstick" and "before-and-

The wrongful conduct rule indicates that a purchaser can recover for an overcharge paid to a violator of § 2 only to the extent that the price he paid exceeds that which would have been charged in the absence of anticompetitive action. An intermediate step in the analysis may be an attempt to estimate what the monopolist's market share would likely have been but for the illegitimate conduct; it would then be possible to gauge approximately what price the defendant would have been able to charge with that degree of market control.

603 F.2d at 298. See also *Hanover Shoe, Inc. v. United Shoe Mach. Corp.*, 392 U.S. 481, 88 S.Ct. 2224, rehearing denied, 393 U.S. 901, 89 S.Ct. 64 (1968), holding that a monopolist in shoe machinery violated the Sherman Act by refusing to sell its machines, but offering them only under lease. The plaintiff was awarded the "excess of leasing costs over what it would have cost to own the same machines had they been available for purchase." Presumably, however, the defendant's profit-maximizing price was the same regardless of whether it sold the machines or leased them. In that case Hanover's damages would be zero.

after" methodologies are the only way that plaintiffs can prove antitrust damages. The question involves mainly exclusionary practices.

Yardstick Method

The yardstick method of estimating damages was approved by the Supreme Court in 1946, in *Bigelow v. RKO Radio Pictures, Inc.*²² Under the yardstick method the plaintiff identifies some geographic market that is as similar as possible to the cartelized market, but for the conspiracy. Obviously, the yardstick method has certain inherent limitations. If the conspiracy is worldwide, there will be no other terrestrial geographic market with which the cartelized market can be compared. Even if the conspiracy is nationwide, the problems of comparison are substantial. Different countries tax and subsidize businesses in different ways and, as a result, firms in different countries can face very different costs. Experts might also select a different product market rather than a different geographic market as a "yardstick." However, that methodology generally works only in exclusionary practice cases.

The ideal conspiracy for the yardstick approach is a local cartel where a nearby market can be found which has the same basic cost structure. Adjustments must probably be made for differences in taxes and regulatory fees, costs of transportation, and different wage and salary rates. However, if these differences can be isolated and quantified, an expert economist or accountant should be able to produce a "reconstructed" price that would have prevailed in the cartelized market if it had the same level of competition as exists in the yardstick market.

A good illustration of the method in practice is *Greenhaw v. Lubbock County Beverage Ass'n*, which involved a price fixing conspiracy among liquor retailers in Lubbock County, Texas.²³ In estimating damages the plaintiff's expert compared prices in Lubbock County during

²² 327 U.S. 251, 66 S.Ct. 574, rehearing denied, 327 U.S. 817, 66 S.Ct. 815 (1946). *Bigelow* applied the yardstick method not to estimation of monopoly overcharge, but to estimation of lost profits.

²³ 721 F.2d 1019, 1026 (5th Cir.1983), rehearing denied, 726 F.2d 752 (5th Cir.1984). See also *National Farmers' Org. v. Associated Milk Producers*, 850 F.2d 1286, 1294–1298 (8th Cir.1988), cert. denied, 489 U.S. 1081, 109 S.Ct. 1535 (1989) (permitting different geographic area to be used as a yardstick, in spite of numerous differences, but no alternative method seemed any better); *Metrix Warehouse, Inc. v. Daimler-Benz Aktiengesellschaft*, 828 F.2d 1033, 1044 (4th Cir.1987), cert. denied, 486 U.S. 1017, 108 S.Ct. 1753 (1988) (requiring "reasonable comparability" between plaintiff's market and yardstick market); *Home Placement Serv. v. Providence Journal Co.*, 819 F.2d 1199, 1205–1206 (1st Cir.1987) (same). See also *Piggly Wiggly Clarksville, Inc. v. Interstate Brands Corp.*, 100 Fed.Appx. 296, 2004 WL 1245275 (5th Cir.2004) (faulting expert's yardstick damages model for including variables such as "negotiating ability" that were too difficult to quantify: "We question whether these factors can be included in a general formula, since a variable cannot be included in a regression formula unless a numerical value can be assigned to it.").

the conspiracy period with those that prevailed in Dallas, which was presumably competitive. First, the expert developed a ratio that reflected cost differentials between the two markets, and from this ratio calculated what were described as "should have been" prices for the defendants' products during the conspiracy years. From these prices the expert was then able to estimate that the cartel overcharged purchasers by about 7.74%. This percentage of the defendants' total sales during the conspiracy period equaled the aggregate monopoly overcharge.²⁴

Before-and-After Method

While the "before-and-after" method of estimating damages has a longer pedigree than the yardstick method,²⁵ it can involve even more speculation.²⁶ Under the before-and-after method, the plaintiff produces evidence about the market price before the alleged cartel was formed or after it ceased to exist, or both. From these data the fact finder is then asked to reconstruct a competitive price during the conspiracy period. Damages are the difference between this reconstructed price and the actual price charged by the cartel.

If the market in which the cartel occurred is concentrated and conducive to price leadership or tacit collusion, a good deal of monopoly overcharge may be built into the pre-cartel price to begin with. As a result, the before-and-after method may not really measure the difference between the cartel price and a truly "competitive" price at all. More importantly, markets change greatly through time, and the before-and-after model must be adjusted to account for these changes. This problem cannot be solved by the simple device of discounting all dollars to the same value to account for inflation or the Consumer Price Index. The price of some products will rise by much more than the index, while the price of other products will rise by much less. If a substantial change in supply conditions or consumer preference causes a shift in the supply curve or demand curve of the cartelized product, the before-and-after method may substantially

²⁴ For further development, including detailed examples, see 2A Antitrust Law ¶¶ 395b1-397e (3d ed. 2007).

²⁵ See *Eastman Kodak Co. v. Southern Photo Materials Co.*, 273 U.S. 359, 378–79, 47 S.Ct. 400, 405 (1927); *Story Parchment Co. v. Paterson Parchment Paper Co.*, 282 U.S. 555, 561, 51 S.Ct. 248, 250 (1931). Like the yardstick method, the before-and-after method was developed to estimate lost profits rather than overcharge injuries. However, today it is used to estimate both. See *Home Placement*, note ___ at 1205 & n. 7 (discussing both methods; finding before-and-after method inadequate for plaintiff who was driven out of business before it was able to compile a record of profits).

²⁶ For a criticism of the before and after method, see *Isaksen v. Vermont Castings, Inc.*, 825 F.2d 1158, 1165 (7th Cir.1987), finding that simple before and after comparison is inadequate, at least when "other causal factors are at work." See also *In re Aluminum Phosphide Antitrust Litigation*, 893 F.Supp. 1497 (D.Kan.1995) (criticizing and refusing to admit expert's "before-and-after" damage model for methodological failures).

overstate or understate the true measure of damages.

For example, using the before-and-after method to estimate the impact of a uranium cartel would exaggerate the monopoly overcharge if the estimator failed to consider that during the same period a cartel in crude oil also came into existence. The price increase for oil would have pushed the price for uranium up even absent the uranium cartel. In this case, the creation of the oil cartel effectively shifted the demand curve for the uranium to the right. If the before-and-after method is to be accurate, it must take the shift into account.²⁷

If changes in the demand for uranium unrelated to the existence of the cartel are random, however, they will tend to cancel each other out, provided that we look at a long enough time period. If it is possible to have evidence of the market price *both* before the cartel came into existence and after it broke up, then the measurement is likely to be more accurate. Nevertheless, even the most optimistic assessment of the before-and-after method of estimating damages must conclude that it yields only rough approximations of the price that would have prevailed had the conspiracy not occurred.

Both the yardstick and before-and-after methods of measuring overcharge damages can be facilitated by econometric techniques such as regression analysis. The example that follows, which uses a single linear regression in order to estimate damages, is far simpler than any likely to be encountered in litigation. It is presented in order to illustrate the technique. If a regression model is to be used to estimate damages in litigation, an expert should be employed to create the model, estimate the damages, and usually to defend the model in court. The other side may offer its own expert to testify against the proposed model or offer an alternative model more favorable to its position.²⁸

Suppose that macaroni manufacturers are accused of fixing the content of macaroni by agreement at 50% semolina and 50% farina. They do this in order to reduce their demand for

²⁷ The illustration is taken from *In re Uranium Antitrust Litigation*, 617 F.2d 1248 (7th Cir.1980). See also *Conwood Co. v. United States Tobacco Co.*, 290 F.3d 768 (6th Cir.2002), cert. denied, 537 U.S. 1148, 123 S.Ct. 876 (2003), an exclusionary practice case which approved a before-and-after methodology even though the market contained two new firms that accounted for a significant portion of the defendant's slower market share growth. Contrast *Craftsmen Limousine, Inc. v. Ford Motor Co.* 363 F.3d 761 (8th Cir.2004), which correctly rejected an expert's study that ignored the entry of two additional firms which would have affected the parties' growth rates.

²⁸ Regression models are also used to estimate lost profits as a result of illegal exclusionary practices. See Richard C. Hoyt, Dale C. Dahl & Stuart D. Gibson, *Comprehensive Models for Assessing Lost Profits to Antitrust Plaintiffs*, 60 Minn.L.Rev. 1233 (1976). For more technical discussions of such models, see 2A *Antitrust Law* ¶¶ 394-397, 399 (3d ed. 2007); Federal Judicial Center, *Reference Manual on Scientific Evidence* 137 (Washington, D.C.: Federal Judicial Center, 2d ed. 2000). The Third Edition of the *Reference Manual* will be published in 2011.

durum wheat, from which semolina is made, and thus to depress its price.²⁹ They are sued for treble damages by growers and sellers of durum wheat. It has been established that the conspiracy existed and was effective during the harvest and buying seasons of 1994, 1995, and 1996. Now the difference between the depressed price and the competitive price must be estimated for those years. Data about production and price have been produced for a ten year period, 1990–1999. All prices have been adjusted to constant dollars.

The evidence shows that during the ten years in question the market price of durum wheat was as follows:

1990:	\$4.50/	bushel	
1991:	\$5.00	O	
1992:	\$4.00	O	
1993:	\$3.00	O	
1994:	\$4.00	O	(conspiracy year)
1995:	\$3.00	O	(conspiracy year)
1996:	\$5.00	O	(conspiracy year)
1997:	\$5.00	O	
1998:	\$3.00	O	
1999:	\$3.50	O	

It is certainly not apparent from these price data how much the conspiracy depressed the price of durum wheat. Although the price of durum may have been lower than average during the conspiracy years, it was not outrageously low, and it was equally low during some nonconspiracy years. Furthermore, in 1996, which was a conspiracy year, the price was substantially higher than it was in several of the nonconspiracy years.

²⁹ See National Macaroni Mfrs. Ass'n, 65 F.T.C. 583 (1964), affirmed, 345 F.2d 421 (7th Cir.1965). See also *Petruzzi's IGA Supermarkets, Inc. v. Darling–Delaware Co., Inc.*, 998 F.2d 1224, 1238 (3d Cir.1993) (approving similar technique). Cf. *In re Plastic Cutlery Antitrust Litigation*, 1998–1 Trade Cases ¶ 72,107 (CCH), 1998 WL 135703 (E.D.Pa.1998) (describing multiple regression technique for estimating damages in price-fixing case).

The average price of durum over the ten years was \$4.00. Plotting the price of durum for the ten years on the graph in Figure 5 reveals the inconclusiveness of the price data.

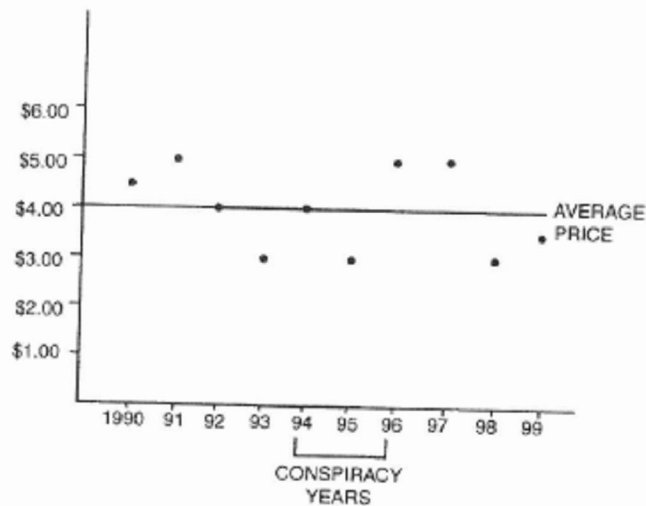


Figure 5

However, the record reveals that the defendants agreed to depress the price of durum during the three conspiracy years because harvests were very bad and the output of durum was much lower than usual. During the ten years in question the harvests of durum were as follows:

1990:	4.7	million	bu.	
1991:	3.7	O	O	
1992:	4.8	O	O	
1993:	7.1	O	O	
1994:	2.9	O	O	(conspiracy year)
1995:	4.6	O	O	(conspiracy year)
1996:	2.6	O	O	(conspiracy year)
1997:	4.2	O	O	
1998:	6.5	O	O	
1999:	6.1	O	O	

The price of durum, like the price of everything else, is a function of the available supply. To be sure, other things, such as consumer tastes or federal regulation and taxation, also affect the price of durum. Likewise, the price of durum will be affected by the price of other products. For example, if the price of a complementary product such as olive oil increases sharply, then the price of durum may decrease. Generally, people who use macaroni products also use olive oil in some constant proportion. A disastrous olive crop might reduce the available supply of olive oil, causing a sharp increase in the olive oil price. If durum is plentiful, however, the chief result of the olive oil shortage will be to reduce demand for durum, and its price will fall. Conversely, if the price of a *substitute* product rises sharply, then the demand for durum will increase and its price will rise. For example, if durum and farina were substitutes in the manufacturing of macaroni, people would respond to a shortage of farina by switching to durum, and the demand for durum would increase.

But let us suppose that these other factors are not notably present. Although consumer taste and the available supply of complementary and substitute products may have had some effect on the price of durum, these effects were both small and were probably unsystematic. If they were truly random, their effects would tend to cancel each other out. So we can say with some confidence that the price of durum during the period 1990–1999 varied inversely with the amount of durum produced in any given year.

Figure 6 shows the relationship between the price and supply of durum during the seven *nonconspiracy* years. Only the nonconspiracy years are plotted, because we want to establish a price function for the nonconspiracy years and then measure how much the price deviated from that function during the conspiracy years.

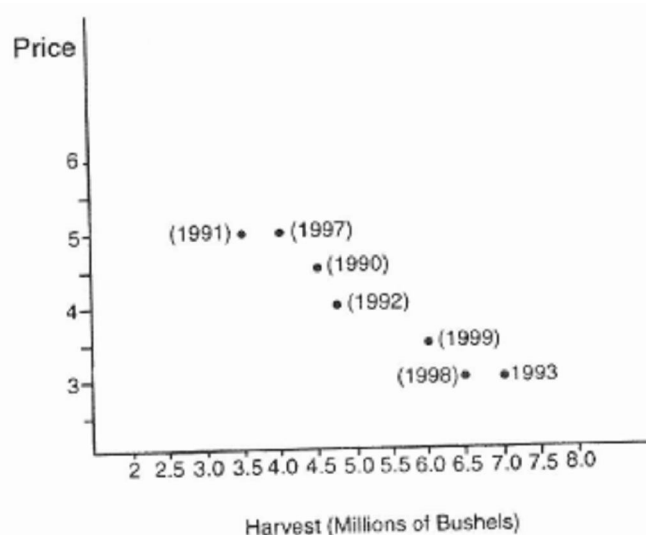


Figure 6 suggests that the size of the harvest and the market price in the nonconspiracy years varied inversely and that the relationship between them may be close to linear—that is, that price rose roughly proportionately to decrease in harvest size. If we could draw a constant curve that accurately described the relationship between price and harvest size in Figure 6, we might

have a basis from which to estimate damages during the nonconspiracy years.

The method most generally used to construct such a curve in simple linear regression analysis is identification of a straight line of least squares—that is, a straight line such that the sum of the squares of each datum's deviation from the line is as small as possible. The equation that represents the data in Figure 6, assuming it is a straight line, is:

$$Y = a + bX + E,$$

in which X and Y are the variables, a and b are constants that will determine the slope of the line, and E is the error, or "disturbance," which reflects the amount that each datum on the graph deviates from the line when it is drawn. When the line is properly drawn the sum of the squares of the individual disturbances will be the smallest possible number; furthermore, the amount of error caused by datum entries that are below the line will precisely cancel out the amount of error caused by entries that are above the line; so the net error will be zero.

Importantly, a regression does not *prove* that deviations from the determined function are random. In this case, linear regression will enable us to draw a line that represents a function determined by a given set of data, *assuming* that all deviations from the function are both relatively small and random. When the function is drawn, the upward and downward deviations will cancel each other out; however, this is because we assumed randomness, and not because the line establishes randomness.

Many of the problems that arise in damages litigation using regression models concern the assumption that a particular disturbance is random. For example, in the earlier illustration about the OPEC cartel's being created during the existence of a uranium cartel, the OPEC cartel would almost certainly have to be treated as a significant nonrandom disturbance: its effect could have been to raise the noncartel price of uranium substantially. In that case the effect of the OPEC cartel on the market for uranium must be computed separately.

If we cannot identify any substantial, nonrandom factors other than supply that might influence the price of durum, our price function will have a slope to conform to the data entered in the graph in Figure 6, such that the sum of the squares of the disturbances, $\Sigma(E^2)$ is, as small as possible. The formula for such a line consists of the following pair of equations:

$$(I) \Sigma(Y) = Na + b\Sigma(X)$$

$$(II) \Sigma(XY) = a\Sigma(X) + b\Sigma(X^2),$$

in which N equals the number of data in the sample.³⁰

³⁰ There is nothing particularly magic about drawing a function that minimizes the sum of the *squares* of the distances from the plotted data. One could as easily use absolute values, the absolute value of the cubes of the data, or the data raised to the fourth power. Statisticians used

In Figure 6 (on the preceding page) the price information was plotted on the X axis and harvest information was plotted on the Y axis; so X = price, and Y = quantity. From the price and harvest information presented above, we can determine the following:

X	Y	XY	X ²
4.50	4.7	21.15	20.25
5	3.7	18.5	25
4	4.8	19.2	16
3	7.1	21.3	9
5	4.2	21	25
3	6.5	19.5	9
3.50	6.1	21.35	12.25
$\Sigma(X) = 28$	$\Sigma(Y) = 37.1$	$\Sigma(XY) = 142$	$\Sigma(X^2) = 116.5$

Substituting these values into the pair of equations above gives us:

$$(I) 37.1 = 7a + 28b$$

$$(II) 142 = 28a + 116.5b$$

Multiplying (I) by 4 gives:

$$(I) 148.4 = 28a + 112b$$

and subtracting (II) from (I) yields:

$$6.4 = 4.5b;$$

$$\text{or } b = 1.42$$

least squares largely as a matter of convention.

The pair of equations given in the text for producing the line of least squares is derived rather easily. See Wolfram MathWorld Web Mathematics Resource, available at <http://mathworld.wolfram.com/LeastSquaresFitting.html> (revised Aug. 30, 2010). Print sources include Modern Scientific Evidence: The Law and Science of Expert Testimony, chs. 4-6 (David L. Faigman, et al, eds., 2009-2010 ed.).

and substituting this into (I) yields $a = 10.98$.

This means that the function is

$$Y = 10.98 - 1.42X$$

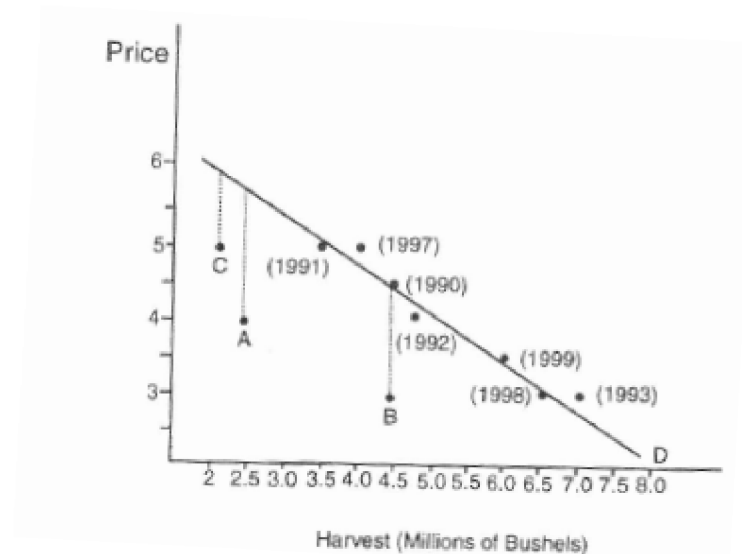


Figure 7 gives the resulting demand curve (D), superimposed over the same data that appeared in Figure 6. Now we can enter the data from the three conspiracy years and measure the amount that the actual price in those years deviated from the "reconstructed" price exhibited on the regression function. Points A, B and C on Figure 7 show the price-harvest size coordinates for the three conspiracy years. Point A reveals that during the first year of the conspiracy the price of durum was depressed about \$1.70 per bushel from the competitive price. Point B reveals that during the second year the price was depressed about \$1.50. Point C shows that during the third conspiracy year price was depressed about 85 Damages for each of those years should equal the amount each plaintiff sold multiplied by the deviation from the reconstructed "competitive price" curve. This amount, of course, must then be trebled.

Damages for Exclusionary Practices

When Are Damages Due?

Any opportunity for monopoly profits naturally attracts new investment. Firms inside the market will try to increase output, and firms outside will try to enter. The monopolist or aspiring monopolist may respond by various acts designed to discourage such competition. These acts include the "exclusionary practices" identified by courts as supporting a Sherman § 2

monopolization or attempt offense.¹ Acts thought to facilitate monopoly pricing also include tying arrangements in which the injury falls upon a competitor in the tied product market, and exclusive dealing contracts, concerted refusals to deal and other concerted conduct. More problematically, they may also include mergers, resale price maintenance and nonprice restraints.

In all these cases, the plaintiff generally claims damages for what may be loosely characterized as lost profits. The basis of the loss may be a reduction in market share, a smaller markup per unit sold, an existing firm's loss of investment or business assets, or preclusion from entry into a profitable business. In most such cases, the measure of damages is so imprecise that "loss of the opportunity to do business" would describe the plaintiff's loss more accurately than "lost profits," which suggests a sum that is quantifiable with a fair amount of precision.

When a plaintiff proves the existence of a price fixing conspiracy and demonstrates that she purchased the cartelized product, the inference is strong that the plaintiff suffered anticompetitive injury. In the case of exclusionary practices, the inference of anticompetitive injury is more ambiguous, even if the fact of the antitrust violation is clearly established. Under the "antitrust injury" doctrine developed in *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, the plaintiff may recover damages only for anticompetitive injury—that is, injury which "flows from that which makes defendants' acts unlawful."²

This ambiguity in the relationship between conduct and injury in exclusionary practices cases results from two things. First, the phenomenon that governed the *Brunswick* decision itself was the "incipiency" test under which conduct is evaluated under the Clayton Act. Practices such as mergers, tying arrangements and exclusive dealing are illegal when they merely "tend to" create a monopoly, or where their effect "may be" substantially to lessen competition.³ Under the incipiency test, conduct is often condemned on the theory that if it were allowed to continue, monopoly might emerge at some future time, even though it has not done so yet. The most extreme form of the incipiency test is applied to mergers. Even under the relatively lenient standards established in the 1992 Horizontal Merger Guidelines, the threshold of illegality for mergers is far lower than will support any inference that the post-merger firm is a monopolist or is actually engaging in collusion or an exclusionary practice.⁴

The incipiency test raises the likelihood that conduct condemned under the Clayton Act

¹ See Chs. 6–8.

² 429 U.S. 477, 489, 97 S.Ct. 690, 697 (1977).

³ For example, see *Brown Shoe Co. v. United States*, 370 U.S. 294, 317, 82 S.Ct. 1502, 1520 (1962), noting that the Celler–Kefauver amendments to § 7 of the Clayton Act were designed to arrest mergers "at a time when the trend to a lessening of competition * * * was still in its incipiency."

⁴ See Hovenkamp, *Federal Antitrust Policy*, § 12.4.

has not caused any anticompetitive injury at all at the time of litigation. In such cases injunctive relief might be appropriate: the private plaintiff might wish to protect itself from threatened anticompetitive conduct. However, damages based on anticompetitive injury will not be owing until anticompetitive injury has actually occurred.⁵

The second problem with private damages actions for exclusionary practices is more pervasive, and is a function of severe limitations on the judicial fact-finding process. By definition, anticompetitive acts cause *public* injuries. Competition is that state of affairs that maximizes social wealth, and any deviation from competition impoverishes society as a whole. But private plaintiffs do not sue in order to vindicate public injuries. They wish to vindicate private injuries—their own. Unfortunately, both efficiency-creating and efficiency-destroying practices can cause substantial private injuries. The problem is particularly acute when the plaintiff and defendant are competitors, for nothing succeeds like efficiency in injuring one's competitors.⁶

If one principle can be said to underlie the "antitrust injury" doctrine developed in *Brunswick*, it is that a plaintiff should be able to recover damages only if its own private injury and injury to the public coincide in some way. Many efficiency-creating practices are of marginal legality at the time they are undertaken. A rule that permitted a plaintiff to recover for all injuries once an antitrust violation is shown to have occurred could yield outrageous overdeterrence. That in turn could encourage firms to avoid efficient, aggressive conduct that might subsequently be characterized as an antitrust violation.

Damages for Lost Sales and Market Share

In most cases involving exclusionary practices the plaintiff seeks compensation for what is generally characterized as "lost profits."⁷ Such actions include competitor lawsuits alleging illegal monopolization, attempt to monopolize or predatory pricing, tying arrangements or exclusive

⁵ See Phillip E. Areeda, Antitrust Violations Without Damage Recoveries, 89 Harv.L.Rev. 1127 (1976). See also *Blue Cross and Blue Shield United of Wisconsin v. Marshfield Clinic*, 152 F.3d 588, 591 (7th Cir.1998), cert. denied, 525 U.S. 1071, 119 S.Ct. 804 (1999) (awarding an injunction when plaintiff could show causation but not damages because there was no way of measuring the latter).

⁶ See Herbert Hovenkamp, *Merger Actions for Damages*, 35 Hastings L.J. (1984).

⁷ For example, *H.J., Inc. v. ITT*, 867 F.2d 1531, 1549 (8th Cir.1989) ("the present value of profits lost as a result of [the defendant's] improper actions"); *Sciambra v. Graham News*, 841 F.2d 651, 657 (5th Cir.1988) (lost profits, or going concern value as an alternative for firms excluded entirely from the market). See also *Los Angeles Memorial Coliseum Commission v. National Football League*, 791 F.2d 1356, 1367 (9th Cir.1986) ("A plaintiff's antitrust damages are to be calculated 'by a comparison of profits, price and values as affected by the conspiracy, with what they would have been in its absence under freely competitive conditions.'").

dealing, illegal mergers, concerted refusals to deal, and violations of the Robinson–Patman Act. Also included are actions brought by firms who deal with or formerly dealt with the defendant, such as terminated distributors or retailers. The latter lawsuits often allege illegal vertical price or nonprice restraints. However, they might also allege any one of the antitrust violations listed above.

Once standing, violation, causation and antitrust injury have been established,⁸ computation of damages in such cases is generally the same regardless of the nature of the substantive violation. However, the nature of the violation and the pre-litigation relationship between the defendant and plaintiff will be a factor in the court's decision about how much of the plaintiff's injury was caused by the defendant's violation and how much resulted from the plaintiff's own actions or from other causes.

Actions for "lost profits," or loss of the opportunity to do business, are generally of three kinds: 1) actions in which the plaintiff continues to be a going concern but alleges that it lost sales or market share as a result of the defendant's violation, or that the antitrust violation increased its cost of doing business; 2) actions in which the plaintiff alleges that it was put out of business by the violation;⁹ 3) actions in which the plaintiff alleges that the violation precluded it from ever entering business in the first place.

In all cases the principle underlying the computation of damages is that the plaintiff is entitled to be put in a position, ignoring trebling, that it would have been in had the anticompetitive conduct not occurred. This generally means that the court must entertain certain assumptions that cannot be established with anything approaching certainty—for example, that the plaintiff's business would have continued to do as well as it did before the violation occurred.

When the plaintiff was established in business before the violation occurred and remains in business thereafter, courts generally estimate the plaintiff's loss by one of three methods: the "before-and-after" method, the "yardstick" method, or the "market share" method. The first two of these methods are also used to estimate overcharge damages.

Courts currently disagree about whether the "yardstick" and "before-and-after" methodologies are the exclusive means by which a plaintiff can prove its damages. The trend is to require that damages be measured by one of these methodologies. For example, in *Marshfield Clinic* the Seventh Circuit held that a plaintiff who could not prove damages under either methodology was not entitled to collect them.¹⁰ Some courts have suggested that alternative

⁸ See Ch. 16.

⁹ For example, *Sciambra v. Graham News Co.*, 841 F.2d 651, 657 (5th Cir.1988) (terminated dealer).

¹⁰ *Blue Cross and Blue Shield United of Wisconsin v. Marshfield Clinic*, 152 F.3d 588, 592 (7th Cir.1998), cert. Denied, 525 U.S. 1071, 119 S.Ct. 804 (1999).

methodologies may be acceptable when the data for using either of the generally accepted methodologies are unavailable.¹¹ The *Conwood* decision in the Sixth Circuit went much further, permitting damages to be proven by a novel and untested methodology even when the data were available for both the "yardstick" and "before-and-after" tests.¹² As discussed in § 16.8c, not only was the methodology novel, it was also based on faulty economic reasoning and ignored many market factors unrelated to the defendant's anticompetitive conduct that had a significant impact on the plaintiff's growth. *Conwood* makes a good case for extremely harsh scrutiny of novel damages methodologies, particularly when the data for the traditional methodologies are readily available, as they were in that case.

Before-and-After Method

In the "before-and-after" method the court looks at the plaintiff's business before the violation occurred, during the violation period, and after the violation ended, and estimates the amount that the violation reduced the plaintiff's profits. In its simplest form the theory looks at the plaintiff's net profits before and after the injury period, discounts all dollars to their present value, and gives the plaintiff a sum that, before trebling, will bring its earnings during the injury period up to the same average level as its earnings during the noninjury periods.¹³ For example, suppose that the plaintiff establishes that the defendant engaged in predatory pricing during the years 1995–1998. The plaintiff's profits for the period 1992–1999, in constant dollars, were as follows:

1992: \$60,000

1993: \$50,000

¹¹ *State of New York v. Julius Nasso Concrete*, 202 F.3d 82, 88–89 (2d Cir.2000) ("dearth of market information" may lighten plaintiff's evidentiary burden). *Accord Eleven Line v. North Tex. State Soccer Ass'n, Inc.*, 213 F.3d 198, 207 (5th Cir.2000).

¹² *Conwood Co. v. United States Tobacco Co.*, 290 F.3d 768, 784 (6th Cir.2002), cert. denied, 537 U.S. 1148, 123 S.Ct. 876 (2003). Conventional "yardstick" and "before and after" methodologies showed zero damages; the expert's alternative methodology ended up with an award of actually damages of \$350 million, or more than one billion dollars after trebling.

¹³ See *Story Parchment Co. v. Paterson Parchment Paper Co.*, 282 U.S. 555, 566, 51 S.Ct. 248, 251–52 (1931); *Bigelow v. RKO Radio Pictures*, 327 U.S. 251, 266, 66 S.Ct. 574, 580 (1946); 2 *Antitrust Law* ¶ 397 (3d ed. 2007).

1994:	\$60,000	
1995:	\$35,000	(violation year)
1996:	\$20,000	(violation year)
1997:	(\$5,000)	(violation year)
1998:	\$10,000	(violation year)
1999:	\$50,000	

The plaintiff's average profits during the nonpredatory years were \$55,000. Before trebling, the plaintiff is entitled to an amount that will bring its profits up to \$55,000 for each of the predatory years—\$20,000 for 1995, \$35,000 for 1996, \$60,000 for 1997, and \$45,000 for 1998. The plaintiff's damages will be \$160,000 x 3, or \$480,000.¹⁴

Obviously, the above example ignores dozens of contingencies that could affect profitability in any market. At one time courts were generally of the view that the highly contingent nature of the before-and-after approach rendered such damages estimates far too speculative. In *Bigelow v. RKO Radio Pictures*,¹⁵ however, the Supreme Court held that any imprecision in the calculation of damages was the result of the defendant's wrongful conduct; therefore the defendant should bear the risk of any uncertainty of measurement.

If the contingencies affecting the plaintiff's profitability are random or unknown, the before-and-after method is as likely to understate as to overstate the plaintiff's loss. As a result, simple use of the method without consideration of truly random or completely unknown contingencies does not really transfer the risk of uncertainty to the defendant but rests it equally on both parties. However, the advantage is clearly with the plaintiff if the plaintiff is permitted to have every plausible assumption respecting a nonrandom element in its favor.

Information about the plaintiff's performance during the noninjury years may force some adjustment of the before-and-after computation. For example, if the plaintiff's profits and market share were decreasing steadily even before the violation, then a mere average of the plaintiff's performance in a half-dozen pre-violation years will overstate the damages. The reverse might be

¹⁴ For one application, see *Blanton v. Mobil Oil Corp.*, 721 F.2d 1207, 1216 (9th Cir.1983), cert. denied, 471 U.S. 1007, 105 S.Ct. 1874 (1985). The court approved the jury determination, notwithstanding the possibility that some of the losses could have resulted from things other than the antitrust violation.

¹⁵ 327 U.S. 251, 264, 66 S.Ct. 574, 579 (1946).

true if the plaintiff's profits and market share had been steadily increasing.¹⁶ Likewise, if a larger buyer or seller entered or exited the market during the injury period, or if the demand curve for the product shifted dramatically during the injury period, these adjustments must be taken into account.¹⁷ For example, if a slide rule manufacturer was injured by a competitor's antitrust violation at the same time that electronic calculators were introduced into the retail market, it would be inappropriate to attribute the entire decline in the plaintiff's sales to the antitrust violation.¹⁸

Accommodation of all requisite factors has made the before-and-after method complex, and its use often requires higher forms of mathematics such as multiple and nonlinear regression analysis and—most importantly—a qualified economic or statistical expert.

The extreme complexities of lost profits studies using the before-and-after method can be seen in a series of cases alleging monopolization and predatory pricing against American Telephone and Telegraph Co.¹⁹ In *Litton* the damages study took two years and covered a giant host of variables. It also made a number of assumptions that the defendant challenged unsuccessfully—such as, that the plaintiff would have received its operating certificate promptly absent the defendant's objections, that the plaintiff would have invested far more in research and development than it had actually planned on investing, that the growth rate of AT & T's competitors in the terminal equipment market would be steadily upward, and that the plaintiff

¹⁶ However, businesses that are initially successful frequently exhibit a profit or market share growth rate during the early years that they will not sustain indefinitely. For example, see *Volasco Prods. Co. v. Lloyd A. Fry Roofing Co.*, 308 F.2d 383, 391 (6th Cir.1962), cert. denied, 372 U.S. 907, 83 S.Ct. 721 (1963), where the court refused to believe that the plaintiff's business would have continued indefinitely to grow at a rate of 247% per year.

¹⁷ See *Isaksen v. Vermont Castings, Inc.*, 825 F.2d 1158, 1165 (7th Cir.1987), cert. denied, 486 U.S. 1005, 108 S.Ct. 1728 (1988) (before-and-after method overstated damages when overall market demand for woodstoves diminished during violation period, for reasons having nothing to do with the violation. "All [the plaintiff] did to prove damages was to compare his average profits for several years before and several years during the period of unlawful activity. *Post hoc ergo propter hoc* is not a valid methodology of damage calculation, especially when it is apparent that other causal factors are at work.") See also Richard C. Hoyt, Dale C. Dahl & Stuart D. Gibson, *Comprehensive Models for Assessing Lost Profits to Antitrust Plaintiffs*, 60 Minn.L.Rev. 1233, 1236 (1976).

¹⁸ In such a case the market share method would be more appropriate. The relevant question is not how much the plaintiff's gross sales declined, but how much its share of the slide rule market declined.

¹⁹ *Litton System, Inc. v. AT & T*, 700 F.2d 785 (2d Cir.1983), cert. denied, 464 U.S. 1073, 104 S.Ct. 984 (1984); see also *MCI Communications Corp. v. AT & T Co.*, 708 F.2d 1081 (7th Cir.), cert. denied, 464 U.S. 891, 104 S.Ct. 234 (1983).

would continue to face the same costs that the defendant faced.²⁰

However, an equally complex lost profits study by the Southern Pacific Communications Co., which operated long-distance microwave systems that competed with AT & T's long distance service, foundered because it failed to account for the growing market share of satellite communication, and the increasing tendency of large purchasers of long distance service to build their own internal microwave systems. Furthermore, the study appeared to project a rate of growth that exceeded the plaintiff's capacity.²¹

Yardstick Method

The "yardstick" method of estimating lost profits can sometimes simplify the court's calculations, although it can be used only in limited situations. Under the yardstick approach the plaintiff attempts to identify a market or firm similar to the plaintiff in all respects but for the impact of the antitrust violation. For example, in *Bigelow*, the plaintiff compared its own revenue during the injury period with that earned by a comparable theater operated by one of the defendants.²² In such circumstances, *if* the markets of the two firms are identical, and *if* the plaintiff's firm and the firm used for comparison stand in the same relative position in those markets, offer the same product mix, have comparable managements and are comparable in all other respects, then the fact finder may infer that the two would have had comparable revenues or profits but for the violation.

The above statement of the "yardstick" methodology gives some indication of its inherent weaknesses. To the extent that either the markets or firms being compared are dissimilar, the yardstick theory will not produce a trustworthy estimate of what the plaintiff would have earned but for the defendant's conduct. The method therefore works best in markets that are both local

²⁰ *Litton*, 700 F.2d at 822–24.

²¹ *Southern Pacific Communications Co. v. AT & T Co.*, 556 F.Supp. 825, 1060 (D.D.C.1982), affirmed, 740 F.2d 1011 (D.C.Cir.1984). Other courts have also been critical of speculative damage assumptions. See *McGlinchy v. Shell Chem. Co.*, 845 F.2d 802, 806–807 (9th Cir.1988) (rejecting expert's damage study for not carefully examining underlying market conditions, and which projected that growth of sales would exceed 40% annually while expenses would remain constant); *Olympia Equip. Leasing Co. v. Western Union Tel. Co.*, 797 F.2d 370, 382–383 (7th Cir.1986), cert. denied, 480 U.S. 934, 107 S.Ct. 1574 (1987) (severely criticizing expert damage study as nothing more than advocacy); *Metrix Warehouse, Inc. v. Daimler-Benz Aktiengesellschaft*, 828 F.2d 1033, 1044 (4th Cir.1987), cert. denied, 486 U.S. 1017, 108 S.Ct. 1753 (1988) (expert damages study failed to separate out losses caused by lawful conduct).

²² Note ___. See Robert D. Blair & Amanda Kay Esquibel, *An Econometric Approach to Constructing a Yardstick Model of Damages in Lost Profit Cases*, 72 Den. Univ. L. Rev. 113 (1994).

and relatively homogeneous.²³

Lost Market Share

The third measure of damages for lost profits is generally referred to as the "market share" theory. Actually that term is a misnomer insofar as it suggests that use of the theory invariably requires calculation of the impact of the antitrust violation on the plaintiff's market share. The theory might more appropriately be called the "lost output" theory, because frequently it purports to measure the *absolute* reduction in output suffered by the plaintiff, rather than its percentage decline of some relevant market.

Theoretically, the market share approach can be useful when the antitrust violation is internal to a market, but the market as a whole was also influenced by external shocks during the violation period. For example, suppose that the plaintiff establishes an illegal boycott in the retail gasoline market during a certain period. During the same period, however, the OPEC cartel tripled the price of gasoline, and demand dropped substantially as a result. Under the before-and-after method, it would be impossible to attribute part of the plaintiff's lost profits to the defendants and part to OPEC. Further, the yardstick method might not be available because there is no second market whose characteristics are sufficiently similar.

Presumably, however, the OPEC cartel affected all gasoline sellers proportionately—that is, they all suffered a loss of sales that varied with their volume. As a result their relative shares of the overall market were not affected by OPEC, even though their absolute volume was. If the plaintiff can show that during the violation period its market share dropped from 7% to 3%, it may be possible to separate out the impact of OPEC and compute the damages on the basis of lost market share.²⁴

²³ See *Home Placement Serv. v. Providence Journal Co.*, 819 F.2d 1199, 1205 & n. 7 (1st Cir.1987) (rejecting yardstick approach when there was inadequate evidence that the plaintiff firm and yardstick firm operated in similar situations and conducted their business in a similar manner); *National Farmers' Org. v. Associated Milk Producers*, 850 F.2d 1286, 1294–1298 (8th Cir.1988) (approving yardstick measure notwithstanding numerous differences in two markets, particularly since differences tended to underestimate, rather than overestimate, plaintiff's damages); *Metrix Warehouse* case, note ___ at 1044 n. 21 (approving method generally); *Rose Confections, Inc. v. Ambrosia Chocolate Co.*, 816 F.2d 381, 393–394 (8th Cir.1987) (rejecting study comparing West Coast market and dissimilar midwestern market); *Jay Edwards, Inc. v. New England Toyota Distributor*, 708 F.2d 814, 821 & n. 6 (1st Cir.), cert. denied, 464 U.S. 894, 104 S.Ct. 241 (1983) (approving use where jury apparently took differences between plaintiff and yardstick dealer into account).

²⁴ See *General Leaseways, Inc. v. National Truck Leasing Ass'n.*, 830 F.2d 716, 726 (7th Cir.1987) (approving jury verdict awarding zero damages on market share study); *Dolphin Tours, Inc. v. Pacifico Creative Serv.*, 773 F.2d 1506, 1511–1513 (9th Cir.1985) (market share study good enough to avoid summary judgment).

In practice, the market share method often operates as a variant of either the before-and-after or yardstick theories. For example, in *Zenith Radio Corp. v. Hazeltine Research, Inc.* the plaintiff convinced the court that its market share of the Canadian television market, which was in fact 3%, would have been 16% but for the antitrust violation.²⁵ The plaintiff arrived at the 16% figure by showing that the Canadian and American television markets were similar and that its market share of the American market varied upwards from 16% during the violation period. Thus the market share approach adopted in *Zenith* was little more than a variation on the yardstick approach.

Once the expert has identified a certain loss of market share as the result of the antitrust violation, then he or she must devise an empirical formula that links market share in the relevant market to profitability. Profits are not always proportional to market share. For example, sometimes one firm will be much more profitable than another firm of the same size, and often a firm twice as big as a second firm will not earn twice the profits. Furthermore, such a formula will not generally take into account relevant economies of scale. Nevertheless, the amount of deviation with respect to such a formula may be within the range of error permitted by the courts in estimating damages.

Another problem of the *Zenith* market share approach is that it does not consider the substantial stochastic elements in the determination of any particular firm's market share. The fact that a firm was successful in obtaining a 16% share of one market is not good evidence that it would obtain a 16% share of a different market, even if the two markets are similar. Although *minimum* firm size in a market might be predetermined by relevant economies of scale, the individual sizes of particular firms in that market is largely a matter of chance. To take an example, suppose that 100 firms start out in a new market (home computers) in which minimum efficient scale is 5%. The firms go through a long period of competition, mergers, antitrust violations, lobbying, advertising and innovation. What will be the market structure after 20 years?

²⁵ 401 U.S. 321, 91 S.Ct. 795, rehearing denied, 401 U.S. 1015, 91 S.Ct. 1247 (1971). See also *Multiflex, Inc. v. Samuel Moore & Co.*, 709 F.2d 980, 996–97 (5th Cir.), rehearing denied, 716 F.2d 901 (5th Cir.1983), cert. denied, 465 U.S. 1100, 104 S.Ct. 1594 (1984). The plaintiff sold its hydraulic hose bundles to two groups of customers, end users and manufacturers of equipment that employed the hoses. The defendant allegedly attempted to monopolize the second market but not the first. The plaintiff's expert produced a study indicating that the plaintiff's share of the end user market, in which the violations had little or no effect, was 80%. However, its share of the equipment market, which was affected by the violation, was 63%. Then the expert produced a formula correlating the plaintiff's profits with market share, and estimated the lost profit that resulted from the 17% loss of market share in the affected market. The court approved this method of estimating damages, but finally rejected the model because it failed to segregate Sherman § 1 damages, in which the court found no liability, from Sherman § 2 damages, where it had.

Assuming no tacit or express collusion, it is likely that there would be no remaining firms with a market share substantially less than 5%. That means twenty or fewer firms would survive. Which twenty? *Ex ante*, there is no way to tell, unless some of the starters were obviously more efficient or innovative than others. Furthermore, after this market reaches equilibrium we would probably not find a market with twenty firms of the same size. More likely there would be fewer than twenty firms. Some might have market shares on the order of 30%, others of 15%, and others of 10%. The fact that Zenith was fortunate enough to achieve a 16% share of the American market tells us very little about what share it would acquire in a different market.²⁶

One answer to this criticism of the market share theory is that if the determinants of individual market share are truly random, the plaintiff's share in the Canadian market was equally likely to be less than or more than its actual share of the American market. In that case, however, assuming that we were faced with a market in which several equal-sized firms all entered the business at the same time, it would be more plausible to select the mode among the existing firms as the size that Zenith most likely would have reached but for the violation. This number could be either far larger or far smaller than Zenith's 16% share of the American market.²⁷

A more acceptable variation of the market share theory is evidence about how much a plaintiff's output has been reduced as a result of a particular antitrust violation. If the plaintiff can point to particular sales which it lost as a result of the defendant's violation, and if the plaintiff can then show its rate of profit per sale, damages will be relatively easy to compute. For example, in *Rangen, Inc. v. Sterling Nelson & Sons* the defendant violated the Sherman Act and the Robinson-Patman Act by bribing state officials to accept the defendant's bids for sale of fish food, rather than the bids of the plaintiff or other competitors.²⁸ The plaintiff was able to show that when the bribery had not been a factor, its bids were successful about one-fourth of the time. From this the court inferred that the plaintiff's loss of sales equaled one-fourth of the volume covered by bids that the plaintiff lost to the defendant as a result of the bribery. Lost profits were estimated on the basis of this lost sales volume.

Sometimes a combination of the "before-and-after" and "market share" method of computing damages can yield a reasonable estimate, particularly when the plaintiff operates in several markets but the antitrust violation occurs in only one. For example, *Moore v. Jas. H.*

²⁶ See Frederic M. Scherer & David R. Ross, *Industrial Market Structure and Economic Performance* 141–46 (3d ed. 1990).

²⁷ However, some of the determinants of market share may be internal to the firm. For example, if Zenith's 16% share of the American market was a result of good management, and if the same management would be responsible for entry into the Canadian market, then *ex ante* Zenith might have an advantage over competitors in the Canadian market.

²⁸ 351 F.2d 851 (9th Cir.1965), cert. denied, 383 U.S. 936, 86 S.Ct. 1067 (1966).

Matthews & Co.²⁹ was a competitor-brought tying arrangement case. The plaintiff, which manufactured grave markers, successfully established that the defendant cemeteries illegally required purchasers of cemetery lots to purchase their grave markers and installation from the cemeteries as well. The Ninth Circuit approved evidence that in cemeteries not subject to grave marker ties the plaintiff had been able to attain a market share of 50%, while its share in the restricted cemeteries was only 4%. In addition, when three cemeteries settled out of court and agreed to discontinue the restrictions, the plaintiff's share of sales in those cemeteries rose to 50%. Therefore the plaintiff was entitled to damages based on the difference between the market share it actually obtained in the restricted cemeteries, and the 50% share it likely would have obtained absent the violation.

Damages and Disaggregation

Several courts have held that if part of the plaintiff's loss in profits was caused by unlawful conduct and part by lawful conduct, the plaintiff is entitled to collect damages only for the former.³⁰ As one court noted:

The way Memorex [one of the plaintiffs] structured its damage claim there was no basis in the record for the jury to determine what the effect on damages would be if it found one or more of the challenged acts lawful. Thus, if one of [defendant] IBM's acts was not a violation of the antitrust laws, much of the damage claim would become invalid.³¹

²⁹ 682 F.2d 830, 836–37 (9th Cir.1982). In *Bigelow*, note ___, the plaintiff submitted damages evidence under both the before-and-after and yardstick theories. The measurement under the before-and-after theory was \$125,000, under the yardstick theory \$116,000, and the jury returned a verdict of \$120,000.

³⁰ See *Coastal Fuels of Puerto Rico, Inc. v. Caribbean Petroleum Corp.*, 79 F.3d 182, 200 (1st Cir.), appeal after remand, 175 F.3d 18 (1st Cir.1999) (vacating common damages award for monopolization and price discrimination violations when only the latter verdict was upheld); *Multiflex, Inc. v. Samuel Moore & Co.*, 709 F.2d 980, 997 (5th Cir.), rehearing denied, 716 F.2d 901 (5th Cir.1983), cert. denied, 465 U.S. 1100, 104 S.Ct. 1594 (1984); *MCI Communications Corp. v. AT & T Co.*, 708 F.2d 1081, 1160–63 (7th Cir.), cert. denied, 464 U.S. 891, 104 S.Ct. 234 (1983); *Coleman Motor Co. v. Chrysler Corp.*, 525 F.2d 1338 (3d Cir.1975). See Comment, *Segregation of Antitrust Damages: An Excessive Burden on Private Plaintiffs*, 72 Calif.L.Rev. 403 (1984).

³¹ *ILC Peripherals Leasing Corp. v. IBM Corp.*, 458 F.Supp. 423, 434 (N.D.Cal.1978), affirmed per curiam sub nom. *Memorex Corp. v. IBM Corp.*, 636 F.2d 1188 (9th Cir.1980), cert. denied, 452 U.S. 972, 101 S.Ct. 3126 (1981). See also *City of Vernon v. Southern Cal. Edison Co.*, 955 F.2d 1361, 1371 (9th Cir.), cert. denied, 506 U.S. 908, 113 S.Ct. 305 (1992) (city charged utility with denying access to transmission lines, filing discriminatory rates, group boycott; only the first may have been antitrust violation); *United States Football League v. NFL*, 842 F.2d 1335, 1378–

The one available escape valve from such a high standard of economic proof may be a rule that places the "burden of disaggregation" on the defendant. That is, if there is no way that either party can separate those damages elements caused by wrongful conduct from those caused by conduct held to be lawful, then the plaintiff will be permitted to recover for both. Whether such a rule actually exists is doubtful.³² Whether it should exist is even more dubious. Just as a strict rule requiring a plaintiff to separate out damages caused by illegal acts would impose an impossible burden on the plaintiff, so would a similar rule imposed upon the defendant create an impossible burden. It would permit plaintiffs consistently to recover for both antitrust violations as well as injuries caused by efficiency and competition on the merits.

The problem of assigning a particular amount of damages to a particular exclusionary practice can be made more tractable if the plaintiff bases its damage claim on something other than lost profits. For example, suppose the plaintiff alleges that a competitor monopolist 1) failed to predisclose new technology; and 2) engaged in "sham" enforcement of an invalid patent.³³ The plaintiff then loses on the first claim but wins on the second. Attributing a given profit or market share loss to one or the other of these practices could be impossible, unless the effects appeared in different markets or at different times. However, in the latter case the plaintiff *could* show that it incurred certain costs in litigating against the defendant. In *Premier Electric*, the court held that litigation costs may be recovered as antitrust damages when the underlying violation is use of "sham" litigation to raise rivals' costs.³⁴ This measure of damages is much more plausible. Indeed, lost competitor investment rather than lost anticipated profits provides a better estimator of competitor injuries for a variety of reasons.³⁵

1379 (2d Cir.1988); *Metrix Warehouse, Inc. v. Daimler-Benz Aktiengesellschaft*, 828 F.2d 1033, 1044 (4th Cir.1987), cert. denied, 486 U.S. 1017, 108 S.Ct. 1753 (1988); *Farley Transp. Co. v. Santa Fe Trail Transp. Co.*, 786 F.2d 1342, 1350–1352 (9th Cir.1985).

³² See the *MCI* case, note __ above, at 1161–63; *City of Mishawaka v. American Elect. Power Co.*, 616 F.2d 976 (7th Cir.1980), cert. denied, 449 U.S. 1096, 101 S.Ct. 892 (1981), rehearing denied, 450 U.S. 960, 101 S.Ct. 1421 (1981); *R.S.E. Inc. v. Pennsylvania Supply, Inc.*, 523 F.Supp. 954, 964–65 (M.D.Pa.1981).

³³ See Hovenkamp, *Federal Antitrust Policy*, § 7.11.

³⁴ *Premier Electrical Constr. Co. v. National Elec. Contractors Assn.*, 814 F.2d 358, 371–372 (7th Cir.1987). See also *Kearney & Trecker Corp. v. Cincinnati Milacron, Inc.*, 562 F.2d 365 (6th Cir.1977) (awarding costs of defending anticompetitive patent infringement suit as antitrust damages). And see *Xerox Corp. v. Media Sciences Int'l, Inc.*, 511 F. Supp. 2d 372 (S.D.N.Y. 2007) (costs of defending improper infringement action based on anticompetitive design of complementary product could form basis of antitrust damages).

³⁵ See Hovenkamp, *Federal Antitrust Policy*, § 17.6e.

One indefensible approach to disaggregation is the one taken in the Sixth Circuit's *Conwood* decision. The expert produced a damages study that simply measured the plaintiff's market share growth and did not even purport to distinguish among the effects of unlawful conduct, lawful conduct, and market factors completely outside of the defendant's control, including the entry of two new firms. The court held that the plaintiff could carry its burden simply by instructing the jury that it should find damages only for the unlawful conduct.³⁶ But if the expert cannot separate out the consequences of unlawful conduct why would anyone think the jury could do so? As the Ninth Circuit pointed out in rejecting this approach, such an instruction is useless unless there is some "basis in the record for quantifying" the losses that result from unlawful conduct.³⁷

Terminated Dealers and Firms Driven From Business

When the plaintiff alleges that it was driven completely out of business by the defendant's activity, a new level of uncertainty must be considered. If the plaintiff's demise was gradual, then computation of damages during the years of decline will involve the methods outlined above. In addition, however, the plaintiff will be entitled to an award that will compensate for the loss of its business. If the plaintiff's demise is sudden, as it might be in a dealer termination case, then the plaintiff is entitled only to the latter sum.

Courts generally estimate damages for the destruction of a business by two different methods: the discounted present value of anticipated profits, or the "going-concern" method, which essentially asks what the business was worth to a reasonable buyer before the violation occurred.

In most cases involving the complete destruction of a business, the court attempts to determine the plaintiff's profitability before the impact of the antitrust violation, and from this evidence of profits to project a stream of future profits. Then, under the first approach this stream of future profits will be discounted to its present value. Under the second approach, the evidence of profits will be used to estimate the "going concern" value of the business.³⁸ In any case, loss of

³⁶ *Conwood Co. v. United States Tobacco Co.*, 290 F.3d 768, 784 (6th Cir.2002), cert. denied, 537 U.S. 1148, 123 S.Ct. 876 (2003).

³⁷ *Image Technical Services, Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1224 (9th Cir.1997), cert. denied, 523 U.S. 1094, 118 S.Ct. 1560 (1998).

³⁸ For example, *PSKS, Inc. v. Leegin Creative Leather Products, Inc.*, 171 Fed. Appx. 464 (5th Cir. Mar. 20 2006), rev'd on other grounds, 551 U.S. 877 (2007) (approving expert's damages methodology of projecting future profits and discounting to present value, although apparently without accounting for risk); *Graphic Prods. Distribs. v. ITEK Corp.*, 717 F.2d 1560, 1580 (11th Cir.1983) (measuring going concern value by comparing FMV of business before and after antitrust violation). For a discussion and critique of these methodologies, see 2A Antitrust Law ¶ 393d (3d ed. 2007).

future profits and loss of going concern value are *alternative* measures of injury. The value of the business as a going concern is nothing more than the present value of its profits, plus its salvageable assets. A court should therefore award either the present value of lost future profits or the market value of the business as a going concern absent the violation, but not both.³⁹

The easiest cases involving destruction of a business occur when the plaintiff has had a long period of established profitability and is then terminated immediately by the defendant. If the plaintiff made \$100,000 per year for ten years before termination, then his damages equal the present value of a future stream of income of \$100,000 per year.⁴⁰ Alternatively, the "going concern" value of the business is the fair market value of a business capable of producing \$100,000 per year in profits.

Few cases are that simple. In most, the plaintiff attempts to show that the business was likely to increase and therefore the loss of future profits was actually greater than the record of past profits indicates.⁴¹ The defendant may answer that the plaintiff's business was actually in decline and that the plaintiff would probably have gone out of business even if the antitrust violation had not occurred.⁴² Needless to say, in all such cases the computation of the plaintiff's

³⁹ *Sciambra v. Graham News Co.*, 841 F.2d 651, 657 (5th Cir.1988) (lost profits and going concern are alternative measures); *Graphic Products Distributors, Inc. v. ITEK Corp.*, 717 F.2d 1560, 1579 (11th Cir.1983); *Arnott v. American Oil Co.*, 609 F.2d 873, 886–87 (8th Cir.1979), cert. denied, 446 U.S. 918, 100 S.Ct. 1852 (1980).

⁴⁰ In the case of terminated dealers, many of which are sole proprietorships, courts sometimes look at the age of the plaintiff and measure how long it is likely that the plaintiff would have stayed in business. Thus in *Graphic Products*, *id.*, the court determined from the age of the plaintiff's principals that they would likely work for ten more years. From this the jury estimated the present value of ten years of future profits, and the Eleventh Circuit affirmed. 717 F.2d at 1582 n. 42. But see *Mid-Texas Communications Sys., Inc. v. AT & T Co.*, 615 F.2d 1372, 1391–92 (5th Cir.), rehearing denied, 618 F.2d 1389 (5th Cir.), cert. denied, 449 U.S. 912, 101 S.Ct. 286 (1980), where the court held that the plaintiff (in this case an ongoing concern) could not project lost profits twenty-seven years into the future. This concern with the sole proprietor's age apparently assumes that the business has no sale value when the proprietor retires. If a business is truly a "going concern" replacement of its manager will not ordinarily affect its value. Of course, a franchise might be made nontransferable by the franchisor. In that case the business might end when the current franchisee retires. But such a case is the exception rather than the rule.

⁴¹ For example, see *Terrell v. Household Goods Carriers' Bureau*, 494 F.2d 16, 23 n. 12 (5th Cir.), cert. denied, 419 U.S. 987, 95 S.Ct. 246 (1974), where the court upheld a damages award for future profits even though the business had never earned a profit.

⁴² See *General Electric Credit Corp. v. Grubbs*, 478 F.2d 53, 58–59 (5th Cir.), cert. denied, 414 U.S. 854, 94 S.Ct. 153 (1973), appeal after remand, 513 F.2d 783 (5th Cir.), cert. denied, 423 U.S. 947, 96 S.Ct. 363 (1975).

damages is at least as complex as it is in the situation when the plaintiff remains a going concern.

In dealer termination cases, the plaintiff usually alleges that it was terminated for noncompliance with an illegal restriction, such as resale price maintenance or an unlawful territorial restraint. The plaintiff may be able to show that it would have made more profits during its period of operation had the restraint not been imposed. The court may give an award for the shortfall in past profits and augment the projection of future profits to account for the effect of the restraint.⁴³ However, in its *Isaksen* and *Local Beauty* decisions, the Seventh Circuit held that damages may not be based on the ability of the plaintiff to profit from an antitrust violation imposed on others.⁴⁴ The plaintiffs in both cases claimed their dealerships were terminated because they refused to participate in the defendants' resale price maintenance schemes. The plaintiffs' damages theories were based on the premise that they would be free to set their own price, while RPM would continue to be imposed on other dealers. The court concluded that "damages based on profits made by a plaintiff because of the existence of an antitrust violation are not recoverable."⁴⁵ One implication of *Local Beauty* is that in estimating the plaintiffs damages the court must subtract out all the effects of an antitrust violation, not merely those that injured the plaintiff. To take an obvious example, if a competitor successfully challenges a merger, its damages should be based on profits in the pre-merger market, not in the more concentrated post-merger market.

The going concern measure of damages for destruction of a business also begins with an estimate of future profits, and then capitalizes that estimate, using a multiple that accounts for such factors as the degree of risk, the established growth rate of the particular market, the nature of the arrangement between the plaintiff and its supplier, and the economic outlook. Measurement on the basis of expected future profits and measurement by loss of going concern value are equivalent, and should generally yield similar results.⁴⁶

⁴³ *Eiberger v. Sony Corp. of America*, 622 F.2d 1068, 1081–82 (2d Cir.1980); *Pitchford v. PEPI, Inc.*, 531 F.2d 92 (3d Cir.1975), cert. denied, 426 U.S. 935, 96 S.Ct. 2649 (1976), on remand, 435 F.Supp. 685 (1977), affirmed, 582 F.2d 1275 (3d Cir.1978), cert. denied, 440 U.S. 981, 99 S.Ct. 1790 (1979); *Greene v. General Foods Corp.*, 517 F.2d 635, 660–62 (5th Cir.1975), cert. denied, 424 U.S. 942, 96 S.Ct. 1409 (1976).

⁴⁴ *Isaksen*, note __; *Local Beauty Supply v. Lamaur*, 787 F.2d 1197 (7th Cir.1986).

⁴⁵ *Local Beauty*, 787 F.2d at 1202–1203; see also *Jack Walters & Sons Corp. v. Morton Bldg.*, 737 F.2d 698 (7th Cir.), cert. denied, 469 U.S. 1018, 105 S.Ct. 432 (1984), which implies similar analysis of maximum RPM claims; and *Indiana Grocery v. Super Valu Stores*, 864 F.2d 1409 (7th Cir.1989) (same).

⁴⁶ See *Tire Sales Corp. v. Cities Serv. Oil Co.*, 637 F.2d 467 (7th Cir.1980), cert. denied, 451 U.S. 920, 101 S.Ct. 1999 (1981); *Taxi Weekly, Inc. v. Metropolitan Taxicab Bd. of Trade Inc.*, 539 F.2d 907, 914–15 (2d Cir.1976).

Damages for Precluded Entry

Few claims for damages are more difficult to assess than the plaintiff's allegation that an antitrust violation destroyed its "business" even before it made its first sale. Plaintiffs in such cases often claim lost future profits. Such claims must be taken with a grain of salt, however, for as many as 90% of small businesses fail during the initial years of operation.⁴⁷

The failure rate aside, quantifying the amount of profits that would likely be earned by a firm that has never completed entry into the business is a truly extraordinary task. Clearly, the "before-and-after" approach is inapplicable: there was no "before" and there will be no "after."⁴⁸ The "yardstick" approach of measuring damages requires the fact finder to locate a firm similar to the plaintiff's in a similar market. However, in this case there is no "similar" firm. As a result even these poor estimators of damages are of little value.

At the same time, the vulnerability of unestablished firms makes them particularly easy targets for antitrust violations. In fact, many strategic, entry-detering practices are designed to foreclose rivals before entry is accomplished.⁴⁹ Any rule that barred recovery by unestablished firms would encourage incumbents to deter competitors early, when they are easy targets *and* when the incumbents could be free of damages liability. As a result, a well-designed deterrence policy must permit some kind of redress by unestablished firms injured by anticompetitive practices.

These countervailing considerations—the poor profit prospects and problems of proof on the one hand, and the easy susceptibility of unestablished businesses to antitrust violations on the other—suggest two premises for any antitrust damages policy concerning the unestablished business: 1) unestablished businesses should be able to enforce the antitrust laws by means of

⁴⁷ A.B. Cochran, Small Business Mortality Rates: A Review of the Literature, 19 J. Small Bus. Mgmt. 50 (1981); Comment, Unestablished Businesses and Treble Damage Recovery Under Section Four of the Clayton Act, 49 U.Chi.L.Rev. 1076, 1079 (1982). On the methodologies, see 2 Antitrust Law ¶ 392f2 (3d ed. 2007).

⁴⁸ See *Coastal Fuels of Puerto Rico, Inc. v. Caribbean Petroleum Corp.*, 79 F.3d 182, 200 (1st Cir.), appeal after remand, 175 F.3d 18 (1st Cir.1999) (not rejecting use of before-and-after approach completely, but concluding that it "requires an appraisal of the reliability of a firm's track record, and the length of that track record is one factor to consider ...").

⁴⁹ For example, strategic pricing is probably used much more often to keep prospective rivals out of the market than to bankrupt firms already in business. See Oliver E. Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 Yale L.J. 284 (1977); Oliver E. Williamson, "Antitrust Enforcement: Where It Has Been; Where It Is Going," in John V. Craven, ed., *Industrial Organization, Antitrust, and Public Policy* 41–68, 53 (1983).

damages actions; however 2) lost anticipated profits is not the best measure of damages.

The initial hurdle that most plaintiffs confront in cases of precluded entry is not damages but standing. This issue is discussed in § 16.5a. If a court finds the requisite injury and grants standing, it is generally willing to consider a claim for lost profits under more-or-less the same standards as those applied to established firms driven out of business.⁵⁰

Estimation of lost profits in such situations is so speculative that the court's decision can be no more than arbitrary. *Ex ante*, no one could predict the market share or sales volume that could be attained by a prospective business, and no estimate of future profits can be made without some estimate of volume of sales.

A far more judicious approach, which would permit enforcement by precluded plaintiffs but guard against overdeterrence, is to award precluded entrants their sunk costs, plus the fair market value of any contractual obligations which they have already received but will be unable to perform as a result of the antitrust violations.⁵¹ "Sunk" costs refer here to investments that the plaintiff reasonably made into the business and which it will not be able to recover as a result of the violation. For example, a prospective entrant who has purchased a delivery truck will presumably be able to sell the truck and should recover only its net loss. By contrast, pre-opening advertising expenses, the cost of obtaining financing, losses caused by early termination of leases, wages and service fees paid for pre-opening activities are all "property" interests compensable under § 4 of the Clayton Act.⁵²

⁵⁰ See *Central Telecommunic. v. TCI Cablevision*, 800 F.2d 711, 730 (8th Cir.1986), cert. denied, 480 U.S. 910, 107 S.Ct. 1358 (1987); *Dolphin Tours*, note ___ at 1511; *Terrell v. Household Goods Carriers' Bureau*, 494 F.2d 16 (5th Cir.), cert. dismissed, 419 U.S. 987, 95 S.Ct. 246 (1974).

⁵¹ But see Robert D. Blair & William H. Page, "Speculative" Antitrust Damages, 70 Wash. L. Rev. 423, 452 (1995) (criticizing this basis for awarding damages). See also William B. Tye, Stephen H. Kalos & A. Lawrence Kolbe, How to Value a Lost Opportunity: Defining, Proving and Measuring Damages from Market Foreclosure, 17 Res. L. & Econ. 83 (1995). Courts have held that completed contracts are protected "property" under § 4 of the Clayton Act. *North Tex. Producers Ass'n v. Young*, 308 F.2d 235, 243 (5th Cir.1962), cert. denied, 372 U.S. 929, 83 S.Ct. 874 (1963); *Peller v. International Boxing Club*, 227 F.2d 593, 596 (7th Cir.1955).

⁵² See *Duff v. Kansas City Star Co.*, 299 F.2d 320 (8th Cir.1962); and *Flintkote Co. v. Lysfjord*, 246 F.2d 368, 389–394 (9th Cir.), cert. denied, 355 U.S. 835, 78 S.Ct. 54 (1957) (holding that lost profits were too speculative for nascent firm, but awarding invested costs). Courts can and have facilitated such a rule by distinguishing between "business" and "property" interests under § 4 of the Clayton Act. The precluded entrant's sunk costs and the value of its completed contracts are property interests. Its anticipated future profits, however, are uncertain "business" interests in which no property rights have been established. See Comment, Unestablished Businesses and Treble Damage Recovery Under Section Four of the Clayton Act, 49 U.Chi.L.Rev. 1076, 1094–

Contribution; Joint and Several Liability

Contribution is the right of one guilty defendant to force other participants in the same offense to pay a share of the damages award. Many states have adopted contribution rules for tort law, either by statute or by common law rule.⁵³ In *Texas Industries, Inc. v. Radcliff Materials, Inc.*, however, the Supreme Court decided that neither the antitrust statutes nor the federal common law implied a right to contribution in federal antitrust cases.⁵⁴ The current antitrust rule, therefore, is that a single defendant may have to pay the entire damages award, even though several co-conspirators participated in the violation that caused the plaintiff's injury.

The wisdom of a contribution rule in antitrust has been controversial, with a fair amount of literature on both sides of the question.⁵⁵ The current rule of no contribution injects some arbitrariness into private enforcement of the antitrust laws. Theoretically, at the plaintiff's whim one defendant can be held liable for far more than treble the damages that it caused. Another, equally at fault, goes away free. This has prompted arguments that a no contribution rule is overdeterrent, because under it a single firm may be liable for very large damages. The answer, of course, is an argument that a no contribution rule is really underdeterrent, because some firms known to be guilty will not pay anything.

Both of the above judgments can be made only after the fact, however. At the time a firm decides whether to commit an antitrust violation it does not know whether it will have to pay damages for an injury actually caused by a co-conspirator, or whether the co-conspirator will have to pay. However, a no contribution rule may distort antitrust enforcement to the disadvantage of some potential defendants and the advantage of others. For example, if plaintiffs generally sue the largest available defendant rather than the smaller ones, the effect of a no contribution rule would be overdeterrence with respect to large firms and underdeterrence with respect to small ones.

However, the no contribution rule of *Texas Industries* reduces the overall costs of antitrust enforcement by encouraging defendants to settle before trial.⁵⁶ For example, suppose that X, Y, and Z are co-conspirators sued by P. X, Y, and Z predict that if P wins it will collect

97 (1982).

⁵³ See Dan B. Dobbs, *The Law of Torts*, Ch. 26 (2000).

⁵⁴ 451 U.S. 630, 101 S.Ct. 2061 (1981). See also *Minpeco, SA v. Conticommodity Servs.*, 677 F.Supp. 151 (S.D.N.Y.1988) (dismissing contribution cross-claim).

⁵⁵ See A. Mitchell Polinsky & Steven Shavell, *Contribution and Claim Reduction Among Antitrust Defendants: An Economic Analysis*, 33 *Stan.L.Rev.* 447 (1981).

⁵⁶ See Frank H. Easterbrook, William H. Landes & Richard A. Posner, *Contribution Among Antitrust Defendants: A Legal and Economic Analysis*, 23 *J.L. & Econ.* 331 (1980).

\$6,000,000 in damages, and that P's chances of winning are 50%. For each defendant, the expected liability is \$1,000,000 (one-third of 50% of \$6,000,000). The value of P's expected award is \$3,000,000.

If X settles with P for \$1,000,000, the law of claim reduction provides that P's future award will be reduced by that amount, to \$5,000,000. P still has a 50% chance of winning. Now the expected liability of Y and Z is \$1,250,000 (each has a 50% chance of paying the \$5,000,000 judgment, and there is a 50% chance that it will have to be paid). The first settlor comes out better than the two other firms.

The second settlor will come out second best. The expected liability to firms Y and Z is \$1,250,000 each. P's expected recovery is \$2,500,000 (\$5,000,000 discounted by the 50% chance it will lose). Now suppose that Y settles for \$1,250,000. If P later recovers from Z, the \$5,000,000 will be reduced to \$3,750,000 to reflect the settlement with Y. Z's expected liability is \$1,875,000.

The result will be a race among the parties to settle. The eagerness of the defendants to settle first may yield higher settlements than would occur otherwise. In the example above, for instance, the first settlor will pay \$1,000,000, while the second settlor can expect to pay \$1,250,000. The firms will bid against each other to be the first settlor, and the initial settlement may well be more than \$1,000,000. Once the first defendant has settled, the remaining defendants will bid against each other for the right to settle next.

A contribution rule, depending on its type, can discourage defendants from settling. In the same case, suppose that X settles early for \$1,000,000, leaving P with a 50% chance of recovering \$5,000,000 from Y and Z. If Y ends up paying a \$5,000,000 damages award, Y will have a cause of action against Z for \$2,000,000 and against X for \$1,000,000 (that is, for an amount such that the total payment of all three defendants is the same.) In this case, Y's and Z's expected loss is \$1,000,000 each, after discounting for the 50% likelihood of P's success. X, however, is in a less fortunate position. The \$1,000,000 already paid is sunk costs that it is certain to lose. Its expected additional losses are \$500,000, giving it expected total losses of \$1,500,000. A contribution rule that does not create a special incentive for early settlement can make early settlers worse off (disregarding litigation costs) than nonsettlers. Thus any contribution rule that does not create an exception for early settlers is calculated to increase the costs of private antitrust enforcement.⁵⁷

Finally, any right of contribution in antitrust cases will impose one additional social cost—the cost of litigating the contribution claims themselves. If its guilt has not been established in a

⁵⁷ The incentive to settle can be restored by a contribution rule that frees any settling defendant from future contribution liability. Some states apply such rules to tort defendants who settle in good faith. See West's Ann.Calif.Code Civ.Proc. § 877. This is in effect a no contribution rule for good faith settlers.

prior proceeding to which it was a party, a defendant in a contribution case may still defend on the merits. A formula will still have to be developed for computing the relative liability of each co-conspirator. One possibility, for example, is liability in proportion to market share. However, such a rule would force the parties to a contribution case to determine a relevant market and calculate each co-defendant's share of it, even though this determination may not have been made in the earlier proceeding.

Most arguments for a right of contribution in antitrust rest on the lack of fairness or justice in any rule that forces one guilty party to pay for the offenses of another party who is equally guilty. If consumer welfare and efficiency are the principle goals of antitrust, however, the current rule of no right of contribution among antitrust defendants may be a good one, for it achieves the same total level of deterrence and reduces litigation costs.

Finally, antitrust also follows the common law tort rule of joint and several liability, which means that each guilty defendant is responsible for the entire damage award if co-defendants are unable to pay. This means that a direct purchaser who made all of its purchases from cartel member A could in fact collect some or even all of its damages from cartel members B and C.⁵⁸

⁵⁸ See *Paper Systems v. Nippon Paper Indus.*, 281 F.3d 629, 634 (7th Cir.2002).