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In This Issue

Discounting Damages

Gale Mosteller compares the principle of discounting damages in some types of cases and not in others. In a price-fixing case, damages are not discounted because plaintiffs did not forgo risk and because such a conspiracy involves a continuous series of overcharges with concurrent damages. By contrast, long-lasting damages are discounted back to the time of the wrongful act.

Damages in Trade Allocation Cases

Jeffrey L. Davis advocates the use of the option pricing model to calculate damages when a securities or commodities professional allocates trades among accounts after execution. Retaining the right to assign good trades to favored accounts and bad trades to less-favored accounts is equivalent to stealing options from customers. Unlike out-of-pocket losses, damages calculated using the option pricing method are independent of actual trading results.

Damages in a Conspiracy Case

Matthew G. Mercurio draws the distinction between the intent of conspirators and their success in carrying out their plans. Some analyses of damages in conspiracy cases contain assumptions that produce subtle biases that affect the estimated damages. Standard statistical test are among the only tools that can, without motive or bias, discover the ultimate success or failure of conspiracy.

Special Issue On Damages

Reprints of Selected Feature Articles

When Should Damages Be Discounted?

By Gale Mosteller

Discounting the value of economic damages to take into account risk as well as the declining value of money over time is a well-established practice. Yet in some cases, damages are not discounted. In commercial litigation, damages in each year are often discounted back to the inception of the fraud or breach. By contrast, in a price-fixing conspiracy, one typically estimates the amount of the overcharge on all units during each year, without discounting back to the beginning of the conspiracy. Why are damages discounted in one case but not the other? The answer depends on whether risk was forgone and on the duration of the damages.

Commercial litigation damages often compensate for lost profits, and one component of profits is a return for bearing risk. Because the plaintiff lost the opportunity to earn profits, it did not bear risk and should not receive a return for bearing risk. For this reason, lost profits are discounted at a rate that includes a risk premium. By contrast, price-fixing damages compensate buyers who paid higher prices. Because these buyers did not forgo risk, their damages are not discounted at a rate that includes a risk premium.

The duration of the damages also affects discounting. The difficulty lies in distinguishing a wrongful act with long-lasting damages from a series of wrongful acts with concurrent, short-lived damages. In commercial litigation, one discounts damages back to the time of the wrongful act when the damages span several years. (Because the value of a damage award erodes over time, some courts permit the addition of prejudgment interest to the damage award.) In price-fixing cases, one usually does not discount because the damages come from a series of wrongful acts, and the damages from each act last only a short time. So little time elapses during the damages from each act, there is no need to take into account the declining value of money.

Using Option Pricing Models to Measure Damages in Trade Allocation Cases

By Jeffrey L. Davis

It is not unusual, nor is it illegal, for securities and commodities professionals to trade the same security or commodity for several accounts during the course of a normal business day. This practice, however, presents the professional with the opportunity to favor some accounts, including his own, over others by allocating the more profitable trades to the favored accounts. For this reason federal securities law and commodities law prohibit brokers, advisers and other market professionals, except in limited instances, from allocating trades after execution. An important issue in litigation on those occasions when the professional allocates "good" trades to favored accounts and "bad" trades to another set of accounts is the measure of damages. One measure is the profit earned by the favored accounts as a result of the allocations. Another measure is the loss incurred by the other accounts. In either case, the point in time at which to measure the profits or losses may present a problem. A superior approach, which avoids this problem, is to use an option pricing model.

A simplistic approach to estimating damages is to measure the increase or decrease in the stock price between the time the trade was executed and the time of the allocation. Suppose a professional enters an order to sell a stock with the intention of allocating it to a favored account if the price goes up before the time of allocation. Suppose further that the price does not change at all. Consequently, the trade is allocated to the non-favored account. There has been no increase or decrease in the price of the stock, so the simplistic approach would find no damages. Yet the professional has stolen something from the non-favored account.

A superior way to measure damages in this situation recognizes that, regardless of what happens after the order is placed, the non-favored account gives up something of value at the moment the professional enters the order without designating the account for which he is trading. By failing to designate the account, the professional reserves for himself the right to make the choice later. That right does not materialize from thin air; it is taken from the non-favored account, the account that will get the trade if it turns out not to be a "good" one. That right is an option, and it can be valued, like any other option.

The option to allocate trades can be valued in a straightforward manner by adopting the option pricing model. If, for example, the allocated security is a common stock, the option pricing model requires five inputs in order to estimate an option value: (1) the price of the stock at the time the option is created; (2) the option's exercise price, which will usually be the same as the stock price; (3) the volatility of the stock; (4) the risk-free rate of interest; and (5) the time to option expiration. These

inputs are usually readily available or can be estimated. It is then a relatively simple matter to generate a reliable estimate of the option's value.

The measure of damages from applying the option pricing model can be expected to differ markedly from the out-of-pocket losses typically used by courts to assess damages. As an example, consider the damages awarded to plaintiffs in *In the Matter of George Inserra et al.* In this case, an investment adviser purchased stocks and placed them in a temporary holding account. A few days later the stocks that rose in value were transferred to accounts of confederates and the stocks that did not rise in value were transferred to accounts managed for several upstate New York Teamster Union and Pension and Welfare funds (Teamster funds). From the time of the initial trades to the date of the allocations the value of the stocks allocated to the Teamster funds declined, in the aggregate, \$137,550, and the stocks allocated to the favored accounts increased \$139,625.

The amount of restitution the defendants were ordered to pay in the criminal proceeding was \$130,225, approximately the out-of-pocket losses to the Teamster funds. Using the schedule of allocated trades published in the opinion and other publicly available information, the value of the options that were implicitly stolen from the Teamster funds can be estimated by applying the option pricing model. Had the court measured damages in this way, the defendants would have been required to pay \$209,340, or 60 percent more than the ordered restitution.

The option pricing method will not always produce amounts greater than the out-of-pocket losses on the trades. Indeed, the estimate of damages produced by the option pricing method is entirely independent of the actual profits or losses of the trading because it measures the value of what was stolen at the time of the theft. This independence is desirable because the wrongdoer benefits (and the victim loses) from both profitable and unprofitable trades, and the value of what he has stolen may greatly exceed both the trading profits to the favored account and the trading losses to the victim. The option pricing approach, therefore, offers a consistent method for systematically measuring damages in trade allocation cases.

Vice President Jeffrey Davis was formerly Director of Economic and Policy Research of the Securities and Exchange Commission. A more detailed treatment of this topic, written by Mr. Davis, William C. Dale and James A. Overdahl, can be found in the February 1994 issue of *The Business Lawyer*.



Calculating Damages in a Conspiracy Case

By Matthew G. Mercurio

In conspiracy cases, a distinction must be drawn between the intent of the conspirators and their actual success in carrying out the conspiracy. Even if a conspiracy has been admitted, there is no inherent reason to believe that it was as successful as the conspirators intended it to be. This distinction is of considerable importance in calculating damages. A standard statistical analysis in a conspiracy case

may provide further evidence of the existence and scope of a conspiracy. It may also be the only tool which can, without motive or bias, illuminate the ultimate success, or lack thereof, of a conspiracy.

A properly constructed damages analysis must be unbiased with regard to any allegations or admissions on the part of the conspirators. In a recent case, conspirators admitted to a decade-long attempt to fix prices of a product sold to a certain buyer. Thus, although the intended actions of the alleged conspirators are not in question, the extent of any actual damages is. The plaintiff's damages analysis compared the prices charged for various orders by non-conspiracy vendors to the prices charged for similar items by the conspiracy vendors. Damages were calculated based on the difference in prices between the two groups, controlling for other features of the contracts.

Plaintiff's assumption of the existence and modus operandi of the conspiracy, however, leads to subtle biases in the analysis of the price data. For example, certain smaller contracts were excluded from the analysis, presumably because fixing prices on these smaller dollar amounts was "not worth the trouble." Also, several relevant years of the data (i.e., the early years of the conspiracy) were excluded on the grounds that they did not show evidence of the conspiracy, and thus must not have been involved in the conspiracy. Exclusion of the earlier years on the grounds that they indicate no difference in price, however, biases the results in favor of a finding of a price differential in the later years. In one analysis in which no competitive benchmark was available, the plaintiff assumed that the conspirators behaved as a monopolist with regard to their pricing policies. In fact, they might have sought to conceal

themselves by charging much less than the monopoly price.

The most important underlying assumption in the plaintiff's damages analysis is that the conspiracy vendors overcharged the plaintiff relative to a homogeneous pool of non-conspiracy vendors. There are, however, numerous economic reasons to expect heterogeneity among the vendors, none of which were accounted for in the plaintiff's analysis. Allowing for this heterogeneity among the non-conspiracy vendors reveals that the plaintiff paid no more on average for contracts procured

from the conspiracy vendors than from any other vendors. Thus, by assuming that they would find positive damages, the plaintiff's analysis was biased in favor of that finding. Notwithstanding the intent of the alleged conspirators, the data do not indicate any substantial evidence of a successful conspiracy.

One portion of the available data that was not utilized in the plaintiff's analysis is information on contracts that went through the plaintiff's formal bid process and were thus "shielded" from the conspiracy. This contract bid process could be used as a benchmark for measuring the conspiracy vendors' success. An important issue not addressed in the plaintiff's analysis is the extent to

which, the conspiracy aside, the procurement process ensured that the plaintiff would be the beneficiary of competition among its vendors. Statistical analysis reveals that on average the formally bid contracts were actually valued at no less than other contracts, whether the other contracts were part of the conspiracy or not. Thus, the same data that seemed to support the plaintiff's claims as well as substantial damages raise serious doubts about whether plaintiff's procurement policy could take advantage of competition among its vendors absent any conspiracy.

The importance of remaining unbiased regarding the damages caused by a conspiracy, regardless of the facts that may be known about the intent of such a conspiracy, is clear. A straightforward analysis of the pricing data in this case found no evidence that any of the vendors allegedly involved in the conspiracy against the plaintiff were protected from competition. In addition, the same data set used to generate

A properly constructed damages analysis must be unbiased regarding any allegations or admissions by the conspirators.

Continued on page 4

Discounting Damages . . . (Continued from Page 1)

To understand that a price-fixing conspiracy is a series of wrongful acts with short-lived damages, consider what would happen if the price-fixing conspiracy suddenly ended. Presumably prices would quickly drop to competitive levels, eliminating the overcharge. Damages from a price-fixing conspiracy continue only because the conspirators maintain their agreement to raise prices day after day. In principle, the damages could cease at any time by ending the agreement. Hence, a price-fixing conspiracy does not involve a single decision to raise prices, but rather ongoing decisions to adhere to the agreement and maintain high prices. The fact that prices would quickly drop if the conspiracy ended indicates that the damages are not long lasting.

Commercial litigation may also involve a series of wrongful acts with short-lived damages. For example, if a company breached a contract to buy products, and instead bought the products elsewhere, the breach could involve a series of wrongful acts. By thinking about what would happen if the company stopped breaching the contract, one can assess the duration of the damages. If the breaching company could quickly switch all of its purchases back to the wronged company, the damages would be short-

lived. In this case, the breach of contract, even if it lasted for years, should be treated as a series of wrongful acts with short-lived damages, and the damages would not be discounted.

Other wrongful acts may have long-lasting, possibly irreversible, damages. A wrongful act may destroy an asset that would have yielded a stream of profits over time. The damages would last as long as the stream of profits from the asset would have lasted. The lost profits from each year would be discounted back to the time of the wrongful act.

The damage analysis becomes more complicated for a series of wrongful acts with long-lasting damages. The lost profit stream from each wrongful act should be discounted in each year back to the time of that act. For example, if wrongful acts resulted in a company losing multi-year contracts with various customers (third parties), the lost profits from each contract would be discounted back to the start of that contract, when the wrongful act began damaging the company. As another example, if the wrongful acts delayed a stream of profits for several years, there would be a stream of lost profits resulting from one year's delay, a stream of additional lost profits resulting from a second year's delay, and so on. The lost profits from

each year's delay would be discounted back to that year, when the wrongful act began to inflict damages.

In sum, the decision to discount depends on the duration of the damages, not on the duration of the wrongful acts themselves. A price-fixing conspiracy could last for years, but the damages could quickly cease by ending the conspiracy. As a result, the conspiracy is better analyzed as a series of wrongful acts with concurrent damages. The damages from these acts should not be discounted back to the beginning of the conspiracy. Whether a wrongful act has long-lasting damages that may require discounting depends on whether and how quickly plaintiff's stream of profits would be restored by ending the wrongful act.

Senior Economist Gale Mosteller has analyzed economic damages in a variety of cases involving breach of contract and fraud as well as Lanham Act, Sherman Act and Robinson-Patman Act violations. She is co-author of The Economics of a Disaster: The Exxon Valdez Oil Spill pertaining to fishermen's damage claims.



Damages in a Conspiracy Case. . . (Continued from Page 3)

substantial damage estimates also demonstrated that there were reasons to question the overall competitiveness of the plaintiff's bidding process, notwithstanding the conspiracy.

Vice President Matthew G. Mercurio specializes in empirical analysis using large data bases, survey and panel data, and time series data. His areas of experience include damages, telecommunications, and finance.



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