CHAPTER 4

EX ANTE VERSUS EX POST

Peter Schulman

Introduction

Lost profits damages generally commence on or about the date of the legal violation\(^1\) by defendant. However, as often happens, the trial may be conducted many years later. In assessing damages, an expert may have a choice. An expert may measure the lost profits damages using information reasonably available on or about the date of the wrongdoing. Alternatively, the expert may obtain and evaluate all information reasonably available up through the date of the trial, including any new information that becomes available after the date of defendant’s legal violation and through the time the expert prepares the damages study. This chapter examines the differences between these two approaches.

The amount of lost profits damages may be affected materially by whether the expert considers and applies only information available through the date of the legal violation or all information available through the date of trial. The two alternative methodologies and the respective scopes of information to be utilized by the expert in analyzing lost profits damages often are referred to as the *ex ante* and *ex post* approaches. The expert’s selection of or agreement to use an *ex ante* or *ex post* approach may be influenced by considerations such as the following:

- *The case law:* The applicable case law for the relevant legal jurisdiction, as assessed by the attorney-client and communicated to the expert, may be guiding. The attorney-client may evaluate the relevant court’s apparent predisposition to accept damages computed based upon one or the other approach, considering the nature of the case and related case facts.
- *The case facts:* The facts as disclosed through the litigation process or as independently discovered by the expert may influence the expert’s decision about whether an *ex ante* or *ex post* approach is more appropriate.
- *The expert’s view:* The expert’s professional views about whether the *ex ante* or *ex post* approach results in the more appropriate determination of plaintiff’s losses, based upon the expert’s training in and experience with the economic, financial, and accounting disciplines, and taking into consideration prior testimony, may be relevant.

---

\(^1\) For convenience and brevity, this chapter may use phrases such as the “legal violation” or the “wrongdoing” to identify an action giving rise to damages. However, a subject action may not *per se* be illegal or wrong, such as breach of a contract for which the contract or the law provides economic or other remedies.
For the last few decades, damages experts have debated heatedly whether the *ex ante* or *ex post* approach is the more conceptually defensible method to determine the economic value of plaintiff’s losses. Chapter 2, “Legal Principles for Lost Profits Damages and Related Expert Testimony,” discusses the legal types of damages awards for lost profits, including *compensatory damages*. The legal objective for a lost profits damages award is to make plaintiff economically “whole.” In other words, the purpose of the damages award is to return the injured party to the same or an equivalent economic position plaintiff would have experienced had the violation not occurred (i.e., but for the violation). Setting aside the influence of case law, experts disagree whether the *ex ante* or *ex post* approach is the theoretically better measure of lost profits suffered by plaintiff or whether the answer is the same under all circumstances.

The purpose of this chapter is to educate the reader about the *ex ante* and *ex post* methods, including the respective collections of information to be considered or relied upon, to determine the amount of lost profits damages. It is not the aim of this chapter to resolve the continuing disagreement among damages experts about the theoretically better approach. Instead, Chapter 5, “Business Valuation Methodology,” and Chapter 6, “Contrasting the Lost Business Value and Lost Profits Methodologies,” explore the comparative merits and disadvantages of the *ex ante* and *ex post* approaches. For convenience, these approaches are also referred to as the *business valuation* and *lost profits* methodologies, respectively, given the typical sets of information (i.e., *ex ante* or *ex post*) used for each methodology.

This chapter is presented in two major parts. The first portion of the chapter defines the concepts of *ex ante* and *ex post*; explores the nature and importance of information used by the alternative approaches in the computation of lost profits damages; summarizes the development of case law reflecting courts’ views on the use of either or both approaches; and presents the theoretical descriptions of the two approaches, as expressed in certain seminal journal articles. The second portion of the chapter includes a case study that illustrates application of the *ex ante* and *ex post* methodologies and the potential impact upon the damages amount determined through the time of trial. In particular, the illustrations examine the impact of the selection of methodology on the amount of total damages, including the calculation of prejudgment interest on past damages and the calculation of discounted future damages. These illustrations should help the reader understand the practical application of the *ex ante* and *ex post* methodologies and any potential resulting difference between the total damages amounts.

**The Terms *Ex Ante* and *Ex Post***

The term *ex ante* is Latin for “from before” and in context means from before the event. The term *ex post* is Latin for “from after” and denotes from after the event. Gunnar Myrdal, a Swedish economist, has been credited with popularizing the terms in relation to prospective (compared to retrospective), economic, and financial analyses. In the non-litigation business world, for example, projected business revenues or labor requirements constitute an *ex ante* undertaking because estimated future results are formulated before the actual results are known. On the other hand, the passage of time will reveal the actual business revenue stream and labor levels, which then (as historical data) can be reported with precision and accuracy. As such, the projected perfor-
mance can be corrected to actual results on an *ex post* basis because the analysis is performed after the occurrence of the actual events. In 1939, Myrdal defined the terms as follows:

Quantities defined in terms of measurements made at the end of the period in question are referred to as *ex post*; quantities defined in terms of action planned at the beginning of the period in question are referred to as *ex ante*.  

The terms *ex ante* and *ex post* also are applied in the litigation arena and appear in court decisions with respect to the basis by which lost profits damages are determined. An *ex ante* damages analysis measures plaintiff’s loss as of or about the time of the economic injury that was purportedly caused by defendant’s wrongdoing. The *ex ante* damages study is based upon the information reasonably known or ascertainable on or about the date of the legal violation, including any contemporaneously projected but-for performance of plaintiff’s business. For the purpose of computing the *ex ante* lost profits damages, information that arose after the *ex ante* valuation date is not incorporated into the expert’s damages computation.

An *ex post* damages analysis measures plaintiff’s economic loss at a later date, often as near as practical to the expected date of the damages award; the expert’s damages analysis considers or relies upon information reasonably available as of the date the damages computations are completed. Because time has expired between the date of the defendant’s legal violation and the date of the damages computation by the expert (i.e., the past damages or past lost profits period), many, if not all, of the *ex ante* but-for projections for the past damages period may be subject to refinement, adjustment, or correction, based upon new information arising after the date of the legal violation. Further, the more current *ex post* information may lead to improved projections or forecasts about the but-for performance for the estimated remaining future years of damages (i.e., future damages or future lost profits period) than could have been prepared based upon the older, *ex ante* information.

Dunbar et al. provide a useful framework for defining information considered in *ex ante* and *ex post* damage analyses:

A pure *ex ante* analysis would use information only if it were available at the time of the unlawful act to calculate the damages incurred at the time of the act. Practitioners base the analysis, therefore, as though they were to analyze the damage caused by the act contemporaneously with the occurrence of the act.

A pure *ex post* analysis uses all the information available up to the date of the analysis. Such an outcome-based analysis accounts for facts that become known after the unlawful act.

Again, regardless of arguments about whether the *ex ante* or *ex post* method is preferable with respect to the attendant information used to compute damages, experts still disagree about which approach is the better theoretical measure of plaintiff’s economic loss, and court decisions do not consistently endorse one methodology over the other.

---


6 Ideally, the damages amount should be computed as of the date plaintiff will actually receive the monetary award, which often is delayed for some time after the trial. Since the actual loss recovery date may be uncertain, the expert typically computes the damages amount as close to, or as of, the trial date as is feasible, given the constraints of the litigation process. The court may award post-judgment interest to compensate plaintiff for the delay in payment.

Information Considered and Relied Upon

The damages expert exercises considerable professional judgment in determining whether plaintiff experienced lost profits damages and the extent of any such loss. Whether the expert follows the *ex ante* or *ex post* method of damages assessment, the expert considers and relies upon a broad variety of information sources that the expert interprets based upon the expert’s education, training, and professional experience.

Information available to the expert may arrive in a wide variety of forms and from many sources. In many cases, some of the information is of an objective nature, and some of the information is of a subjective nature. The quantitative information may simply be raw data, or the data may have been tabulated, summarized, and interpreted by the expert or someone else. For example, information potentially relevant to an expert evaluating lost profits could include actual or projected financial performance, business strategies, products and related pricing, trends in the availability and cost of acquired products and services, industry trends, competitor actions, economic conditions, consumer preferences, market share information, regulatory activities, and demographic shifts. The desired and relevant information for the expert’s damages analysis may be provided by the client, obtained through litigation discovery (including depositions and interrogatory responses), or acquired by independent research of the expert.

Two sets of information can be equally credible, reliable, and accurate; however, the two collections of information may be markedly different. Damages experts generally agree that *ex ante* and *ex post* information often result in materially different computed damages amounts. However, damages experts may disagree about whether the *ex ante* or the *ex post* information and related lost profits damages is the better, more appropriate measure of plaintiff’s loss, if any, from a theoretical viewpoint, given the economic and financial principles related to measuring a lost business opportunity.

At times, the expert’s decision about whether to use the *ex ante* or *ex post* approach to damages measurement might be more influenced by the case facts than the expert’s theoretical preference for one approach over the other. For example, in one case, the plaintiff planned on selling the business at some point shortly after the injury and, in another case, the plaintiff planned on keeping and growing the business indefinitely. In the former instance, the expert may select an *ex ante* approach because it would make the plaintiff economically whole. That is, the *ex ante* or lost business value damages would reflect the amount that the plaintiff could have obtained for the business—or what the business was worth to the owner—on or about the date of the legal violation, regardless of whether the business would have later done better or worse than expected as of that date. In the latter instance, the expert may select an *ex post* approach to compute damages for the purpose of making the plaintiff economically whole.

This chapter contrasts the *ex ante* and *ex post* approaches, including the typically different information sets used by each respective approach, to help the reader understand why the alternate methodologies may produce materially different lost profits damages amounts.

The *ex ante* approach considers only information available on or about the date of the legal violation by defendant. As of that date, the loss may be measured as the defendant-caused, diminished business value or the reduced discounted value of the stream of lost economic income following the date of the legal wrongdoing. The *ex ante* methodology for determining plaintiff’s lost business value damages is based upon the *expected value* of economic income following the violation date, as determined based upon information available as of the legal violation date. This expected value necessarily embodies certain projections that were still uncertain or unresolved at the time of the legal wrongdoing. Regardless, proponents of the *ex ante* approach argue the theoretical appropriateness of computing lost business value or lost profits, as of the time of the legal violation, with information that was then available.
The *ex post* methodology considers information reasonably available or ascertainable through the respective loss valuation date, which often is on or about the date of trial. Advocates for the *ex post* approach believe the value that would have been realized from the impaired asset is revealed over time, for better or worse, so information becoming available after the date of the legal wrongdoing should be considered and, as appropriate, incorporated into the damages study. The additional information may allow the expert to refine the *ex ante* projections or expected value, although what the plaintiff would have accomplished in terms of but-for economic income given defendant’s interference cannot necessarily be determined with certainty.

The following example demonstrates the impact on lost profits damages of *ex ante* versus *ex post* information and is not provided to demonstrate any court preference for one approach over the other. To illustrate where the difference between *ex post* and *ex ante* damages could be material, assume plaintiff had a lease for the exploration and production of oil and gas, the lease was wrongfully terminated, and plaintiff sued for contract termination damages. Further assume that the case was litigated for 10 years subsequent to the contract termination. At the time of termination, crude oil prices were at or below $20 a barrel, and prices were then projected to increase to amounts not greater than $30 a barrel over the next decade. During the ensuing 10 years, however, oil prices surged at times beyond $100 a barrel. On behalf of the party terminating the lease, defendant’s expert performed an *ex ante* damages analysis based on the contemporaneous oil price projections, and opined that the lost profits damages were $0 or negligible because the price for crude oil was $20 a barrel at the time of the lease termination, the price for crude oil was not expected to exceed $30 per barrel during the ensuing decade, and the resultant present value of future cash flows was insufficient to cover the capital costs required to pursue the opportunity. Plaintiff’s expert did an *ex post* damages analysis considering that the actual oil prices surged beyond $100 per barrel within 10 years following the lease termination and substantially exceeded the opposing expert’s *ex ante* oil price projections for most of the decade following the lease termination. Adjusting the damages model of defendant’s expert only for the *ex post* (i.e., actual) oil prices resulted in a claim for millions of dollars of lost profits to the plaintiff.

Assuming the damages expert favors use of the *ex ante* methodology and the case facts appear to support this approach, can the expert simply ignore the *ex post* information as irrelevant? Of course, the intuitive answer is “no.” However, damages experts advocating the *ex ante* view may have performed similar assignments without considering the *ex post* information. Sometimes, the expert takes this position based on the assignment provided by the attorney-client, who may represent, for example, that the defendant caused the full destruction of plaintiff’s business so the attorney-client needs only an opinion of the business value as of the date of alleged wrongdoing.

Even if a damages expert prefers and applies the *ex ante* methodology, it would be imprudent for the expert to ignore the *ex post* information if it is available to the expert or can be provided with reasonable ease. The expected values developed or relied upon by the *ex ante* damages analyst inherently recognize that future outcomes may vary significantly from what is projected, as of the *ex ante* damages measurement date. Theoretically, the expected future economic cash flows as of the *ex ante* damages measurement date represent the weighted average of the then-anticipated range of alternative possible outcomes, which are subjected to a business valuation discount rate incorporating a risk premium for the uncertainty of possible *ex ante* outcomes. A full discussion of addressing risk and uncertainty through the discount rate appears in Chapter 17, “Discount Rates in Theory.” By considering the actual post-violation or *ex post* information, and by comparing actual outcomes to the *ex ante* projections, the *ex ante* damages expert can cross-check the *ex ante* premises about then-envisioned future risks and uncertainties to ensure that the development of the expected value based upon *ex ante* information is reliable.
and credible. If the *ex ante* damages expert does not consider the *ex post* information, the expert may be exposed to new information at deposition or trial about *ex post* actual outcomes or events outside of the range of variances previously considered possible by the expert. Further, the expert may be exposed to new information indicating that plaintiff’s failure to achieve its expected value outcome was not entirely caused by the defendant, as represented to the expert by the engaging attorney-client.

**Development of Case Law Regarding *Ex Ante* and *Ex Post* Analyses**

The case law related to *ex ante* and *ex post* damages should be reviewed in light of the long-term historical legal environment for compensating a plaintiff for economic loss, the emergence over the last century or so of case decisions recognizing the use of *ex post* information to measure damages, the courts’ modern recognition of the two alternative measures of damages, and recent case decisions adopting the *ex ante* or *ex post* approach for damages measurement. The purpose of this section is to apprise damages experts of various courts’ legal expectations for the proof of lost profits, so the experts can intelligently select a court-acceptable methodology and engage the attorney-client in meaningful discussions about the topic. As an ultimate legal issue, however, the expert likely will rely upon the attorney-client for guidance about this aspect of the applicable law.

The question of whether damages should be measured with information available at the time of the legal violation, as opposed to information available at a much later point in time, was not particularly meaningful hundreds of years ago, such as in the pie-powder courts in England during medieval times. In that era, the legal wrongdoing and the trial of the offender occurred very close in time. The pie-powder court, also known as a pie-poudre court, was a special court that sat during public markets or fairs. This court had exclusive jurisdiction over disputes between merchants and consumers and any other dispute arising as a result of the market or on the fairgrounds. The term “pie-powder” came from the old French phrase describing a peddler, *pied pouldeaux*, which referred to any alien merchant or, literally, the dusty feet of travelers and vagabonds. It was a summary court of justice and was intended to promptly address the difficulties between parties who came from faraway places to attend the fair, since their occupation required that immediate jurisdiction should be had in all cases. Therefore, it was normal for the transgressor to be arrested, the cause tried, and judgment given within a few hours. Sir William Blackstone’s *Commentaries on the Laws of England* in 1768 described pie-powder courts as “the lowest, and at the same time the most expeditious, court of justice known to the law of England.” For such a court, the issue of *ex post* information had little meaning or applicability.

As the time between the legal violation and the trial became more extended over the ensuing centuries, the question of whether to consider *ex post* information to resolve issues of economic damages became more germane. The U.S. Supreme Court dealt with the *ex post* issue as far back as 1830, in *Wilcox v. Executors of Plummer*, in which the court held, in part, “it is perfectly clear, that the proof of actual damage may extend to facts that occur and grow out of the injury, even up to the day of the verdict.”

One of the most significant and often-quoted cases concerning consideration of the *ex post* information arising subsequent to the injury included the term and popularized the concept of

---


the “book of wisdom.” In the 1933 landmark case, Sinclair Refining Co. v. Jenkins Petroleum Process Co., the court wrote a unanimous opinion explaining that ex post data should be considered when determining the value of a patent and stated, in part, as follows:

[T]he absence of market value does not mean that the offender shall go quit of liability altogether. The law will make the best appraisal that it can, summoning to its service whatever aids it can command. … At times the only evidence available may be that supplied by testimony of experts as to the state of the art, the character of the improvement, and the probable increase of efficiency or saving of expense. … This will generally be the case if the trial follows quickly after the issue of the patent. But a different situation is presented if years have gone by before the evidence is offered. Experience is then available to correct uncertain prophecy. Here is a book of wisdom that courts may not neglect. We find no rule of law that sets a clasp upon its pages, and forbids us to look within.”¹¹ [Emphasis added.]

Court decisions continue to recognize that, for many legal disputes, the court has the discretion to consider the ex post information, whether or not the ultimate damages award is based upon ex ante compared to ex post evidence. In Anchor Savings Bank, FSB v. United States,¹² the court referred to the two approaches as “two permissible methods of calculating damages—lost asset value and lost profits.”¹³

Collectively, court decisions acknowledge that two alternative methods are generally recognized and accepted for the measurement of economic damages, although understandably, the selection by the court of the method to be applied for any particular dispute may be subject to other legal matters and issues of fact. The following are a few examples from court decisions that recognize the potential use of the two alternative methodologies. In court decisions, it is common for the court to equate the ex ante approach with the term “lost business value” methodology and the ex post approach with the term “lost profits” methodology. These decisions acknowledge the potential application of either approach by finding that post-breach information “may” be considered in addition to the ex ante information:

We next address the question of whether lost profits are an appropriate measure of damages for the destruction of a nascent enterprise. The defendants argue that the appropriate measure of damages for the destruction of a business is its going concern value at the time of its destruction rather than lost profits. The plaintiff argues that the present value of a stream of expected future profits is an appropriate way to value a business and that it is therefore an appropriate measure of damages. We conclude that it is proper to award damages for the destruction of an unestablished enterprise and that lost profits may constitute an appropriate measure of damages for the destruction of such an enterprise.¹⁴

Neither Lincoln nor any of our other Winstar decisions bars the court from considering post-breach evidence in determining the quantum of a lost profits

¹² Anchor Savings Bank, FSB v. United States, 597 F.3d 1356 (Fed. Cir. 2010).
¹³ “While economists heatedly argue one model versus the other, most agree that both ex post and ex ante are generally acceptable and widely used.” George P. Roach, “Correcting Uncertain Prophecies: An Analysis of Business Consequential Damages,” The Review of Litigation (University of Texas School of Law Publications, Winter 2003), p. 67.
award. As we have repeatedly recognized, the rule of favoring the measurement of damages as of the time of the breach “does not apply … to anticipated profits or to other expectancy damages that, absent the breach, would have accrued on an ongoing basis over the course of the contract. In those circumstances, damages are measured throughout the course of the contract.” Energy Capital Corp., 302 F.3d at 1330 … “strict application of the [time-of-breach] rule may not result in the most accurate assessment of expectancy damages.” 518 F.3d at 1377. Thus, where it is necessary to fashion an appropriate award, a court “may consider post-breach evidence when determining damages in order to place the non-breaching party in as good a position as he would have been had the contract been performed.” Id.\textsuperscript{15}

Considering the pertinent matters of law and issues of fact, courts may elect to apply either the \textit{ex ante} or \textit{ex post} approach to measuring damages. As a result, case decisions continue to arise that use either the \textit{ex ante} or the \textit{ex post} method of determining plaintiff’s economic loss.

In Columbia Park Golf Course, Inc. v. City of Kennewick,\textsuperscript{16} the court allowed a claim that measured damages as a lost business value as of the date of the legal violation. Plaintiff was a golf course operator with a 50-year lease. It sued the city for breach of a development option agreement after the city denied the development and operation of a recreational vehicle park instead of continuing operation as a golf driving range. Evidence to support a lost profits claim was not presented by plaintiff, considering that the nascent business was without the permits, approvals, and agreements needed to proceed with the development of the recreational vehicle park. Instead, plaintiff sought the lost monetary value of its bundle of rights in the form of the development option, which was established by expert testimony as the market value of the development option on or about the time of the breach. The trial court awarded $3 million to plaintiff as the market value of the destroyed asset. The appeals court agreed with the award. “We agree with the trial judge that Columbia presented substantial evidence in support of its claims and was entitled to submit its claim for presently measurable damages, not lost profits, to the jury.”\textsuperscript{17} More specifically, the appeals court stated, “Under the lost asset theory of damage, it is irrelevant whether Mr. Long’s pro forma financial projections would have proven correct; what matters is only whether a market existed and whether a $2.5 to $3 million price would have been paid for the bundle of rights in that market. This is a distinction with a difference, and one that enables an injured party who holds a bundle of rights for which a market exists to avoid a ‘lost profits’ problem by subjecting its damage measure to measurement, cross-examination, and countervailing evidence available at the time of trial.”\textsuperscript{18}

While this decision did not reject the use of \textit{ex post} information as a general rule, it did acknowledge plaintiff’s decision not to pursue an award based upon profits lost after the breach, especially since plaintiff would have difficulty as a new business meeting the expected standard of proof for post-breach economic losses. The \textit{Columbia} decision may reveal an important distinction by some courts regarding \textit{ex ante} compared to \textit{ex post} damages. The majority opinion distinguished between a market value for the development option at the time of the wrongdoing, which could be proven through expert testimony, compared to lost profits damages dependent upon an expected value based upon anticipated future outcomes that could not be proven with reasonable certainty. However, in the \textit{Columbia} decision, a dissenting judge wrote that the difference between awarding lost business value and lost profits was really a distinction without

\begin{footnotesize}
\begin{enumerate}
\item Anchor Savings Bank, FSB v. United States, 597 F.3d 1356 (Fed. Cir. 2010).
\item Ibid.
\end{enumerate}
\end{footnotesize}
a difference, because the lost business value was nothing more than the then-discounted stream of expected future profits.

In fact, such a difference may exist because financial theory applies to both the ex ante and ex post approaches. A lost business value may be established, as of the date of the legal violation, as the value an investor would have paid for the business opportunity but for the legal violation, regardless of the basis by which the investor would have established the business value, and even though the hypothetical investor’s ultimate actual economic earnings were, as yet, unknown based upon the available facts and information for the subject case. To summarize the noted distinction more directly, if the lost value at the time of legal violation can be established as a reasonably certain fact, then it doesn’t matter whether that value can be reconciled credibly to the discounted value of some stream of future economic income. Given the relevant facts and court’s decision in the Columbia case, the distinction is similar to the common experience of being able to determine a given day’s closing price for an equity security without knowing or validating the investor’s expectation of future economic returns.

On the other hand, some court decisions express a preference for use of the ex post information and the lost profits methodology to determine plaintiff’s damages. Interestingly, many of these court decisions considered the argument by one party that the ex ante approach and any related lost business value must be the measure of damages. Often, this position is taken by (1) a plaintiff when the ex post damages are less, especially when $0 or a de minimis amount, or (2) a defendant when the ex ante damages are less than plaintiff’s claim based upon the ex post methodology. Regardless of any argument that the ex ante or lost business value damages must be the measure of plaintiff’s loss, these court decisions recognize that two acceptable methods exist to value plaintiff’s economic loss, and the courts conclude that plaintiff’s loss is best determined using the ex post approach and the lost profits methodology.

*Fishman v. Estate of Wirtz*19 was an appeal concerning the 1972 purchase by defendant of the Chicago Bulls basketball team. Plaintiffs also sought to purchase the Bulls and brought suit alleging that the Bulls had been acquired through anti-trust violations. The trial court ruled that defendants violated the Sherman Act and awarded plaintiff treble damages for the violations. The trial court allowed a claim of $4.7 million (before trebling) for plaintiff’s monetary damages from having been deprived of ownership of the Chicago Bulls basketball team between 1972 and 1982.

In their appeal, defendants argued that damages must be computed as of the date of the injury (1972). Defendants further argued that the going-concern value of the Bulls in 1972 represented a full recovery for plaintiff because, by definition, what a buyer would have paid for the team in 1972 is an expected future income stream discounted to present value. More specifically, defendants argued that plaintiff’s damages amounted to $50,000, representing the difference between defendant’s and plaintiff’s offers for the franchise ($3.35 million versus $3.3 million, respectively).

The appellate court held as follows:

The district court’s valuation is based on actual gain experienced by the Bulls over ten years. (The 1972 going-concern value was affected by a number of ex ante predictions, which were proved either true or false and were reflected in the 1982 value.) We do not understand defendants’ objection to using this adjusted value...because we know of no case that suggests that a value based on expectation of gain is more relevant and reliable than one derived from actual gain.20

19 *Fishman v. Estate of Wirtz*, 807 F.2d 520 (7th Cir. 1986).
20 Ibid.
In the *Anchor Savings* case referenced above, plaintiff was forced to sell RFC, a subsidiary, to satisfy new regulatory capital requirements after implementation of Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA). RFC was acquired by GMAC for a distressed sale price, but RFC subsequently produced substantially more profits than expected at the acquisition date, as a result of the rapid growth of the profitable subprime mortgage industry. Anchor Savings sought hundreds of millions of dollars of *ex post* lost profits. In rebuttal, the government strenuously argued that damages must be measured based upon the business value at the date plaintiff was forced to dispose of the entity. The court rejected the government’s argument for the *ex ante* or business valuation method as the damages measurement. “Ultimately, the court concluded that the most accurate approach was to base the award of damages on RFC’s actual post-breach profits under GMAC.”

While some court decisions have expressed a preference for the *ex ante* methodology and others have expressed a preference for *ex post* damages analysis, generally the courts have trended in favor of considering the *ex post* information and related damages measurement methodology, particularly in the federal courts. Although practitioners continue to debate the academic merits of using *ex ante* and *ex post* information, and whether the corresponding damages calculation approach is the theoretically appropriate measure of economic loss by the plaintiff, most damages analysis experts agree that both approaches are generally accepted methodologies and acknowledge that a court may exercise its discretion in adopting either approach, considering the pertinent matters of law and issues of fact particular to the case at hand. As such, damages experts generally should start with the premise that either approach may be available for damages measurement and then make the methodology decision based upon the case facts and apparent prevailing law. For jurisdictions where there are competing legal authorities about use of the *ex ante* versus *ex post* methodologies, a theoretical but seldom-used option for the damages expert is to calculate damages under both the *ex ante* and *ex post* methods and let the trier of fact decide which approach is preferable under the circumstances.

**Summary of the Current Academic Debate**

Based upon economic, financial, and accounting principles, academics and practitioners disagree whether the *ex ante* or *ex post* information should be used to evaluate damages and whether the respective lost business value or lost profits methodology is the theoretically correct measure of economic harm to plaintiff caused by defendant. In 1990, three seminal articles were published that explain the bases for the continuing intense debate among academics as well as damages experts. These articles are still relevant today. This section summarizes the views expressed in these writings.

**Lanzillotti and Esquibel (1990)**

R.F. Lanzillotti and A.K. Esquibel (L&E) wrote an article for the January 1990 edition of the *Journal of Accounting, Auditing & Finance*, “Measuring Damages in Commercial Litigation:

---

21 *Anchor Savings Bank*, §12.


24 Robert F. Lanzillotti was Dean Emeritus, Eminent Scholar Professor of American Economic Institutions and Director of the Public Policy Research Center, Graduate School of Business Administration, University of Florida.

25 Amanda K. Esquibel was an associate with the law firm of Holland and Knight, Tampa, Florida and a research fellow at the Public Policy Research Center and senior managing editor of the *Florida Law Review*. 
Present Value of Lost Opportunities” \(^{25}\) (L&E article).

L&E set forth a framework for determining the present value of an economic damages award and discussed several damages measurement concepts, including lost past profits compared to lost future profits. \(^{26}\) L&E states that they are addressing the “hodgepodge” of damages approaches presented by experts and considered by the courts and aim to articulate an improved framework of methodologies for measuring business losses. While the L&E article does not use the terms *ex ante* or *ex post*, L&E define the respective approaches (but in reverse order), as follows:

Approach B [the *ex ante* approach] carefully follows financial theory and calculates the expected profits at the time of the violation, arguing also that any information that becomes available subsequent to the violation is irrelevant. Approach B, therefore, ignores historical information. \(^{27}\)

Approach A [the *ex post* approach] emphasizes that expected profits are merely estimates or projections. Erroneous estimates by investors and businessmen are commonplace. Therefore, Approach A takes the position that it is advantageous to incorporate as much historical data as are available. Historical data are a better predictor than the expectations of businessmen. This approach also is in line with the predisposition of courts to look at the historical performance of a business in making damage awards. \(^{28}\)

The L&E article provides an economic and financial framework for determining the present value of a plaintiff’s damages award, and it does not express a preference for either the *ex ante* or *ex post* approach.

**Fisher and Romaine (1990)**

Franklin M. Fisher\(^{29}\) and R. Craig Romaine\(^{30}\) (F&R) wrote an article for the Winter 1990 issue of the *Journal of Accounting, Auditing & Finance*, “Janis Joplin’s Yearbook and the Theory of Damages” \(^{31}\) (the F&R article). The F&R article was written following a conference to discuss the Lanzillotti and Esquibel paper summarized above. The F&R article is quite robust and covers more ideas and issues than are summarized in this chapter. As such, the full F&R article is recommended reading for the damages analyst.

The F&R article title refers to Janis Joplin’s yearbook. As the article explains, during a Texas deposition, one of the authors was asked what damages a hypothetical plaintiff suffered if plaintiff’s yearbook was stolen by a defendant. Assume that Janis Joplin, at that time merely a high school classmate, signed the yearbook before she became famous. The yearbook is stolen and, at the time of the theft, comparable yearbooks were being bought and sold for $5. After the theft but before the trial, Janis Joplin becomes famous, so the yearbook with her signature is worth $1,000 on the trial date. Under the *ex ante* approach, the damages are based on the value


\(^{26}\) Ibid., 132–133.

\(^{27}\) In the L&E article, the terms “historical information” and “historical data” refer to information between the time of the violation and the time of trial. Approach A incorporates such historical information, i.e., actual profits (materialized values), whereas Approach B would not consider information subsequent to the time of violation.


\(^{29}\) Franklin M. Fisher received his PhD, MA, and AB in economics from Harvard University, and he is Professor of Microeconomics, Emeritus, Massachusetts Institute of Technology.

\(^{30}\) R. Craig Romaine received his PhD and MA in economics from the University of Chicago, and he is a vice president of Charles River Associates.

of the yearbook when it was stolen ($5). Under the *ex post* approach, the damages are based on the value of the yearbook at the time of trial ($1,000).

F&R conclude that economic losses to a plaintiff should be valued based upon the *ex ante* approach and are critical of damages determined using the *ex post* methodology. Some of the F&R opinions expressed in their article are capsulized below. F&R use the term “hindsight” to refer to information arising between the date of the legal violation and the date of the trial, although in fact all information available through the trial date could be viewed by the trial court with hindsight, including the information available through and including the date of the legal violation.

The violation did not merely deprive the plaintiff of the stream of returns that would have accompanied the asset. It also relieved the plaintiff of the uncertainty surrounding that stream. To use hindsight is to ignore the latter effect.32

[O]ur position is that hindsight should not be used [to estimate the stream of returns to be discounted].33

[T]here is no difference in principle between a claim for a stream of lost profits and a claim for the destruction of an asset. An asset is in fact worth the present value of the profit stream associated with it; to turn the matter around, the possession of a profit stream is the possession of an asset worth the present value of that stream.34

In short, F&R opine that plaintiff should be compensated for its loss valued as of the violation date, and plaintiff should not be compensated for any risks that it did not bear. Many lost profits experts favoring the *ex ante* methodology defend their belief based upon the F&R concept and article language that a plaintiff should not be compensated for lost profits when not bearing the attendant risk and uncertainty of achievement.

The F&R article includes discussion of many more topics, such as use of a risk-free pre-judgment interest rate and the treatment of taxes. F&R also object to the *ex post* approach because it provides a plaintiff the option to pursue a lawsuit when the *ex post* outcome is favorable and pass on a lawsuit when the *ex post* information indicates that plaintiff would have encountered an “unexpectedly disastrous turn of events” (i.e., negative damages).

**Bonsack (1990)**

In response to F&R, Konrad Bonsack (KB)35 wrote an article for the 1990-1991 edition of the *George Mason University Law Review*, “Damages Assessment, Janis Joplin’s Yearbook, and the Pie-Powder Court”36 (the KB article). Like the F&R article, the KB writing also is quite robust and covers more ideas and issues than are summarized in this chapter. As such, the full KB article also is recommended reading for the damages analyst.

The KB article includes an overview and analysis of the migration from *ex ante* damages of medieval times through the present court acceptance of either the *ex ante* or *ex post* methodology for measuring plaintiff’s economic loss. In this process, KB cites academic treatises and various cases as early as 1834 (which still echoed the “pie-powder court” *ex ante* damages, but with the addition of prejudgment interest to account for the delay from the legal violation date

32 Ibid., 154.
33 Ibid., 153.
34 Ibid., 149.
35 Konrad Bonsack was a managing associate with Nathan Associates.
through the damages award date\textsuperscript{37}). The KB article explains and defends the use of the \textit{ex post} damages methodology and often provides direct rebuttals to the opinions expressed by F&R. A summary of some of the reasons for KB’s preference for the \textit{ex post} methodology is presented below:

\[\text{T}he \text{assessment of damages should depend on information available up to the time of trial, and, therefore, hindsight should be used.}\textsuperscript{38}\]

An examination of the theory of compensatory damages assessment and its evolution in U.S. courts has shown that, today, the goal of compensatory damages awards is the restoration of the plaintiff to the position he would have occupied, absent the defendant’s violation, for all time. The measure of the change in the value of a damaged or destroyed asset, while often yielding a correct compensatory damages award, is not the proper focus of inquiry. Instead, the general framework of analysis requires the calculation of two distinct components: the sum of money that compensates for any past unavoidable losses, and the sum of money that enables the plaintiff to avoid all future adverse consequences, if any, resulting from the defendant’s violation. Within this framework of analysis, hindsight plays an indispensable role.\textsuperscript{39}

The KB article was perhaps one of the first treatises to frame the issue of damages determination methodologies as \textit{ex ante} and \textit{ex post}. KB recognizes that the violation and the trial are not simultaneous and that the trial often occurs much later in time. KB rejects the F&R notion that the violation relieved plaintiff of the risks of asset ownership. KB observes that the violation deprived the asset owner of both the risks and rewards of continued but-for asset ownership. In fact, KB observes that the violation and asset taking was a constructive forced sale, depriving the asset owner of any potential economic rewards, or suffering any hoped-for shortfalls, as time resolves certain risks and uncertainties following the violation. Thus, the period of economic injury does not conclude on the date of the legal violation but continues over time. In short, the passage of time will reveal, for better or worse, the intrinsic value of the asset as of the date of the legal violation.

\section*{Computational Mechanics of Business Valuation versus Lost Profits Methodologies}

The computational mechanics for determining \textit{ex ante} damages involving a lost future stream of expected economic income as of the date of the legal violation are relatively straightforward, at least from a conceptual viewpoint. Based only upon the \textit{ex ante} information, the damages analyst schedules the lost expected economic income into then-future periods and then determines the present value as of the date of injury using an appropriate, risk-inclusive discount rate. This analytical process should yield the damages measurement in terms of lost value as of the \textit{ex ante} date of the legal wrongdoing. That amount is translated to economic damages as of the trial date by application of either an economic or legal prejudgment interest rate, as

\begin{itemize}
\item \textsuperscript{37} \textit{Parks v. Boston}, 32 Mass. (15 Pick.) 198, 208–09 (1834).
\item \textsuperscript{38} Bonsack, “Damages Assessment, Janis Joplin’s Yearbook, and the Pie-Powder Court,” p. 1. This article defines “hindsight” as “knowledge of facts available only after the time of the violation.”
\item \textsuperscript{39} Ibid., 25–26.
\end{itemize}
appropriate.\textsuperscript{40}

For \textit{ex post} damages, there generally are two alternative approaches to computing plaintiff’s loss, both of which are influenced by the \textit{ex post} information arising after the date of the legal violation.

In the first alternative, the same computational process as described above for the \textit{ex ante} methodology may be followed, except that the \textit{ex ante} purported expected stream of lost economic profits may be adjusted or refined using the \textit{ex post} information, and, if appropriate, the applied discount rate may be amended to the extent that some risk or uncertainty has been resolved by the passage of time after the legal wrongdoing, as discussed in more depth in Chapter 17, “Discount Rates in Theory.” Because the described approach uses the \textit{ex post} information, it is appropriately categorized within the \textit{ex post} methodology. Some experts use this approach because they reject the opposing party’s or expert’s asserted \textit{ex ante} expected value as misstated, and use \textit{ex post} information or hindsight to correct any \textit{ex ante} error, often for determining the more realistic intrinsic value of the destroyed asset to its owner. For example, consider the example earlier in the chapter concerning an owner’s loss as of the date that an oil exploration and recovery lease was terminated. The plaintiff’s expert used the more favorable post-termination, \textit{ex post} oil prices in the determination of the lost value as of the \textit{ex ante} date. In that example, all projected losses by both the \textit{ex ante} and \textit{ex post} opposing experts were discounted back to the date of the legal violation.

In the second alternative, the \textit{ex post} damages analyst may apply different procedures for discounting and prejudgment interest than the \textit{ex ante} analyst, depending upon whether the post-injury losses occurred before the trial (i.e., past damages) or will occur after the trial (i.e., future damages). For the past damages, the \textit{ex post} expert attempts to determine what economic income was actually lost by the plaintiff. Although these figures are hypothetical “actual” economic income, and presumably more certain than the \textit{ex ante} projected or expected values, these amounts typically are presented to the trier of fact as the returns plaintiff would have experienced but for interference by the defendant. As such, the past losses are not discounted back to the \textit{ex ante} date but are subject to economic or prejudgment interest through the trial date. In contrast, the projected future or post-trial losses are discounted to the date of trial—rather than to the \textit{ex ante} or legal violation date—and are not subject to prejudgment interest. Arguably, the post-trial expected income has been honed by use of the \textit{ex post} information, which may influence the degree of unresolved risk and the discount rate, compared to the \textit{ex ante} values developed as of the date of the legal wrongdoing. Regardless, as many experienced experts note, the discount rate should still include risk premia for the remaining projection uncertainty and be compatible with the discount rates expected by investors in similarly risky projects on or about the trial date.

The Legal Requirements for Discounting and Interest

The legal principles for damages measurement include the general requirement to discount future economic losses to a present value as of the time of trial, as explained in Chapter 2, “Legal Principles for Lost Profits Damages and Related Expert Testimony.” The mathematics for discounting are explained in detail in Chapter 16, “Present Value Concepts and Damages Modeling.” The types of discount rates available to the expert are explored in Chapter 17, “Discount Rates

\textsuperscript{40} For purposes of this discussion, the damages analyst is assumed to perform damages modeling as well as the interest or discounting calculations. This caveat recognizes the possibility of an expert developing a damages opinion without performing the subject analysis, modeling, and damages computations, such as by adopting a simple \textit{ex ante} or \textit{ex post} yardstick measure of a business value to opine about any loss by a plaintiff.
in Theory.” From a general legal viewpoint, however, discounting of future losses is required:

Future profits should be discounted to present value at an appropriate rate because the purpose of the award of damages is to provide a fund that, including principal and interest, will yield plaintiff an amount equivalent of its loss.41

Similarly, the legal principles related to past damages require the application of interest through the date of trial to compensate a plaintiff for the time value of money; this concept is consistent with economic and financial theory. Prejudgment interest may be based upon an economic or legal rate. Although economic interest generally is applied on a compound basis, a legal rate of interest may be either simple or compound. Both the rate of legal prejudgment interest and its application on a simple or compound basis are topics the damages expert may discuss with the attorney-client and rely upon the guidance received for the calculation of the prejudgment interest. The topic of prejudgment interest is addressed in full in Chapter 20, “Pre- and Post-judgment Interest.”

When damages are initially valued at a point or points in time before the trial, the legal requirement generally allows for interest through the date of trial. This legal principle generally applies to the ex ante approach that discounts all post-violation date losses to the ex ante date of legal wrongdoing. For example, in Scholz et al. v. Metropolitan Pathologists, P.C., the Colorado Supreme Court held:

If the trier of fact discounts future damages to the date of the incident, then an interest factor should be used to convert the damages from a date-of-incident value into a date-of-trial value.42

A plaintiff usually is not compensated contemporaneously as of the date of the wrongful act for any loss caused by the defendant’s legal wrongdoing. As a consequence, the damages expert should translate the past and future economic losses into values on or about the trial date. The past damages are computed including prejudgment interest based upon either a legally required statutory rate or, otherwise, an acceptable economic rate for the lost use of money. For future damages, the present value is determined using an appropriate discount rate.

The steps in the ex ante and ex post approaches for computing interest and for discounting are conceptually straightforward.

For the ex ante approach, to determine the total award demand at the time of trial, all expected periodic lost economic income after the violation date is discounted to the date of the violation. Then, the present value of the damages as of the ex ante violation date is the base used to determine the economic or prejudgment interest amount, on or about the trial date.

For the ex post methodology, the application of discounting or interest depends upon the initial valuation date for plaintiff’s losses. If plaintiff’s lost business value or lost profits are initially valued as of the ex ante date but considering ex post information, then computed damages are first discounted to the ex ante valuation date and the resultant present value is then incremented for interest to the date of trial. Mechanically, this is the same method used for the ex ante approach.

For many ex post lost profits analyses, the past damages are determined as the estimated profits plaintiff would have achieved but for the defendant’s violation and at the times that those amounts would have been achieved. Therefore, the past damages are not discounted, but only subject to interest to the date of trial. Further, post-trial or future damages are discounted to the trial date (rather than the ex ante valuation date), and economic or prejudgment interest is not applied to the post-trial damages amounts.

**Ex Ante and Ex Post Conditions for Parity in Final Results**

Experts have considered whether the *ex ante* and *ex post* approaches will produce differing damages amounts and, more specifically, whether the total damages computed using the business valuation methodology will constitute the upper limit of any lost profits damages. This section explores the premises and conditions required for the two methodologies to yield the same damages total. Of course, any differences in the computational premises can result in differing damages amounts, including the lost profits damages exceeding the related lost business value damages.

*Ex post* or lost profits damages and *ex ante* or lost business value damages will necessarily be equal only under a well-defined but narrow set of conditions. The monetary parity will result only if the alternative computations employ the same premises and calculation factors, including but not limited to the same ultimate damages present value date (i.e., time of the trial), standard of value, information set, unresolved risk factors, loss period, discount rate, prejudgment interest rate, and offsetting mitigation. If equality exists for all such considerations or variables, then lost business value and lost profits damages amounts will be the same, inclusive of discounting and prejudgment interest. As a practical matter, all things are seldom equal, and opposing experts seldom, if ever, agree on all damages model premises, calculation factors, and input data. Considering the facts and circumstances related to a particular case, coupled with the court’s objective of measuring plaintiff’s loss of but-for economic income in terms of the award amount needed to make plaintiff economically whole, opposing experts often develop and present markedly different total damages amounts, including discounting and interest rates, when experts use the alternative methodologies for lost business value compared to lost profits.

It is important to note that the *ex ante* and *ex post* methods for determining total damages at the time of trial will produce identical results when all computational factors are the same, including the discounting and interest rates. This equivalence remains true even when the discounting and interest computations are applied using different initial valuation dates. Specifically, assume that both the *ex ante* and *ex post* damages analysts identify the same lost economic income by period for a finite period of damages following the legal violation, but the *ex ante* expert discounts all losses to the *ex ante* valuation date and then applies interest to the trial date, while the *ex post* expert applies only interest to the past damages and discounts the future damages to the date of trial. For both experts to compute identical total damages as of the trial date, the discounting, and prejudgment interest rates would have to be the same and, further, both the interest and discounting calculations would have to be performed on a consistent, compound basis.

It would be rare to find the *ex ante* and *ex post* damages analysts in agreement about (1) all of the objective or quantitative computational factors used to model the damages before interest or discounting and (2) the discount rate and the interest rate, including whether interest is simple or compound. Nevertheless, an exploration of the circumstances where the *ex ante* and *ex post* approaches yield the same damages figure serves to illustrate the important similarities and differences between the approaches. This exercise is performed in the following section.

---


44 The formula for discounting is $1/(1+i)^n$, which, by definition, is compounded. Parity is reached only if prejudgment interest is also compounded in both methods.
Ex Ante and Ex Post Concepts Illustrated

The remainder of this chapter illustrates the respective concepts and attributes of the *ex ante* and *ex post* approaches to measuring lost profits damages.\(^{45}\) For this purpose, a simple case study is used based on the following assumed facts:

- For five years before the event giving rise to the damages, plaintiff earned $1 million in the first year, subsequently growing at 3 percent a year, compounded annually, through Year 5.
- Beginning in Year 6, plaintiff was injured by the wrongful conduct of the defendant, and, in that year, plaintiff’s profits declined to $100,000.
- The trial date was at the beginning of Year 9, or three years following the date of injury. Damages for the three years from the date of injury through the date of trial (i.e., years 6 through 8, inclusive) constitute the past lost profits.
- Between the date of injury and the trial date, plaintiff was able to partially mitigate its damages by commencing the gradual recovery of the lost sales and profits.
- As of the trial date, plaintiff’s expert projected (a) plaintiff’s but-for economic profits had plaintiff not been injured by the defendant, and (b) plaintiff’s anticipated actual, but impaired, economic profits through Year 12.\(^{46}\) By Year 13, plaintiff anticipated that it would be able to fully mitigate its damages, at which time its but-for and experienced or anticipated actual economic income would converge. Damages for the four years from date of trial through Year 12 (i.e., years 9 through 12, inclusive) are the period of future lost profits.
- For convenience and simplicity, all amounts are assumed to have been received ratably throughout the year, so the mid-year convention was used for discounting lost profits to present value.

The presumed case facts are illustrated in Exhibit 4.1 and Exhibit 4.2. The case study reflects a finite or closed period of damages, not the permanent destruction of all or a portion of plaintiff’s business value.

The figures below could be used as demonstrative exhibits at trial to educate the trier of fact about the nature of plaintiff’s loss to determine the total damages as of the trial date. Exhibit 4.1 is a line graph. Damages represent the difference between the projected but-for economic profits and the actual past or anticipated future actual economic profits for years 6 through 12.

---


\(^{46}\) In practice, the but-for model is sometimes referred to as the “unimpaired” model, and the actual model is referred to as the “impaired” model.
Exhibit 4.1: But-for and Actual Models: Line Graph

Another way of presenting the information in Exhibit 4.1 is reflected in Exhibit 4.2, which is a bar graph instead of a line graph. Both charts present the same information, but the expert could prepare both and make the selection for trial use given the preference of the attorney-client.

Exhibit 4.2: But-for and Actual Models: Bar Graph
Plaintiff’s lost profits damages are implied in Exhibit 4.1 and Exhibit 4.2 as the difference between the projected but-for and actual or anticipated economic profits for years 6 through 13 (with Year 13 having $0 damages). The lost profits may be directly displayed in graphical form, as illustrated by Exhibit 4.3. This chart has the advantage of focus on plaintiff’s loss, but the disadvantage of eliminating the trend information for the but-for and impaired streams of economic income.

Exhibit 4.3: Damages Graph
In an *ex ante* damages analysis, only information available at the time of the injury is considered for the computation of plaintiff’s lost business value or lost profits. The *ex ante* date is used for the pre-interest determination of the present value of plaintiff’s loss, so both the past and future lost profits with respect to the trial date are discounted to the date of injury. *Ex ante* damages—discounted at a 10 percent rate—compared to the undiscounted damages are presented graphically in Exhibit 4.4.  

**Exhibit 4.4: Ex Ante Discounted Damages Graph**

![Ex Ante Discounted Damages Graph](image)

47 Although the visual image suggests that the discounted losses in the latter part of the damages period are relatively closer to the respective undiscounted amounts and, thus, are not discounted as much, such is not the case. In fact, the cumulative discounting factors increase over the damages period, but the amounts subject to discounting are rapidly declining and are projected to be fully mitigated by Year 13; hence, the potentially misleading visual impression.
One approach to an ex post lost profits analysis involves the use of ex post information to refine the but-for projections of economic income as of the ex ante date of legal wrongdoing. In this case, the computed losses are first discounted to the ex ante date before adjusting for interest to the date of trial. In other ex post analyses, the computed lost economic income through the trial date (past losses) is not discounted but subject only to interest to the trial date, while the projected lost economic income after the trial (future losses) is subject only to discounting to the trial date and not interest. For this latter form of an ex post damages analysis, Exhibit 4.5 illustrates the pre-interest past losses and the post-trial or future losses that are discounted to the date of trial at a 10 percent discount rate.

Exhibit 4.5: Ex Post Discounted Damages Graph

Total damages, inclusive of discounting and interest, at the time of trial may be equal for the ex ante and ex post methodologies only under special, limited circumstances, as explained above. Regardless of the particular ex post approach used by the expert (i.e., ex ante measurement date before interest but using ex post information versus ex post past losses subject only to interest plus future losses discounted to the trial date but not subject to interest), total damages at the date of trial cannot equal the ex ante amount unless all computation factors are the same. In particular, the prejudgment interest rate and the discount rate must be equal (e.g., 10 percent for each) and the prejudgment interest rate must be compound for both the ex ante and ex post approaches. Under this narrow and rare set of circumstances, the ex ante and ex post damages as of the trial date necessarily will be equivalent.
The damages expert can benefit from knowledge of this potential parity as a basis for understanding the reasons that total damages at the trial date often differ substantially between use of the *ex ante* and the *ex post* methodology. Exhibit 4.6 demonstrates that parity is achieved for the hypothetical case facts when subjected, for example, to a 10 percent discount rate and a 10 percent annually compounded prejudgment interest rate (PJI).

**Exhibit 4.6: Ex Ante v. Ex Post at 10% Discount and PJI Rates (Parity)**

<table>
<thead>
<tr>
<th></th>
<th>Ex Ante</th>
<th>Ex Post</th>
<th>Difference</th>
<th>% Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discounted</td>
<td>$3,358,000</td>
<td>$4,009,000</td>
<td>$651,000</td>
<td>19.39%</td>
</tr>
<tr>
<td>Prejudgment Interest (PJI)</td>
<td>1,111,498</td>
<td>460,498</td>
<td>(651,000)</td>
<td>-58.57%</td>
</tr>
<tr>
<td>PJI plus Discounted Damages</td>
<td>$4,469,498</td>
<td>$4,469,498</td>
<td>$0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

In practice, the discount rate tends to be higher than the interest rate, regardless of whether (1) a risk-adjusted or risk-abated\(^\text{48}\) discount rate is used, (2) the interest rate is applied either on a simple or compound basis, and (3) the damages analysis is performed using an *ex ante* or an *ex post* approach. Whenever the discount rate is higher than the prejudgment interest rate, assuming all other computational factors are the same, an *ex post* analysis will produce higher total damages, as of the trial date, than an *ex ante* analysis. This is illustrated in Exhibit 4.7.

**Exhibit 4.7: Ex Ante v. Ex Post at 10% Discount Rate and 7% PJI Interest Rate**

<table>
<thead>
<tr>
<th></th>
<th>Ex Ante</th>
<th>Ex Post</th>
<th>Difference</th>
<th>% Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discounted</td>
<td>$3,358,000</td>
<td>$4,009,000</td>
<td>$651,000</td>
<td>19.39%</td>
</tr>
<tr>
<td>Prejudgment Interest (PJI)</td>
<td>755,694</td>
<td>317,860</td>
<td>(437,834)</td>
<td>-57.94%</td>
</tr>
<tr>
<td>PJI plus Discounted Damages</td>
<td>$4,113,694</td>
<td>$4,326,860</td>
<td>$213,166</td>
<td>5.18%</td>
</tr>
</tbody>
</table>

Conversely, if a discount rate is lower than the PJI rate, then an *ex post* analysis will produce a lower result for total damages as of the trial date than an *ex ante* analysis. Exhibit 4.8 presents an example to support this theoretical observation, although this actual relationship is not often observed in practice.\(^9\)

**Exhibit 4.8:** *Ex Ante v. Ex Post* at 4% Discount Rate and 7% PJI Interest Rate

<table>
<thead>
<tr>
<th>Summary – <em>Ex Ante</em> and <em>Ex Post</em> Compared at a Discount Rate of 4% and a PJI Rate of 7% Compounded Annually</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ex Ante</strong></td>
</tr>
<tr>
<td>$4,200,000</td>
</tr>
<tr>
<td>Discounted</td>
</tr>
<tr>
<td>Prejudgment Interest (PJI)</td>
</tr>
<tr>
<td>PJI plus Discounted Damages</td>
</tr>
</tbody>
</table>

Note that the “swing” between Exhibit 4.7 and Exhibit 4.8 is $456,520, summarized in Exhibit 4.9 as follows:

**Exhibit 4.9:** Difference Between Exhibit 4.7 and Exhibit 4.8 (Swing)

<table>
<thead>
<tr>
<th>Difference (Swing) Discount Rate of 10% versus 4% and PJI of 7% Compounded Annually</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disc. Rate</strong></td>
</tr>
<tr>
<td>(Parity) Ex. 4.6 (Disc. Rate &gt;Int. Rate)</td>
</tr>
<tr>
<td>Discount Rate</td>
</tr>
<tr>
<td>PJI Rate</td>
</tr>
<tr>
<td>Rounding Disc. Damages</td>
</tr>
<tr>
<td>Difference</td>
</tr>
<tr>
<td>Swing</td>
</tr>
</tbody>
</table>

For the reader interested in the data used to generate the demonstrative exhibits, the computer spreadsheet model utilized for the case study is included as Exhibit 4.10.

---

\(^9\) This situation could occur if then-current market discount rates are low but the prejudgment interest rate is set by law at a higher rate.
The choice of the *ex ante* as opposed to the *ex post* damages computation methodology can result in differing total damages as of the trial date, even though all other computational factors are identical, except for the prejudgment interest rate and the discount rate, including the manner of application of these rates. In practice, overall differences in total damages between the two methodologies are common and arise for three important reasons. First, as explained, the application techniques for the interest and discount rates are different. Second, opposing experts may use different interest and discount rates, even if the same periods of application and methods of compounding are applied. And third, the *ex ante* and *ex post* methods may use different damages modeling input factors (e.g., volume of lost sales and related net profits) other than the interest or discount rates.
Exhibit 4.10: *Ex Ante* v. *Ex Post* Compared to a 10% Discount Rate and 7% PJI Rate

**Supporting Model - Ex Ante & Ex Post Compared**

at a Discount Rate of 10% and a PJI Rate of 7% Compounded Annually

<table>
<thead>
<tr>
<th>Description</th>
<th>Year</th>
<th>Actual</th>
<th>ProjActual</th>
<th>Buffer</th>
<th>Damages</th>
<th>DamCum</th>
<th>n</th>
<th>Factor</th>
<th>Ex Ante</th>
<th>Ex AnteCum</th>
<th>Ex Post</th>
<th>Ex PostCum</th>
<th>Mark1</th>
<th>Mark2</th>
<th>PJI on Ex Post Dam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost Past Profits (3)</td>
<td>1</td>
<td>$1,000,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lost Future Profits (4)</td>
<td>6</td>
<td>$100,000</td>
<td>$1,160,000</td>
<td>$1,060,000</td>
<td>$1,060,000</td>
<td>-0.5</td>
<td>0.9335</td>
<td>$1,011,000</td>
<td>$1,011,000</td>
<td>$1,060,000</td>
<td>$1,060,000</td>
<td>2.5</td>
<td>1.1843</td>
<td>$195,351</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>$290,000</td>
<td>$1,195,000</td>
<td>$905,000</td>
<td>$1,965,000</td>
<td>-1.5</td>
<td>0.8668</td>
<td>$784,000</td>
<td>$1,795,000</td>
<td>$905,000</td>
<td>$1,965,000</td>
<td>1.5</td>
<td>1.1068</td>
<td>$96,669</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>$480,000</td>
<td>$1,231,000</td>
<td>$751,000</td>
<td>$2,716,000</td>
<td>-2.5</td>
<td>0.7880</td>
<td>$592,000</td>
<td>$2,387,000</td>
<td>$751,000</td>
<td>$2,716,000</td>
<td>0.5</td>
<td>1.0344</td>
<td>$25,840</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>$670,000</td>
<td>$1,286,000</td>
<td>$598,000</td>
<td>$3,314,000</td>
<td>-3.5</td>
<td>0.7074</td>
<td>$428,000</td>
<td>$2,815,000</td>
<td>-0.5</td>
<td>0.9335</td>
<td>$570,000</td>
<td>$3,286,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>$860,000</td>
<td>$1,306,000</td>
<td>$446,000</td>
<td>$3,760,000</td>
<td>-4.5</td>
<td>0.6512</td>
<td>$290,000</td>
<td>$3,105,000</td>
<td>-1.5</td>
<td>0.8668</td>
<td>$387,000</td>
<td>$3,673,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>$1,050,000</td>
<td>$1,345,000</td>
<td>$295,000</td>
<td>$4,055,000</td>
<td>-5.5</td>
<td>0.5920</td>
<td>$175,000</td>
<td>$3,280,000</td>
<td>-2.5</td>
<td>0.7880</td>
<td>$232,000</td>
<td>$3,905,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>$1,240,000</td>
<td>$1,385,000</td>
<td>$145,000</td>
<td>$4,200,000</td>
<td>-6.5</td>
<td>0.5382</td>
<td>$78,000</td>
<td>$3,358,000</td>
<td>-3.5</td>
<td>0.7164</td>
<td>$104,000</td>
<td>$4,009,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>$1,427,000</td>
<td>$1,427,000</td>
<td>$0</td>
<td>$4,200,000</td>
<td>-7.5</td>
<td>0.4893</td>
<td>$0</td>
<td>$3,388,000</td>
<td>-4.5</td>
<td>0.6512</td>
<td>$0</td>
<td>$4,009,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Lost Future Profits (4)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
<th>ProjActual</th>
<th>Buffer</th>
<th>Damages</th>
<th>DamCum</th>
<th>n</th>
<th>Factor</th>
<th>Ex Ante</th>
<th>Ex AnteCum</th>
<th>Ex Post</th>
<th>Ex PostCum</th>
<th>Mark1</th>
<th>Mark2</th>
<th>PJI on Ex Post Dam</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>$670,000</td>
<td>$1,268,000</td>
<td>$598,000</td>
<td>$3,314,000</td>
<td>-3.5</td>
<td>0.7164</td>
<td>$428,000</td>
<td>$2,815,000</td>
<td>-0.5</td>
<td>0.9335</td>
<td>$570,000</td>
<td>$3,286,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>$860,000</td>
<td>$1,306,000</td>
<td>$446,000</td>
<td>$3,760,000</td>
<td>-4.5</td>
<td>0.6512</td>
<td>$290,000</td>
<td>$3,105,000</td>
<td>-1.5</td>
<td>0.8668</td>
<td>$387,000</td>
<td>$3,673,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>$1,050,000</td>
<td>$1,345,000</td>
<td>$295,000</td>
<td>$4,055,000</td>
<td>-5.5</td>
<td>0.5920</td>
<td>$175,000</td>
<td>$3,280,000</td>
<td>-2.5</td>
<td>0.7880</td>
<td>$232,000</td>
<td>$3,905,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>$1,240,000</td>
<td>$1,385,000</td>
<td>$145,000</td>
<td>$4,200,000</td>
<td>-6.5</td>
<td>0.5382</td>
<td>$78,000</td>
<td>$3,358,000</td>
<td>-3.5</td>
<td>0.7164</td>
<td>$104,000</td>
<td>$4,009,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>$1,427,000</td>
<td>$1,427,000</td>
<td>$0</td>
<td>$4,200,000</td>
<td>-7.5</td>
<td>0.4893</td>
<td>$0</td>
<td>$3,388,000</td>
<td>-4.5</td>
<td>0.6512</td>
<td>$0</td>
<td>$4,009,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Prejudgment Interest**

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
<th>ProjActual</th>
<th>Buffer</th>
<th>Damages</th>
<th>DamCum</th>
<th>n</th>
<th>Factor</th>
<th>Ex Ante</th>
<th>Ex AnteCum</th>
<th>Ex Post</th>
<th>Ex PostCum</th>
<th>Mark1</th>
<th>Mark2</th>
<th>PJI on Ex Post Dam</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.225</td>
<td>$755,694</td>
<td>$317,860</td>
<td>$317,860</td>
<td>Total PJI $317,860</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Damages plus Prejudgment Interest Assuming a 10% Discount Rate and a 7% Prejudgment Interest Rate**

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
<th>ProjActual</th>
<th>Buffer</th>
<th>Damages</th>
<th>DamCum</th>
<th>n</th>
<th>Factor</th>
<th>Ex Ante</th>
<th>Ex AnteCum</th>
<th>Ex Post</th>
<th>Ex PostCum</th>
<th>Mark1</th>
<th>Mark2</th>
<th>PJI on Ex Post Dam</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.225</td>
<td>$755,694</td>
<td>$317,860</td>
<td>$317,860</td>
<td>Total PJI $317,860</td>
<td>$4,113,694</td>
<td>$4,326,869</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reconciliation of the *Ex Ante* and *Ex Post* Methodologies

As illustrated above, opposing experts’ opinions and methodologies can vary significantly. Experts and attorneys will address these differences during the litigation process at various points in time, including discovery, depositions, direct testimony, cross-examination, rebuttal testimony, and in expert reports.

The factors that cause differences between *ex ante* and *ex post* results can be delineated and explained. Inputs to the model can vary significantly between *ex ante* and *ex post* analyses because an *ex ante* analysis cannot include consideration of facts that became known subsequent to the violation (i.e., subsequent events), but an *ex post* analysis can take such events into consideration. For example, factors such as lost sales units, the sales price per unit, variable versus fixed expenses, and the resulting net lost profits could differ significantly between an *ex ante* and *ex post* analysis as a result of consideration of subsequent events.

The relevant time frames can also be different between *ex ante* and *ex post* analyses. For example, the above case study assumes that plaintiff was able to fully mitigate its damages by Year 13. However, all other factors being equal, consideration of subsequent events could change the estimated damages time frame. As the time delay between the violation and trial increases, the potential impact of subsequent events on the damages analysis increases.

Discount rates for *ex ante* and *ex post* models can vary. Theoretically, as discussed previously, a business valuation discount rate incorporates a risk premium for the uncertainty of possible *ex ante* outcomes. By considering the actual post-violation or *ex post* information, discount rates for an *ex post* analysis may be lower than discount rates for an *ex ante* analysis because actual post-violation results reduce the level of uncertainty and risk during the post-violation time frame. As the time delay between the violation and trial increases, the potential impact of subsequent events on discount rates increases.

What cannot be resolved by quantitative methods between opposing experts is the fundamental difference in views between those academics and damages experts who respectively believe either the *ex ante* or *ex post* approach better measures lost business value or lost profits damages for a plaintiff. These two groups of individuals simply have opposing sets of intellectual philosophies and beliefs about which damages measurement methodology is better suited to evaluating the lost business value or lost profits. For example, proponents of the *ex ante* methodology often ardently argue that a plaintiff should not be compensated for risks it did not bear and should not be compensated for more than the loss as of the legal violation date. In contrast, proponents of the *ex post* methodology usually fervently contend that post-violation information should be used to ascertain the *intrinsic* or other value of the impaired asset as a result of defendant’s legal wrongdoing, whether that value is better or worse than was expected when based upon *ex ante* information.

Conclusion

The *ex ante* and *ex post* concepts have historical roots dating back to medieval times in England, when disputes were resolved contemporaneously. Over the ensuing centuries, the time between the legal violation and recovery became increasingly extended. As a result of the delays, for more than a century case law emerged addressing the question of whether economic damages should be valued at the time of the legal violation or a later date (usually, the time of trial, as a proxy for the date of recovery). Over the past 25 years, the debate has intensified and received increasing attention by the courts, academics, and practitioners and currently remains unresolved. In fact, it may be unresolvable.
# TABLE OF CONTENTS

**ABOUT THE EDITORS**
1

**ABOUT THE PUBLISHER**
3

**ABOUT THE AUTHORS**
4

**ACKNOWLEDGEMENTS**
19

**FOREWORD**
21

**PREFACE**
25

### CHAPTER 1 INTRODUCTION TO LOST PROFITS
- Introduction
  29
- Overview of Lost Profits
  29
- Proving Lost Profits
  35
- Conclusion
  39

### CHAPTER 2 LEGAL PRINCIPLES FOR LOST PROFITS DAMAGES AND RELATED EXPERT TESTIMONY
- Introduction
  41
- The Law Applicable to Lost Profits Damages
  41
- Legal Damages Theories Underlying the Award of Lost Profits
  42
- Proving Lost Profits Damages
  44
- Types of Evidence of Lost Profits
  49
- Lost Profits for a New Business
  53
- Calculating Lost Profits
  56
- Expert Testimony in Lost Profits Cases
  58
- Conclusion
  65

### CHAPTER 3 ALTERNATIVE METHODOLOGIES FOR LOST PROFITS DAMAGES
- Introduction
  67
- Overview: Claims for Lost Profits
  68
- Lost Profits Foundational Assumptions
  69
- The Causation Issue
  75
- Analyzing the Costs Saved
  76
- Time Period of Loss
  79
- Discounting
  79
- Other Methods for Determining Lost Profits: Extra Expense
  80
- Conclusion
  81
**CHAPTER 4  EX ANTE VERSUS EX POST**  
83
- Introduction 83
- The Terms *Ex Ante* and *Ex Post* 84
- Information Considered and Relied Upon 86
- Development of Case Law Regarding *Ex Ante* and *Ex Post* Analyses 88
- Summary of the Current Academic Debate 92
- Computational Mechanics of Business Valuation versus Lost Profits Methodologies 95
- The Legal Requirements for Discounting and Interest 96
- *Ex Ante* and *Ex Post* Conditions for Parity in Final Results 98
- *Ex Ante* and *Ex Post* Concepts Illustrated 99
- Reconciliation of the *Ex Ante* and *Ex Post* Methodologies 108
- Conclusion 108

**CHAPTER 5  BUSINESS VALUATION METHODOLOGY**  
109
- Introduction 109
- Fundamentals of Business Valuation Methodology 110
- Approaches and Methods to Estimate Business Value 119
- Common Business Valuation Adjustments 129
- Value Conclusion: Reconciling the Value Estimates from Different Methods and Applying Adjustments 131
- Standard of Value Considerations 132
- Business Valuation Is Inherently an *Ex Ante* Methodology 133
- Business Valuation Is Inherently an After-tax Methodology 134
- Potential Issues with the Business Valuation Methodology 134

**CHAPTER 6  CONTRASTING THE LOST BUSINESS VALUE AND LOST PROFITS METHODOLOGIES**  
137
- Introduction 137
- Key Distinctions Between Lost Profits and Lost Business Value 138
- Common Principles: Economics, Finance, and Accounting 140
- Making the Plaintiff Economically Whole: A Disagreement in Principle 141
- The Expected Stream of Economic Income 142
- Accounting for Risk in the But-for Projection or the Discount Rate 143
- Objective and “Subjective” Risk Adjustments 145
- Lost Profits Methodology and Discrete Damages Periods 148
- Can Lost Profits Exceed the Lost Business Value? 149
- Addressing Loss Causation 151
- Undiscounted Past Losses: A Flaw of the Lost Profits Methodology? 153
<table>
<thead>
<tr>
<th>Hybrid Methodology as an Alternative</th>
<th>154</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courts Recognize Both the Lost Profits and Business Value Methodologies</td>
<td>156</td>
</tr>
<tr>
<td>Lost Business Value as the Better Damages Measure</td>
<td>157</td>
</tr>
<tr>
<td>Identifying Negative Damages</td>
<td>158</td>
</tr>
<tr>
<td>Fair Market Value and the Owner’s “Economic Profit”</td>
<td>158</td>
</tr>
<tr>
<td>Conclusion: Legal Strategy and the Expert</td>
<td>159</td>
</tr>
<tr>
<td>Appendix: Selected Publications</td>
<td>160</td>
</tr>
</tbody>
</table>

**CHAPTER 7 PROVING LOSS CAUSATION**

<table>
<thead>
<tr>
<th>Introduction</th>
<th>171</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximate Cause Overview</td>
<td>172</td>
</tr>
<tr>
<td>Objective of the Chapter</td>
<td>173</td>
</tr>
<tr>
<td>Common Legal Causes of Action</td>
<td>174</td>
</tr>
<tr>
<td>Liability Considerations</td>
<td>176</td>
</tr>
<tr>
<td>Factual Cause of Loss and Scope of Liability Considerations</td>
<td>180</td>
</tr>
<tr>
<td>Role of the Damages Expert</td>
<td>192</td>
</tr>
<tr>
<td>A Framework for Assessing Causation</td>
<td>194</td>
</tr>
<tr>
<td>Common Errors and Potential Challenges in Causation Analysis</td>
<td>196</td>
</tr>
<tr>
<td>Conclusion</td>
<td>200</td>
</tr>
<tr>
<td>Appendix: Proving Loss Causation—Example Case Decisions Involving Causation Issues</td>
<td>201</td>
</tr>
</tbody>
</table>

**CHAPTER 8 INDUSTRY AND ECONOMIC RESEARCH**

<table>
<thead>
<tr>
<th>Introduction</th>
<th>209</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context for Economic Research</td>
<td>210</td>
</tr>
<tr>
<td>Evaluation of the Business for the Product at Issue</td>
<td>211</td>
</tr>
<tr>
<td>Market Factors</td>
<td>220</td>
</tr>
<tr>
<td>Economic Factors</td>
<td>224</td>
</tr>
<tr>
<td>Product at Issue Is Part of the Product Sold</td>
<td>235</td>
</tr>
<tr>
<td>Profits from Product at Issue Depend on Success or Failure</td>
<td>236</td>
</tr>
<tr>
<td>Marketing Techniques to Survey Consumers</td>
<td>237</td>
</tr>
<tr>
<td>Sample Data</td>
<td>238</td>
</tr>
<tr>
<td>Validating Data</td>
<td>239</td>
</tr>
<tr>
<td>Conclusion</td>
<td>243</td>
</tr>
</tbody>
</table>

**CHAPTER 9 STATISTICS IN LOST PROFITS MEASUREMENTS**

<table>
<thead>
<tr>
<th>Introduction</th>
<th>245</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Intuition of Inferential Statistics</td>
<td>249</td>
</tr>
<tr>
<td>Probability</td>
<td>251</td>
</tr>
<tr>
<td>Parameter Estimates and Confidence Intervals</td>
<td>256</td>
</tr>
</tbody>
</table>
Hypothesis Testing 258
Data Sampling: Methods and Sample Size 270
Statistics for Describing Complex Data 274
Meaning and Interpretation of Various Statistical Measures 276
Nonlinear Relationships Between X and Y 279
Cross-sectional versus Time Series Data 281
OLS Linear Regression Analysis 283
OLS Assumptions and Tests 284
Time Series Analysis 286
S-curves 289
Event Studies Application of Regression Analysis 291
Conclusion 296

CHAPTER 10 ANALYSIS OF PROJECTED LOST REVENUE 297
Introduction 297
Understanding the Damaged Entity 297
Projecting Lost Revenue 302
Testing the Sensibility of the Projection 309
Common Counterarguments 310
Rebuttal Analysis Considerations 310

CHAPTER 11 ANALYSIS OF COST BEHAVIOR 313
Introduction to Avoided Costs 313
Fundamental Cost Concepts 314
Conceptual Analysis of Cost Behavior 321
Quantitative Analysis of Cost Behavior 327
Conclusion 344

CHAPTER 12 MITIGATION OF DAMAGES IN THE LOST PROFITS CALCULATION 345
Introduction 345
Types of Mitigation 346
Factors Impacting the Plaintiff’s Ability to Mitigate Losses 349
Consideration of Mitigation by the Damages Expert in Lost Profits Calculations 358
Conclusion 362

CHAPTER 13 USING NET CASH FLOW VERSUS ACCRUAL NET INCOME 363
Overview 363
Net Income versus Net Cash Flow 364
Calculating Lost Cash Flow from Accrual-Based Financial Statements: An Example 367
When Will the Difference Be Important? 374
Arguments Supporting Each Method 375
Conclusion 378

CHAPTER 14 PERIOD OF DAMAGES 379
Introduction 379
General Considerations for Determining the Period of Damages 380
Temporary Business Interruption or Destruction of the Business 382
Longer Periods of Damages and General Legal Guidance 384
Period of Damages for Selected Matters of Law and/or Issues of Fact 387
Conclusion 396

CHAPTER 15 THE ABILITY TO ACHIEVE LOST SALES AS A CONSIDERATION IN DAMAGES ANALYSES 397
Introduction 397
Legal Frameworks 398
Economic Frameworks 403
Conclusion 414

CHAPTER 16 PRESENT VALUE CONCEPTS AND DAMAGES MODELING 415
Introduction 415
Lost Profits Damages and the Time Value of Money 417
Legal Principle of Estimating Present Values 419
Past versus Future Damages and the Time Value of Money 421
The Basic Mathematics of Interest and Discounting Calculations 425
Capitalization Methodology and Net Present Value 430
Modeling Technique: Simple Examples 433
Modeling Technique: Advanced Examples 436
Influence of Discounting on Future Dollars 444

CHAPTER 17 DISCOUNT RATES IN THEORY 447
Introduction 447
The Discount Rate 449
Risk-free Rate 451
Risk Premium 453
Risk Aversion versus Risk Neutrality 454
Business Valuation Methodology Discount Rates 456
Lost Profits Methodology Discount Rates 489
Conclusion 491

CHAPTER 18 DISCOUNT RATES IN PRACTICE 493
Introduction 493
General Rule: Plaintiff’s Cost of Capital as the Discount Rate 494
<table>
<thead>
<tr>
<th>CHAPTER 19 BEFORE-TAX VERSUS AFTER-TAX DISCOUNT RATES</th>
<th>523</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>523</td>
</tr>
<tr>
<td>Business Income Taxes in Litigation</td>
<td>524</td>
</tr>
<tr>
<td>Calculation Factors for Income-taxable Damages</td>
<td>525</td>
</tr>
<tr>
<td>Past Losses: Making the Plaintiff Economically Whole</td>
<td>526</td>
</tr>
<tr>
<td>Future Losses: Making the Plaintiff Economically Whole</td>
<td>526</td>
</tr>
<tr>
<td>Overview and Purpose of Remaining Chapter Sections</td>
<td>527</td>
</tr>
<tr>
<td>Time Value of Money and <em>Ex Ante</em> versus <em>Ex Post</em> Damages</td>
<td>528</td>
</tr>
<tr>
<td>Past Damages</td>
<td>530</td>
</tr>
<tr>
<td>Future Damages</td>
<td>533</td>
</tr>
<tr>
<td>Other Considerations</td>
<td>549</td>
</tr>
<tr>
<td>Practical Reasons Experts Do Not Apply Income Tax Refinements</td>
<td>555</td>
</tr>
<tr>
<td>Conclusion</td>
<td>555</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 20 PRE- AND POST-JUDGMENT INTEREST</th>
<th>557</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>557</td>
</tr>
<tr>
<td>Prejudgment versus Post-judgment Interest</td>
<td>558</td>
</tr>
<tr>
<td>Prejudgment Interest and Lost Profits Calculations Under Federal and State Law</td>
<td>559</td>
</tr>
<tr>
<td>The Primary Components of a Prejudgment Interest Calculation</td>
<td>560</td>
</tr>
<tr>
<td>Prejudgment Interest Rates Used by Practitioners</td>
<td>564</td>
</tr>
<tr>
<td>Other Prejudgment Interest Considerations</td>
<td>568</td>
</tr>
<tr>
<td>The Role of the Expert in Calculation of Prejudgment Interest</td>
<td>570</td>
</tr>
<tr>
<td>Appendix: Summary of State Prejudgment Interest Parameters</td>
<td>571</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 21 THE EXPERT REPORT</th>
<th>591</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>591</td>
</tr>
<tr>
<td>Expert Report Legal Requirements</td>
<td>592</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter 22 Expert Reports and Business Valuation Standards</th>
<th>623</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>623</td>
</tr>
<tr>
<td>Objectives of the Chapter</td>
<td>624</td>
</tr>
<tr>
<td>Business Valuation Standards and Admissible, Credible Evidence</td>
<td>625</td>
</tr>
<tr>
<td>Business Valuation Standards: Brief History and Overview</td>
<td>626</td>
</tr>
<tr>
<td>Business Values Under Different Standards</td>
<td>630</td>
</tr>
<tr>
<td>Ethical Requirements</td>
<td>631</td>
</tr>
<tr>
<td>Scope of Assignment and Related Expert Opinion</td>
<td>632</td>
</tr>
<tr>
<td>The Development Standards</td>
<td>635</td>
</tr>
<tr>
<td>The Reporting Standards</td>
<td>635</td>
</tr>
<tr>
<td>Litigation Exemption</td>
<td>637</td>
</tr>
<tr>
<td>Assumptions and Limiting Conditions</td>
<td>638</td>
</tr>
<tr>
<td>Extraordinary Assumptions</td>
<td>640</td>
</tr>
<tr>
<td>Hypothetical Conditions</td>
<td>642</td>
</tr>
<tr>
<td>Limitation of Available Relevant Information or Data</td>
<td>643</td>
</tr>
<tr>
<td>The Nature of Litigation and Attorney Strategies</td>
<td>643</td>
</tr>
<tr>
<td>May Challenge the Business Valuation Expert</td>
<td>643</td>
</tr>
<tr>
<td>Assuming the Client’s Projection of Cash Flows</td>
<td>645</td>
</tr>
<tr>
<td>Rule of Thumb</td>
<td>645</td>
</tr>
<tr>
<td>Rebutting a Business Valuation Report and the Business</td>
<td>646</td>
</tr>
<tr>
<td>Valuation Standards</td>
<td>646</td>
</tr>
<tr>
<td>Retrospective Appraisals</td>
<td>648</td>
</tr>
<tr>
<td>Conclusion</td>
<td>649</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 23 Legal Challenges to Lost Profits Damages Expert Testimony</th>
<th>651</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>651</td>
</tr>
<tr>
<td>Central Elements of the Case Law</td>
<td>652</td>
</tr>
<tr>
<td>Daubert and the Federal Rules of Evidence</td>
<td>654</td>
</tr>
<tr>
<td>Daubert and Non-scientific Expert Testimony: Kumho Tire</td>
<td>658</td>
</tr>
<tr>
<td>The Relationship Between Daubert’s Test for Scientific Expert</td>
<td>661</td>
</tr>
<tr>
<td>Testimony and Kumho Tire’s Test for Non-scientific Expert Testimony</td>
<td>661</td>
</tr>
<tr>
<td>Regression-based Expert Testimony as Scientific Evidence in Lost Profits Damages Testimony</td>
<td>661</td>
</tr>
</tbody>
</table>
The Econometrics of Statistical Proof of Damages 668
Non-scientific Expert Testimony 672
Conclusion 679

APPENDIX A: LEGAL CHALLENGES TO LOST PROFITS DAMAGES EXPERT TESTIMONY
— A COURT’S ANALYSIS 680

APPENDIX B: LEGAL CHALLENGES TO LOST PROFITS DAMAGES EXPERT TESTIMONY
— AN ATTORNEY’S BRIEF 683

BIBLIOGRAPHY 687
Articles 687
Books 690
Other 694

INDEX 699
ABOUT THE EDITORS

**Everett P. Harry, III, MBA, CPA, CFF**, is the senior partner of Harry•Torchiana LLP and has focused for over 40 years on accounting, financial, and disputes consulting involving government contracts, commercial litigation, and individual losses. Mr. Harry has extensive experience representing both plaintiffs and defendants for claims of lost profits, lost business value, and breach-of-contract damages. During his career, he also has served litigating clients on a wide variety of other matters, such as environmental remediation damages, alter ego, construction claims, fraud damages, partnership disputes, and individual losses from personal injury, wrongful death, or wrongful employment termination. Mr. Harry has presented expert testimony in the U.S. Court of Federal Claims, U.S. district courts, superior courts, arbitrations, and depositions.

Mr. Harry has been active in serving the CPA profession through both the California Society of CPAs (CalCPA) and the American Institute of Certified Public Accountants (AICPA) in a variety of positions and activities. He is a past president of the San Francisco chapter and past chair of the State Litigation Consulting Services Committee of the California Society of CPAs. He also served on the AICPA Litigation and Dispute Resolution Services Subcommittee and was a member of the AICPA Council. For both the CalCPA and AICPA, Mr. Harry has been a frequent speaker at conferences on economic damages held throughout California and the United States.

Mr. Harry’s writings on damages and other litigation services topics have appeared in the *Journal of Accountancy, Outlook, Today’s CPA, Daily Journal, CPA Litigation Services Counselor, CPA Expert, The Witness Chair, International Commercial Litigation, Business Valuation Review, Litigation Services Handbook, Recovery of Damages for Lost Profits*, and *Dunn on Damages—The Economic Damages Report for Litigators and Experts*. In addition, Mr. Harry was the coauthor of two AICPA practice aids for litigation services that addressed client communications, including expert written reports and fraud investigations.

Mr. Harry earned an AB in economics from San Diego State in 1971; was an Air Force officer and pilot from 1971 through 1975; and earned an MBA from the University of Southern California in 1976. Mr. Harry joined Arthur Andersen & Co. in 1976 and left in 1985 to form Harry, Evans & Degnan. In 1991, AA&Co. acquired HE&D, and Mr. Harry became a partner of AA&Co. until 1997. Thereafter, Mr. Harry first practiced as a sole proprietor and then formed Harry•Torchiana LLP.

**Jeffrey H. Kinrich, MBA, MS, CPA, ABV, CFF**, is a managing principal in the Los Angeles office of Analysis Group, an economic and financial consulting firm. He is widely recognized for his expertise in applying financial and economic analysis, accounting, business valuation, statistics, and mathematical modeling in a broad range of litigation areas. He specializes in damages qualification and valuation in the areas of commercial litigation and intellectual property and writes and speaks on these topics frequently. He also has significant experience in many other areas of the law, including breach of contract, construction, fraud, antitrust, business interruption, marital dissolution, and tax litigation.

Over his 35-year career in litigation and valuation services, Mr. Kinrich has testified several hundred times on accounting, damages, valuation, and statistical issues in both state and federal courts. His work in these fields includes the preparation of hundreds of damages calculations for a wide variety of breach of contract, patent, copyright, trademark, trade secret, and other cases. A sampling of his work includes testifying about economic damages and unjust enrichment in
fields as diverse as entertainment, manufacturing, wholesaling, and mortgage banking; developing a pricing methodology and valuation to calculate losses related to overcharges, misrepresentation, and breach of contract in the aerospace industry; serving as a damages expert in a service interruption case in the telecommunications industry; calculating lost profits resulting from breach of contract in the airline industry; and developing a rebuttal analysis calculating damages resulting from breach of contract in a real estate deal.


Before joining Analysis Group in 2001, Mr. Kinrich was a partner in the Financial Advisory Services practice at PricewaterhouseCoopers (and its predecessor firm Price Waterhouse), where he worked for over 20 years. Prior to that, he was a statistician at the BDM Corporation.

Mr. Kinrich holds a BA in mathematics (summa cum laude) from Pomona College, an MS in statistics from Stanford University, and an MBA in finance and quantitative methods from the University of Maryland. Mr. Kinrich is a certified public accountant (CPA) in California and Illinois and holds an Accreditation in Business Valuation (ABV). He is a long-time member of the California Society of CPAs’ Forensic Services Sections Steering Committee and a former member of the AICPA’s Forensic & Litigation Services committee. He received the AICPA’s Forensic & Litigation Services Volunteer of the Year award for his work on developing the Statement on Standards for Valuation Services (SSVS #1) as well as the engagement letter and intellectual property practice aids.
James R. Hitchner, CPA, ABV, CFF, ASA, is the managing director of Financial Valuation Advisors, Inc., in Ventnor City, NJ. He is also president of the Financial Consulting Group, LLC, a national association of professional services firms dedicated to excellence in valuation, financial, and litigation/forensic consulting. He is CEO of Valuation Products and Services, LLC, a company that develops educational resources for valuation analysts and fraud/forensics practitioners. He holds the AICPA’s specialty designations of Accredited in Business Valuation (ABV) and Certified in Financial Forensics (CFF) and is an Accredited Senior Appraiser (ASA) with the American Society of Appraisers. Mr. Hitchner has over 38 years of experience in valuation services. He has often testified as a qualified expert witness on valuations in federal and state courts.


Mr. Hitchner is an inductee in the American Institute of Certified Public Accountants (AICPA) Business Valuation Hall of Fame and was twice a recipient of the AICPA’s Business Valuation Volunteer of the Year award. He was also one of the only four members of the original AICPA Business Valuation Standards Writing Task Force and served the entire six years up to the June 2007 official release of the standards. Mr. Hitchner is past chairman of the Business Valuation Committee of the Georgia Society of CPAs, past member of the AICPA Business Valuation Subcommittee, past member of the AICPA ABV Exam Committee, and past chairman of the ABV Exam Review Course Committee. He has a BS in engineering from the University of Pittsburgh and an MBA from Rider University.
Chapter 1 “Introduction to Lost Profits”

**Michael J. Chapman, PhD, JD,** is a senior managing director at Ankura Consulting Group based in Washington, D.C. Dr. Chapman has more than 20 years of experience providing economic, financial, and strategic consulting services to commercial firms, law firms, and foreign governments. He has served as an economic expert and conducted economic analyses in a wide range of industries, including pharmaceuticals, medical equipment, semiconductors, financial services, insurance, manufacturing, steel, agricultural products and consumer goods. His focus is on matters involving commercial damages, intellectual property, mass tort damages, licensing, and antitrust.

Dr. Chapman has taught courses in competitive strategy and/or microeconomics at a number of leading business schools, including Massachusetts Institute of Technology’s Sloan School of Management, the University of Michigan Stephen M. Ross Business School, Georgetown University’s Robert Emmett McDonough School of Business, and University of Maryland’s Robert H. Smith School of Business. A frequent author, Dr. Chapman’s articles and papers have been published in the *Stanford Technology Law Review*, the *Federal Circuit Bar Journal*, *IDEA: The Intellectual Property Law Review*, *The Antitrust Review of the Americas 2016*, and the *Michigan Journal of International Law*.

Prior to joining Ankura, Dr. Chapman was an economic consultant with Analysis Group for 15 years. Prior to that, he was a strategy specialist with McKinsey & Co. for two years and an international trade attorney with Shearman & Sterling for five years.

He holds a PhD in economics from the Massachusetts Institute of Technology; a JD from the University of Michigan Law School; and a BA with honors in economics, political science, international relations, and comparative literature from the University of Wisconsin-Madison.

**John C. Jarosz, MA, JD,** is a managing principal with Analysis Group, director of the firm’s Washington, D.C. office, and an economist who specializes in applied microeconomics and industrial organization. He has worked across a wide range of industries and delivered expert testimony in hundreds of depositions, trials, and hearings. His focus is on matters involving intellectual property, licensing, commercial damages, and antitrust.

A frequent author and lecturer, Mr. Jarosz was the editor of *Eckstrom’s Licensing in Foreign and Domestic Operations: The Forms and Substance of Licensing*, and his articles and papers have been published in the *Stanford Technology Law Review*, the *Federal Circuit Bar Journal*, *Les Nouvelles: Journal of the Licensing Executives Society*, the *Journal of Business Valuation and Economic Loss Analysis*, and the *Journal of the Patent and Trademark Office Society*. He has lectured at the Georgetown University Law Center, George Washington University Law School, Columbia Business School, and the U.S. Patent and Trademark Office.

Mr. Jarosz has been with Analysis Group for the past 20 years. For the 10 years prior to that, he was with the economic consulting firm Putnam, Hayes, and Bartlett.

He has an MA degree and is a PhD candidate in economics from Washington University in St. Louis, a JD from the University of Wisconsin, and a BA (summa cum laude) in economics and organizational communication from Creighton University.
**About the Authors**

Robert L. Vigil, PhD, CLP, is a principal at Analysis Group. Dr. Vigil specializes in the application of economics and finance to complex commercial litigation matters. His work includes the estimation of damages and unjust enrichment in intellectual property and breach-of-contract cases; the evaluation of patented drug products’ commercial success in connection with generic manufacturers’ Abbreviated New Drug Application submissions to obtain early market entry; and the analysis of issues related to the granting of permanent injunctions, such as irreparable harm and causal nexus. Dr. Vigil has served as an expert witness on litigation matters in a variety of industries, including pharmaceuticals, medical devices, consumer products, telecommunications, computer hardware and software, and electronics. In non-litigation matters, he has assisted clients in valuing intellectual property for sale or license; identifying and evaluating potential partners for licensing, acquisition, or divestiture of assets; and analyzing the impact of generic entry on prices and market shares of brand-name pharmaceutical products.

Chapter 2 “Legal Principles for Lost Profits Damages and Related Expert Testimony”

Rachel S. Faulkner, JD, is an attorney specializing in copyright law. Ms. Faulkner is currently serving as a clerk for the Honorable Judge Wallace Tashima on the Court of Appeals for the Ninth Circuit. Previously, Ms. Faulkner worked as a litigator at Irell & Manella and as a lecturer at UCLA School of Law.

Ms. Faulkner received her BA (summa cum laude) from Harvard University and her JD from Stanford Law School, where she was an articles editor on the Stanford Law Review.

Judge Laura Seigle, JD, is a judge on the Superior Court for the County of Los Angeles. Before being appointed to the bench, she was a partner in the Los Angeles office of Irell & Manella, where she specialized in intellectual property, entertainment, and complex business litigation. Among other recognitions, she has been named one of the National Law Journal’s 75 outstanding women lawyers, one of Law360’s 20 most influential women in IP law, one of the top 75 intellectual property litigators and one of the top 100 women lawyers in California by the Daily Journal, one of the “50 Women Leaders in Tech Law” by The Recorder, and the Intellectual Property Litigator of the Year by the Century City Bar Association.

Ms. Seigle graduated from Harvard University (magna cum laude and Phi Beta Kappa) and from Yale Law School. She clerked for Judge Diarmuid O’Scannlain in the United States Court of Appeals for the Ninth Circuit.

Chapter 3 “Alternative Methodologies for Lost Profits Damages”

Brian P. Brinig, JD, CPA, ABV, ASA, is a certified public accountant (CPA) who has specialized in forensic accounting and business valuation for over 35 years in Southern California. He is the founding principal of the 20-person forensic accounting and business valuation firm Brinig Taylor Zimmer founded in 1983.

Mr. Brinig holds accreditations in business valuation from the American Institute of Certified Public Accountants (AICPA) and the American Society of Appraisers (ASA) and has
qualified as an expert witness on financial issues in federal and state courts over 300 times. He has been the state chairman of the California Society of CPAs’ (CalCPA) Business Valuation Committee and has served on the board of directors of the San Diego Society of CPAs.

Mr. Brinig is the author of the law textbook Finance & Accounting for Lawyers (Portland, OR: BV Resources, 2011), and he is adjunct professor of law at the University of San Diego School of Law. He is the past president of the Financial Analysts Society of San Diego and has coauthored three other professional books and many articles on the subjects of forensic accounting and business valuation.

He holds a degree in business from Georgetown University and a law degree from the University of San Diego.

Chapter 4 “Ex Ante versus Ex Post”

Peter Schulman, CPA, CIRA, CDBV, has over 45 years of diversified accounting and consulting experience. He began his career in the Chicago office of Arthur Andersen. His primary emphasis is as a commercial damages and bankruptcy expert, with a subspecialty in computer forensics. Mr. Schulman has over 35 years of experience as a testifying expert on behalf of defendants, plaintiffs, trustees, creditors, debtors, and the court. He has been a frequent speaker on topics regarding lost profits damages and computer applications in litigation, including databases and graphic presentations of complex financial concepts.

Mr. Schulman has also been published in legal and accounting publications on a wide range of topics. One article was cited as an authority in a leading federal court case, Energy Capital Corp. v. The United States, 47 Fed. Cl. 382 (2000) and in Recovery of Damages for Lost Profits, Robert L. Dunn (6th ed.), as follows: “Some of the issues presented in discounting future damages have begun to receive treatment in scholarly articles. ... The question whether damages should be discounted to the date of trial or the date of breach is analyzed in Peter Schulman, Economic Damages: Discounting Concepts and Alternatives, 28 Colo. Law. 41 (Jan. 1999).”

Chapter 5 “Business Valuation Methodology”

Claudia J. Stern, MBA, CPA, CFF, ABV, is a principal in the Forensic and Financial Consulting Services Group at Hemming Morse. She has worked on numerous business valuations, forensic accounting engagements, and economic damages matters involving a wide range of industries. Her valuation experience includes dissenting shareholder and partner actions, mergers and acquisitions, family law, and estate and gift matters. Her forensic accounting engagements have included breach of fiduciary duty claims, fraud, bankruptcy, alter ego, and malpractice actions. She teaches for the California Society of CPAs (CalCPA) and Golden Gate University.

Ms. Stern has a bachelor’s degree in physics from Whitman College and a master’s degree in business administration from Harvard University.

James A. Andersen, MBA, CPA, CFF, ABV, ASA, is a partner at Hemming Morse, a CPA firm providing forensic and financial consulting services. His career spans more than 40 years, during which he built one of the largest full-service accounting firms in Northern California. Over the past three decades, he has focused his extensive tax background on issues of business valuation, financial consulting, and forensic consulting. A nationally recognized leader in
business valuation, he routinely partners with members of the legal community to tackle matters involving complex partnerships, corporate and dissenting shareholder actions, economic damages, and other forensic accounting assignments. He is an instructor for the American Institute of Certified Public Accountants (AICPA) and the California Society of CPAs (CalCPA) and has chaired numerous conferences and committees for both organizations.

Mr. Andersen has an accounting degree from California State University in Chico and a master’s degree in taxation from Golden Gate University.

Chapter 6 “Contrasting the Lost Business Value and Lost Profits Methodologies”

J. Donald Fancher, MBA, is a principal with Deloitte Financial Advisory Services LLP, where he serves as the global leader of Deloitte Forensic. Mr. Fancher has over 29 years of experience assisting clients and leading practices in forensic and dispute consulting. He has significant experience working domestically and internationally on client service matters regarding forensic investigations, dispute consulting, intellectual property services, and reorganization services across a number of industries. Mr. Fancher has testified in numerous commercial litigation and class-action matters on issues regarding lost profits, damages, and valuation determinations throughout a number of jurisdictions in federal, state, and bankruptcy courts.

Mr. Fancher earned his BBA in finance from Texas A&M University and his MBA from Baylor University.

Everett P. Harry, III, MBA, CPA, CFF
See book editor’s bio.

Joshua Johnston, CPA, CFF, ABV, CIRA, is senior managing director with Ankura Consulting Group, providing forensic accounting services that include investigations of fraud and embezzlement, as well as expert witness services in litigation. He has testified on damages valuation, lost profits, asset tracing, accounting principles, and other accounting and forensic topics. He has served as a neutral accounting arbitrator and consultant in purchase price and earn-out disputes. He combines his forensic and bankruptcy experience to assist debtors and creditors with emergence accounting and claims. Prior to joining the forensic practice, Mr. Johnston was a financial statement auditor and served audit clients as a fraud specialist. He has experience serving clients in a variety of industries, including oil and gas, banking, and technology.

Mr. Johnston graduated summa cum laude in accounting from Texas State University. He is a licensed certified public accountant (CPA) in the state of Texas, Certified in Financial Forensics (CFF) and Accredited in Business Valuation (ABV) by the American Institute of Certified Public Accountants (AICPA), and is a Certified Insolvency & Restructuring Advisor (CIRA).

Chapter 7 “Proving Loss Causation”

Steven B. Boyles, CPA, CFF, ABV, ASA, is a partner in the Forensic and Financial Consulting Services Group of Hemming Morse. He has been consulting with clients and counsel regarding business valuation and complex damage analyses for more than 18 years. His experience encompasses a diverse range of matters, including investigating and quantifying damages in
matters involving patent infringement, trade secret misappropriation, shareholder and partnership disputes, post-acquisition claims, alter ego analyses, royalty disputes, as well as other forensic and fraud investigations stemming from contract and tort claims. He has testified as an expert witness in federal and state courts as well as in arbitration in connection with the work performed in these areas.

**Everett P. Harry, III, MBA, CPA, CFF**
See book editor’s bio.

**Peter Rybolt, MBA,** is a vice president with Analysis Group. He specializes in loss modeling and damages assessment in intellectual property and general commercial litigation, with an emphasis on media and entertainment. His experience includes cases involving the major studios, global distributors, game publishers, television networks, and internationally known creative artists, as well as numerous other rights-holders in trademark and copyright litigation. He holds an MBA in finance and strategic management from the University of Southern California’s Marshall School of Business.

**Chapter 8 “Industry and Economic Research”**

**Victoria A. Lazear, MS,** is a senior advisor at Cornerstone Research and has more than 30 years of experience applying economic theory to issues in litigation and regulation. She provides expert testimony and directs research for expert testimony in a range of practice areas, including labor, antitrust, securities, and financial institutions. She has assessed economic losses and loss causation for cases in the telecommunications, high-technology, energy, pharmaceutical, chemical, and financial industries.

Prior to joining Cornerstone Research, Ms. Lazear was a founder and president of Applied Economics Partners (AEP), a litigation consulting firm. AEP provided economic analysis and litigation consulting services across a range of practice areas. Before founding AEP, Ms. Lazear was a vice president of Cornerstone Research, where she helped develop the firm’s intellectual property practice. She has lectured on the economic analysis of damages and has taught the economics of regulation and public utilities at the Graduate School of Business at the University of Chicago. In addition, Ms. Lazear coauthored with Mark Allen and Robert E. Hall “Reference Guide on Estimation of Losses in Damages Awards” in the *Reference Manual on Scientific Evidence*.

**Chapter 9 “Statistics in Lost Profits Measurements”**

**Michael A. Crain, DBA, CPA, ABV, CFA, CFE,** of Fort Lauderdale, FL, is on faculty at Florida Atlantic University and is director of FAU’s Center for Forensic Accounting. He consults with clients and works with Miami-based Kaufman Rossin, a top 100 accounting firm, as a senior advisor. He has served as a consulting and testifying expert in many commercial cases, working for both plaintiffs and defendants in state and federal courts.

Dr. Crain has been a licensed CPA for over 30 years and has been a full-time practitioner most of that time. He holds several certifications in valuation: Accredited in Business Valuation (ABV) from the American Institute of Certified Public Accountants (AICPA) and the designation of Chartered Financial Analyst (CFA) from the CFA Institute. He is also a Certified Fraud Examiner (CFE), a past chairman of the AICPA business valuation committee, and has been
inducted into the AICPA Business Valuation Hall of Fame. He is a recipient of AICPA’s Lawler Award presented by *Journal of Accountancy* for best article of the year.

Dr. Crain earned his doctor of business administration (finance) degree from the Manchester Business School in England at the University of Manchester.

**G. William Kennedy, PhD, CPA, ABV,** is a managing director in the Boston office of Duff & Phelps. He has over 30 years of professional experience, including serving as a partner with a regional CPA firm and holding managing director positions with global litigation consulting firms. For the past 20 years his practice has focused on business valuation and litigation support services where he has testified in numerous state and federal courts and before international arbitration tribunals. Additionally, he has held various academic positions, including the rank of associate professor of finance (with tenure).

Dr. Kennedy is a 2003 inductee into the American Institute of Certified Public Accountants (AICPA) Business Valuation Hall of Fame. He is the former chair of both the AICPA ABV Credentials Committee and the AICPA ABV Examination Committee and was also a member of the AICPA M&A Disputes Resolution Taskforce. He is currently a member of the American Society of Appraisers’ (ASA) *Business Valuation Review* Editorial Review Board.

Dr. Kennedy has a PhD in finance from Saint Louis University and a BS and MAS in accounting from the University of Illinois. He holds the ABV designation from the AICPA, earned during the inaugural year of the ABV program. He currently serves as adjunct professor for the graduate accounting program at Florida Atlantic University, where he teaches a course on fair value measurement.

---

**Chapter 10 “Analysis of Projected Lost Revenue”**

**Jennifer Larson, CPA, CFE,** is a partner in Deloitte’s Forensic practice. Ms. Larson is a certified public accountant (CPA) and Certified Fraud Examiner (CFE) and has spent the last 14 years providing litigation support, including expert witness testimony, arbitrator services, and calculating damages for clients and their legal counsel. She has been engaged as an accounting and damages expert and has served as an independent accountant/neutral arbitrator in various post-closing M&A disputes. Ms. Larson is part of Deloitte’s National IP Litigation Team. She focuses on the life sciences industry.

Ms. Larson also teams with chief risk and compliance officers to provide investigation support, forensic accounting, and fraud risk management services, primarily related to asset misappropriations.

Ms. Larson co-leads the Chicago office’s Volunteer Council, overseeing Deloitte’s involvement in nonprofit boards, pro-bono services, the United Way Campaign, and Impact Day. She also serves on the Board of the American Cancer Society and the leadership board of the National Immigration Justice Center.

**S. Benjamin Solomon, MS, CPA,** is a manager with Deloitte Financial Advisory Service’s Forensic and Investigations practice, with over eight years of experience. He specializes in providing litigation support to his clients, including complex economic damages calculations, lost profits analyses, accounting malpractice litigation, and business insurance claims. He also has extensive experience in purchase price disputes, corporate investigations, and FCPA due diligence and investigations. His experience has exposed him to a variety of industries in the public and private sectors, including financial services, consumer and industrial products, energy, healthcare, and real estate.
Mr. Solomon received a BBA in accountancy from the University of Notre Dame and a master of science in accountancy from the University of Notre Dame. He is a certified public accountant (CPA) in Illinois.

Claudia A. Wolf, CPA, CFF, CFE, was a partner in the Chicago office of Deloitte Financial Advisory Services (Deloitte FAS). She retired from Deloitte FAS in September 2015. At the time of her retirement she served as the national director of the firm’s Business Insurance Consulting practice. She has 32 years of experience in insurance claims accounting. She has spent her career performing analysis of financial and operating data necessary for the determination and verification of losses sustained due to property and casualty losses and other disruptions to businesses in a considerable range of industries. Types of engagements include business interruption, contingent business interruption, extra expenses, inventory, physical damage, reconstruction projects, product recall, and third-party liability disputes.

Ms. Wolf has assisted clients with the development of their damages related to many catastrophic situations, including 9/11, hurricanes Katrina and Rita, the earthquake/tsunami in Japan, the flooding in Thailand, and Superstorm Sandy on the East Coast. She has also gained experience in litigation through expert witness testimony on subrogation, motive for arson, and other insurance-related issues testifying in state and federal courts throughout the country and in international arbitration.

Chapter 11 “Analysis of Cost Behavior”

Elizabeth A. Eccher, MS, PhD, is a principal at Analysis Group. Previously, she taught financial and managerial accounting at the Sloan School of Management at Massachusetts Institute of Technology and worked in the heavy equipment industry as a pricing and cost analyst. Dr. Eccher received her doctorate in accounting from Northwestern University and holds an MS in industrial administration from Purdue University and a BA in economics from Dominican University. Her consulting and/or testifying experience includes interpretation of financial accounting standards, damages estimation for lost sales, cost analyses, and financial analyses for transfer pricing.

Jeffrey H. Kinrich, MBA, MS, CPA, ABV, CFF
See book editor’s bio.

James H. Rosberg, MBA, PhD, is a vice president at Analysis Group and has consulted on valuation in a wide range of industries, including securities and financial services, software and social media, professional sports, medical devices, and electronics manufacturing. Dr. Rosberg has also supported experts in the areas of securities fraud, investment management, the analysis of companies’ cost structures, class certification, and corporate governance and has published in the field of pharmacoeconomics. Prior to working at Analysis Group, he was a consultant at The Parthenon Group in Boston and Vanguard Brand Management in London and an assistant professor at Dartmouth College and Boston College, where he taught and conducted research on the rule of law and development with a focus on the Middle East and North Africa.

Dr. Rosberg holds an MBA and PhD from Massachusetts Institute of Technology and a BA with highest honors from University of California, San Diego.
Chapter 12 “Mitigation of Damages in the Lost Profits Calculation”

Scott M. Bouchner, MBA, CMA, CVA, CFE, CIRA, is a director of Forensic and Business Valuation Services at Berkowitz Pollack Brant Advisors and Accountants, a top 100 nationally ranked accounting firm. He has more than 25 years of experience in business valuation, litigation support, and management consulting. A frequent expert witness in state and federal courts, he has extensive experience advising clients involved in complex commercial disputes, preparing economic damages claims, analyzing opposing expert claims, and performing forensic investigations. Mr. Bouchner also performs due diligence for mergers and acquisitions, and provides strategic business consulting services. A long-time member of the AICPA’s Economic Damages Task Force, he is a frequent lecturer and was a coauthor of the AICPA Practice Aids Calculating Lost Profits, Discount Rates, Risk, and Uncertainty in Economic Damages Calculations and Attaining Reasonable Certainty in Economic Damages Calculations.

Mr. Bouchner holds an MBA from Columbia Business School and a bachelor’s degree from George Washington University. He is a Certified Management Accountant (CMA), a Certified Fraud Examiner (CFE), a Certified Valuation Advisor (CVA), and a Certified Insolvency and Restructuring Advisor (CIRA).

Richard A. Pollack, CPA, ABV, CFF, PFS, ASA, CBA, CFE, CAMS, CIRA, CVA, CGMA, is the director in charge of Forensic and Business Valuation Services at Berkowitz Pollack Brant Advisors and Accountants, a top 100 nationally ranked accounting firm. Throughout his 40-year career, he has testified as an expert more than 100 times in state and federal courts and arbitrations, representing clients, court-appointed receivers, and federal agencies. In addition, he is active in analyzing damages and providing litigation support services.

Mr. Pollack holds a master’s degree in finance from Florida International University and a BBA from the University of Miami, where he is actively involved with alumni groups, scholarships, and serves as an advisory board member. He holds more than 10 professional credentials and certifications, including a Florida certified public accountant (CPA) license, an Accredited in Business Valuation (ABV), Certified Fraud Examiner (CFE), and others. A highly regarded public speaker, he has taught judges, lawyers, accountants, college students, regulators, and business people throughout his career.

Chapter 13 “Using Net Cash Flow versus Accrual Net Income”

Bruce A. Strombom, PhD, is a managing principal at Analysis Group. He is an expert in applied microeconomics, industrial organization, and finance. He specializes in the application of quantitative and statistical techniques to complex business litigation, the estimation of commercial damages, and the valuation of privately held companies. Dr. Strombom has conducted assessments of class certification, liability, and damages issues in cases involving antitrust, breach of contract, false advertising, intellectual property, labor and employment, product liability, securities, and general commercial disputes. He frequently values privately held companies and ownership interests in firms in a range of industries for both litigation and mergers and acquisitions.

Prior to joining Analysis Group, Dr. Strombom was executive vice president of a mid-
dle-market merger and acquisition firm and manager in the consulting practice of Price Waterhouse. He holds a PhD in economics from UC Irvine and a BA in economics from San Jose State University.

Sheryl Clark, MA, is an associate at Analysis Group. She has over a decade of litigation support experience involving accounting, financial, statistical, and economic analysis. Ms. Clark has consulted in areas such as accounting, intellectual property, entertainment and media, statistical sampling, healthcare, business valuation, class certification, ERISA, and general commercial litigation. She has extensive experience with financial modeling and assembling, managing, and analyzing large complex proprietary and public databases. Ms. Clark holds an MA in economics, a BA in quantitative economics, and a minor in studio art from Tufts University, as well as a general business studies with accounting concentration certificate from University of California, Los Angeles.

Chapter 14 “Period of Damages”

Patrick M. DeLangis, CPA, CFF, MAFF, CFE, CVA, EnCE, is a managing director in the Forensic, Litigation and Valuation Services Group of EisnerAmper, with over 20 years of diversified litigation, consulting, and forensic accounting experience. He has testified in federal and state courts, as well as other tribunals, in California, Oregon, and Washington. Mr. DeLangis has prepared damages analyses in matters that involve white collar crime, internal and external fraud investigations, internal controls, commercial disputes, intellectual property, employment disputes, personal injury, wrongful death, product liability, construction disputes, and shareholder disputes. He has also been certified in computer forensic investigations.

Mr. DeLangis was formerly with Ueltzen & Company, LLP, Matson, Driscoll & Damico, LLP, Berntson Porter & Company, PLLC, and Navigant Consulting. He obtained his BS in accounting from Loyola Marymount University in Los Angeles.

Jolene N. Fraser, CPA, CFF, CFE, is a managing director in the Forensic, Litigation and Valuation Services Group of EisnerAmper. With over 20 years of experience, Ms. Fraser specializes in providing consulting services and expert testimony in matters involving accounting professional standards, commercial damages, special investigations, and fraud investigations. She works with counsel and their clients on complex accounting, auditing, and financial issues throughout the litigation process. Ms. Fraser’s background at both a major international accounting firm and a large national accounting firm includes managing audits of clients across multiple industries such as government, commercial and residential real estate, manufacturing and distribution, nonprofit organizations, high technology, publishing, and employee benefit plans. Ms. Fraser serves on the board of the California Society of CPAs (CalCPA). She is also a board member and past chair of the Sacramento Chapter of CalCPA and member of CalCPA’s Forensic Services Section Steering Committee. She is a member of the AICPA Relations with the Bar Committee and has served on the AICPA CFF Credential Committee.

Ms. Fraser graduated from California State University, Sacramento, with a BS in business administration, accountancy. She has given presentations on a variety of topics, including accounting, auditing, and forensic investigation procedures and reporting.
Chapter 15 “The Ability to Achieve Lost Sales as a Consideration in Damages Analyses”

Rebecca A. Kirk Fair, MBA, is a managing principal at Analysis Group, providing economic analysis and consulting services to clients in a broad range of cases, including antitrust litigation, intellectual property, false advertising, and class certification. She has served as an expert witness in matters involving corporate valuation, patent infringement analyzing both lost profits and reasonable royalty damages, breach-of-contract damages, and trademarks. She has assisted in all phases of litigation in a number of large-scale antitrust cases, including *Intel v. AMD; DOJ v. Visa and MasterCard; Discover v. MasterCard; American Express v. Visa, MasterCard, and Issuing Banks;* and *Kirk Dahl, et al. v. Bain Capital Partners, LLC, et al.*

Ms. Kirk Fair also has extensive experience analyzing questions of market definition, market power, and pricing in competition matters including mergers and monopoly antitrust investigations. In addition, she has extensive experience in the development, administration, and analysis of surveys in antitrust, false advertising, and intellectual property matters, as well as strategy cases.

Ms. Kirk Fair is a member of the American Bar Association’s sections of Antitrust Law and Intellectual Property Law. Ms. Kirk Fair holds an MBA from the MIT Sloan School of Management and a BA from Middlebury College.

Aaron C. Yeater, MBA, is a managing principal at Analysis Group. His areas of expertise include the evaluation of damages in antitrust, intellectual property, and complex commercial matters in a variety of industries including media, high technology, retail and institutional financial services, and telecommunications. He has supported expert witnesses in their preparation of damages analyses for numerous high-profile cases in the technology sector, including several antitrust matters involving Microsoft. Mr. Yeater has supported counsel for defendants in trials responding to multibillion-dollar antitrust damages claims in the multidistrict price-fixing matter *In re: TFT-LCD (Flat Panel) Antitrust Litigation.* He has also supported counsel in several matters concerning distribution of video media, including a merger of national cable companies, disputes about content licensing terms, and litigation by several broadcast networks concerning alleged copyright concerns arising from Dish Network’s Hopper DVR and AutoHop service.

Mr. Yeater has also consulted on litigations involving financial services firms, including investment banks, institutional investors, and credit card networks, and has provided strategic support for clients in the music, pharmaceutical technology, and agribusiness industries.

Mr. Yeater holds an MBA from the Yale School of Management and a BA from the College of Social Studies at Wesleyan University.

Chapter 16 “Present Value Concepts and Damages Modeling”

Douglas E. Farrow, CPA, CFE, is a partner in KPMG’s Forensic Advisory Services practice and has over 25 years of experience assisting corporations, attorneys, and their clients with a wide spectrum of financial, economic, and accounting matters. He has extensive experience in developing damage theories and case strategy in complex litigation at all levels of dispute. In addition to providing litigation consulting, Mr. Farrow has been involved in numerous post-acquisition disputes in the capacity of a sole arbitrator as well as an advisor and has in-depth
experience with the preparation and negotiation of complex insurance claims such as business interruption and/or inventory claims.

**Thomas Heck, CPA**, is a managing director in KPMG’s Forensic practice, where he serves in the firm’s Dispute Advisory Services Group. Mr. Heck provides clients with a wide range of forensic investigative services, including litigation support, financial reporting and securities investigations, due diligence and fraud investigations, contract vetting, computation of damages, claims analyses, neutral services (i.e., arbitrations involving buyers and sellers in stock purchase and sale transactions), and other alternative dispute resolution.

**Elizabeth Moe, CPA**, is a director in the KPMG’s Forensic practice, where she assists clients with a broad spectrum of financial, business, accounting, and fraud-related issues. She has experience in the preparation of economic damages, purchase price disputes, and analysis related to copyright, trade secret, and patent infringement litigation. Ms. Moe has also been involved in assessing the appropriate application of complex accounting rules as well as forensic accounting analyses and fraud investigations.

**Chapter 17 “Discount Rates in Theory”**

**Jaime d’Almeida, MBA, ASA, CFE**, is a managing director with Duff & Phelps in the Disputes and Investigations practice. He is a frequent speaker and author, and his corporate finance expertise has been featured in numerous publications. Mr. d’Almeida has over 20 years of experience in economic and valuation analysis and consulting and has provided both deposition and trial testimony on valuation, finance, and damages issues.

Mr. d’Almeida is a lecturer in finance at Boston University’s Questrom School of Business and an adjunct lecturer at Babson College’s F.W. Olin Graduate School of Business, where he also received his MBA in entrepreneurship. He received his BS in electrical engineering/ engineering and public policy from Carnegie Mellon University. He is an Accredited Senior Appraiser (ASA) of the American Society of Appraisers (ASA) and a Certified Fraud Examiner (CFE).

**Roger J. Grabowski, FASA**, is a managing director with Duff & Phelps and an Accredited Senior Appraiser (ASA) and Fellow (FASA) of the American Society of Appraisers (its highest designation), Business Valuation. He was formerly managing director of the Standard & Poor’s Corporate Value Consulting practice, a partner of PricewaterhouseCoopers and one of its predecessor firms, Price Waterhouse (where he founded its U.S. Valuation Services practice). Mr. Grabowski has been recognized in various courts as an expert on matters of damages, solvency, the value of closely held businesses and business interests, valuation of intangible assets, and other valuation issues. His testimony in U.S. District Court was the subject of the U.S. Supreme Court opinion decided in his client’s favor in the landmark *Newark Morning Ledger* case. He is coauthor with Shannon Pratt of *Cost of Capital: Applications and Examples*, 5th ed. and *The Lawyer’s Guide to Cost of Capital*. He is coauthor of the Duff & Phelps annual resources for cost of capital data: *Valuation Handbook—U.S. Guide to Cost of Capital*, *Valuation Handbook—U.S. Industry Cost of Capital*, *Valuation Handbook—International Guide to Cost of Capital*, and *Valuation Handbook—International Industry Cost of Capital*. 


Chapter 18 “Discount Rates in Practice”

Everett P. Harry, III, MBA, CPA, CFF
See book editor’s bio.

Mark E. Hayden, CPA, ABV, ASA, CFA, has been the managing director and a member of Houlihan Lokey’s Financial Advisory Services business since June 2017, where he specializes in the delivery of corporate financial advisory, expert witness, and post-transaction dispute resolution. He regularly determines the value of businesses, common and preferred equity, and intangible assets. In addition, he is retained to value financial derivatives and corporate debt.

Prior to Houlihan Lokey, Mr. Hayden was a partner in the Valuation and Economic Modeling Group of Deloitte Advisory. During his tenure, he has performed several hundred valuations for U.S. GAAP financial reporting purposes; led integrated multidisciplinary valuation assignments that included fixed asset, real property, and intangible asset components; worked on domestic and global valuation assignments that included complex tax and financial statement reporting issues; and testified on the value of businesses, business interests, and intangible assets. Prior to Deloitte, he was a partner at Ernst & Young in Los Angeles.

Mr. Hayden co-chairs the America Institute of Certified Public Accountants (AICPA) Task Force on Valuing Portfolio Companies Held by Investment Funds. He is a frequent presenter and author on valuation topics. He is a Chartered Financial Analyst (CFA) charterholder from the CFA Institute and an Accredited Senior Appraiser (ASA) from the American Society of Appraisers. He holds an Accreditation in Business Valuation (ABV) from the AICPA. Mr. Hayden holds an MBA from the University of California, Davis and California State University, East Bay and a bachelor’s degree from Western Michigan University.

Wallace Ng, CFA, is a senior manager in the Advisory Services practice of Deloitte Transactions and Business Analytics in Los Angeles. He has over 15 years of financial consulting experience providing valuation and consulting services across diverse industries. Mr. Ng has performed valuations of business enterprises, business interests, and intangible assets for the purposes of financial reporting, mergers and acquisitions, restructuring, bankruptcy, tax reporting and planning, and litigation support for trials and arbitrations. Prior to Deloitte, Mr. Ng was a manager in the Financial Advisory Group of Kroll, providing valuation and consulting services to help clients mitigate business and financial risks and achieve their operational and financial objectives. Prior to his tenure at Kroll, Mr. Ng worked at Charles River Associates, an economic consulting firm, where he performed valuations and economic analyses for the purposes of mergers and acquisitions, restructuring, bankruptcy, and litigation support for state and federal courts.

Mr. Ng holds a BA in business economics (cum laude) from UCLA and is a Chartered Financial Analyst (CFA) charterholder.

Chapter 19 “Before-tax versus After-tax Discount Rates”

James E. Pampinella, CPA, is a managing director in the San Francisco office of Navigant Consulting and a national expert on complex commercial litigation matters, specializing in intellectual property strategic consulting and disputes. He is a certified public accountant (CPA)
in the state of California, Certified in Financial Forensics (CFF), and a Certified Licensing Professional (CLP). Mr. Pampinella has experience in a wide variety of industries including computer hardware and software, eCommerce, life sciences, and consumer and industrial products. Mr. Pampinella has testified as an expert on damages in deposition, trial (federal and state courts), and arbitrations and has presented at mediations. He also serves on the planning committees of the Advanced Patent Law Institute, the Intellectual Property Institute held by the Berkeley Center for Law & Technology/Stanford Law School, and the University of Southern California Gould School of Law.

Prior to rejoining Navigant Consulting, Mr. Pampinella led the Northern Pacific Intellectual Property Group for Deloitte Financial Advisory Services. Prior to joining Deloitte FAS, he worked for Navigant Consulting and Coopers & Lybrand (n/k/a PricewaterhouseCoopers) providing economic, financial, and damage consulting services on commercial litigation matters.

Renee C. Wong is a director in Navigant Consulting’s Disputes and Investigations practice in San Francisco. She focuses on complex litigation matters, with an emphasis on commercial damages, intellectual property infringement, breach of contract, and business valuation issues. She has analyzed, prepared, and critiqued a variety of economic damages claims, including lost profits, reasonable royalties, unjust enrichment, price erosion, and diminution of business value. Ms. Wong has more than 16 years of experience consulting to a variety of companies on financial, economic, accounting, and damages matters. She has experience in a wide variety of industries, including biotechnology, consumer electronics, medical devices and equipment, computer software and hardware, and consumer products. She has served as the expert witness on damages in matters involving patent infringement, breach of contract, and business interruption.

Ms. Wong was formerly with TM Financial Forensics and Tucker Alan, where she performed similar work. She holds dual BA degrees in economics and legal studies from the University of California, Berkeley.

Chapter 20 “Pre- and Post-judgment Interest”

Gregory A. Pinsonneault, MA, CLP, is a managing director and the chief executive officer at LitiNomics. He has more than 14 years of experience providing consulting services and expert testimony for economic, financial, and business issues related to commercial litigation, primarily in the calculation of economic damages. Mr. Pinsonneault has extensive experience in intellectual property disputes, including patent, trade secrets, copyright, and trademark disputes, as well as consulting on reasonable license terms for intellectual property outside the context of litigation. He has also consulted in a variety of other areas, including breach of contract, class-action issues, predatory pricing and buying, and antitrust monopolization.

Mr. Pinsonneault holds an MA in economics from the University of California, Berkeley, a BA in mathematics and economics (cum laude) from the University of Washington, and a BS in computer science (cum laude) from the University of Washington. He is a Certified Licensing Professional (CLP).

Christian Tregillis, CPA, ABV, CFF, CLP, is a partner with Hemming Morse. In this role he analyzes financial, accounting, economic, statistical, and market issues, primarily in regard to disputes and valuations, including the negotiation of license agreements covering intellectual property. He has participated in mediations and has testified in depositions, hearings, arbitrations, and at trial in state and federal courts.
Mr. Tregillis has worked on over 500 matters in his 25 years of financial consulting and investigations, including 11 years at major international and national accounting firms. He was previously the leader of the Damages, Valuation, and IP practice area globally for LECG. Prior to that he led the Forensic Accounting and Litigation Consulting Group in the Western U.S. for Kroll and was the leader of Kroll’s Intellectual Property Services practice. Before his work at Kroll, he was a partner in the Financial Advisory Services practice at Deloitte & Touche.

Mr. Tregillis is a past chair and current member of the Economic Damages Task Force of the American Institute of Certified Public Accountants (AICPA); he is also a past chair of the Economic Damages Section of the California Society of Certified Public Accountants (CalCPA).

Chapter 21 “The Expert Report”

R. Christopher Rosenthal, MBA, CPA, ABV, CFF, ASA, AEP, is a director in Ellin & Tucker’s Forensic and Valuation Services Group, with more than 30 years of experience. He is responsible for hundreds of domestic and international commercial damage and valuation engagements throughout the United States, Europe, South America, and the Middle East. He has extensive experience preparing expert reports and providing testimony in federal, state, and international courts. He has worked on cases ranging from simple contract disputes involving thousands of dollars to complex litigation, where the claims being sought involved nearly half a billion dollars. Mr. Rosenthal specializes in complex commercial damages, valuation, intellectual property, and forensic accounting assignments. His clients have included public and private companies of various sizes, not-for-profit organizations, governmental entities, and individuals.

Mr. Rosenthal has a BS in accounting from Virginia Tech and an MBA in finance from the University of Maryland. Prior to joining Ellin & Tucker, he was a financial analyst with a national poultry company and had four years of public accounting experience.

Chapter 22 “Expert Reports and Business Valuation Standards”

Everett P. Harry, III, MBA, CPA, CFF
See book editor’s bio.

William B. Stewart, Jr., CPA, ABV, CFF, CFE, is a member of Stewart & Hurst, a consulting firm providing forensic and valuation services to attorneys and their clients and a number of industries in non-litigation matters. Mr. Stewart has been a certified public accountant (CPA) for over 40 years, having been both a professional at a major public accounting firm and then chief financial officer for several large companies in the industry before beginning his current practice over 25 years ago. He is a frequent speaker at local, state, and national conferences, university guest lecturer, and coauthor of several publications. Mr. Stewart has testified in criminal, family law, bankruptcy, and civil matters in county, state, and federal courts in Texas, Utah, Tennessee, Florida, and Colorado.
Chapter 23 “Legal Challenges to Lost Profits Damages Expert Testimony”

Stephen Mahle, JD, PhD, is Associate Professor of Economics at Hiram College, where he teaches econometrics, law and economics, and economic theory. He is also a commercial litigator with Daubert Counsel, concentrating his legal practice on litigating Daubert issues in scientific and non-scientific expert testimony for law firms and insurance companies. A substantial part of this practice is counseling testifying expert witnesses on how the specifics of Daubert impact their testimony. His practice centers on the evaluation, proffer, and admission (or challenge and exclusion) of scientific, technical, and other expert testimony under Daubert v. Merrell Dow, Frye v. United States, and the other standards for admissibility of expert testimony. Dr. Mahle has been a finance professor at the University of Iowa, Florida Atlantic University, and Virginia Tech; and an Olin Scholar in Law and Economics at the University of Virginia School of Law. His litigation practice focuses on controlling admissibility of economics, damages, and scientific expert testimony and has included: securities and commodities litigation, such as 10b-5, arbitration, and SRO proceedings; intellectual property, products liability, medical malpractice, personal injury, construction defects, and employment litigation; and M&A. This practice involves econometric analysis of expert testimony and legal analysis of experts’ econometrics. Some of his work is collected at Daubert Counsel.com. Steve was a lobbyist for Florida’s 2013 Daubert legislation and in September 2016 argued the resulting case, In Re: Amendments to the Florida Evidence Code before the Florida Supreme Court, http://www.floridasupremecourt.org/decisions/2017/sc16-181.pdf.