January, 2006

Current Economic Issues in Securities Litigation

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Current Economic and Expert Issues in Securities Litigation

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1. Motions to Dismiss and Economic Loss Causation

Definitions:

Investment Loss: is the difference between the price paid and the price received from a security. If no sale was made within the relevant time period, then the security is deemed sold at some legally determined date and at some legally determined price (such as, under the Private Securities Litigation Reform Act of 1995, for Rule 10b-5 the selling price is effectively set at the average closing price of the security over the 90 days following the last disclosure event that extinguishes the fraud or eliminates the inflation in the share price; often assumed to be the end of the class period).

Inflation: is that portion, or component, of the market price (or purchase or sale price) of a security that is greater than the market price that would have been observed absent the wrongful acts or omissions (often referred to as “value” or “true value” of the security).

Inflationary Loss: is the inflation in the share price at the time of purchase minus the inflation in the share price at the time of sale or other legally presumed measurement date. See, for example, Green v. Occidental Petroleum Corp., 541 F.2d 1335, 1341-46 (9th Cir. 1976) (Sneed, J., concurring); Wool v. Tandum, 818 F.2d 1433, 1436-37 (9th Cir. 1986); Movitz v. First National Bank, 148 F.3d 760 at 764-765 (7th Cir. 1998) (suggesting that the portion of the loss attributable to the wrongful omission is recoverable but the entire investment loss is not recoverable and clarifying Bastian v. Petren Res. Corp., 892 F.2d 680, cert denied, 496 U.S. 906 (7th Cir. 1990) and Semerenko v. Cendant, 223 F.3d 165 at 185 (3rd Cir. 2000). Also, Restatement (Second) of Torts § 549 and Prosser and Keeton on Law of Torts § 110, pp. 765-770 (5th ed. 1984) (hereinafter Prosser and Keeton).

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1 This was prepared as a working paper for the PLUS D&O Symposium February 1 and 2, 2006, in New York. The statements made herein are opinions of an economic expert, not a legal expert. The views expressed are my own and based on my understanding. The information provided is an attempt to summarize some current legal and economic arguments being made (particularly from the perspective of an economic expert) and my thoughts as to the economic and expert implications. This is intended to provide a framework from which to provoke thought and discussion regarding current issues involving securities litigation. It should not, therefore, be relied upon in any legal context or be assumed to be entirely the views of this author and certainly not the views of any other party that I may be assisting or employed by in the past, currently or in the future. I apologize in advance for any typographical and grammatical errors. Also, much of the material here is drawn from old reports and a paper under review for publication such that the reference style will be inconsistent throughout this presentations.

2 A Director of CBIZ Valuation Group, LLC, a wholly owned affiliate of CBIZ, Inc.

3 For purposes of this write-up, I presume the typical circumstance where the wrongful act or omission allegedly causes the investor to pay too much for a security. I do not consider alternative situations where, for example, the wrongful act or omission causes the seller of a security to receive inadequate consideration upon the sale.
Transaction Causation:  But for the wrongful acts or omissions the purchaser would not have purchased the security and, therefore, could have avoided the investment loss.

Economic Loss Causation: The loss in the return on the investment proximately (legally) caused by the wrongful acts or omissions and, in the context of this write-up, synonymous with the inflationary loss, as is explained further below. Alternatively, the amount of the investment loss the purchaser would not have realized had the share price not been inflated by the wrongful acts or omissions.

Transaction causation is concerned with what an investor lost because of the purchase and sale of the security, whereas economic loss causation is concerned with that portion of the investment loss that would not have occurred had the wrongful acts or omissions not occurred. See, for example, Movitz v. First National Bank 148 F.3d 760 at 764-765 (7th Cir. 1998).

Discussion on the Current Issues

Broudo v. Dura Pharmaceuticals (Dura) is most recently cited as changing the standards and the law. Too often, as an economic expert and not a legal expert, I am frustrated that attorneys and others read far too much into the Court’s opinion in Dura and interpret that opinion the way they “think” or “would like” it to read, rather than carefully considering the actual text. Read closely, and in the context of the arguments by the United States on brief and during oral argument in Dura, the ruling in Dura is a mixed ruling that simply says that one must not only show that the security price was inflated at the time of purchase (a “necessary” condition) but, in a “short and plain statement”, the complaint must set forth how that results in a legally recognizable loss.4 (The Court stated in Dura, “We concede that the Federal Rules of Civil Procedure require only ‘a short and plain statement of the claim showing that the pleader is entitled to relief.’ Fed. Rule Civ. Proc. 8(a)(2).… But, even so, the ‘short and plain statement’ must provide the defendant with ‘fair notice of what the plaintiff’s claim is and the grounds upon which it rests.’ and ‘Ordinary pleading rules are not meant to impose a great burden on a plaintiff, but it should not prove burdensome for a plaintiff suffering economic loss to provide a defendant with some indication of the loss and the causal connection that the plaintiff has in mind.”)

The issue in determining economic loss causation is if and when the inflation in stock price was removed such that an inflationary loss occurred? The Supreme Court made very clear that it did not further clarify issues relating to proximate causation. (As stated in Dura, “We need [*1634] not, and do not, consider other proximate cause or loss-related questions.”) The United States’ position in its Amicus Brief and in its oral argument before the Court made clear that it did not mean or intend to imply that a corrective disclosure was required in order to realize loss causation. Loss causation could

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4 This is discussed at length with substantial references in a working paper I coauthored with Madge S. Thorsen, JD, and Richard A. Kaplan, JD, MBA, entitled “Rediscovering the Economics of Loss Causation.” See, also, John C. Coffee, Loss Causation After Dura: Something for Everyone, N.Y. L. J., May 19, 2005, and Meritt B. Fox, Understanding Dura, 60 BUS. LAW. (forthcoming).
be established through “other events” acting upon the fraud and the inflation. Furthermore, the Court recognized that the “truth” may “leak out” over time and such leakage can constitute economic loss causation. Finally, the Court did not provide a definition of “truth”. My understanding is that the “truth” merely needs to be the “true state” of the company and not a direct mea culpa of fraud by a defendant or other party followed by a single drop in the stock price.  

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The principle is also generally stated in opinions at a more preliminary stage, such as in Swack v. Credit Suisse First Boston, 383 F. Supp. 2d 223, 243-44 (D. Mass. 2004):

“The point to be pled and proven is that the stock price declined as the market learned the truth; the amount of decline attributable to the market’s change from deceived to knowing is the measure of the plaintiff’s loss. But the cases cited [including Emergent Capital] are perfectly consistent with the possibility that the market learned the truth gradually, and in advance of the defendant’s eventual disclosure . . . . The plaintiff must, indeed, plead that the price declined as the truth emerged, but she need not allege that it happened on a single day.”

See also Fogarazzo v. Lehman Bros., Inc., 341 F. Supp. 2d 274, 292 (S.D.N.Y. 2004) (“plaintiffs here have alleged a number of events that operated, essentially, as disclosures or market corrections;” ultimate disclosure eventually was made by defendant); Danis v. USN Communications, Inc., 73 F. Supp. 2d 923, 943 (N.D. Ill. 1999) (“the market responded to and ‘corrected’ the price of USN stock over the better part of a year as bits and pieces of negative information became available and it became apparent that USN was not capable of performing as originally represented”).

In In re Greater PA Carpenters Pension Fund v. Whitehall Jewellers Inc., 2005 WL 61480 (N.D. Ill.), the plaintiff pled that Whitehall engaged in various fraudulent transactions to inflate Whitehall’s inventory balances, net income and earnings per share and reported the falsely inflated income and earnings figures. Id. at *1. On several of these announcements, the stock price dropped. Id. at *5. The company ultimately issued two restatements of its financial statements, neither of which revealed the prior falsehoods. Id. The stock price did not fall upon these restatements. Id. Ultimately, the prior falsehoods were revealed. Id. Before Dura, the Court held that the plaintiffs had adequately pled loss causation. Id. After Dura, the defendants argued that dismissal was required because plaintiffs had not pled “truth, then drop.” The lower court noted the language of Dura that pleading loss causation “is not meant to impose a great burden upon a plaintiff” and that plaintiff had pled leakage and price drops, which sufficed. In re JDS Uniphase Corp. Sec. Litig., 2005 WL 1705766 (N.D. Cal. 2005) (plaintiff alleged there that defendants misrepresented the value of inventory and goodwill, as well as product demand. As JDS made disclosures of its actual financial situation as it related to those three indicators, among others, the stock price fell. There was no disclosure of fraud. The court recognized that disclosure of the company’s financial condition, not of the fraudulent scheme, was sufficient.) In In re Parmalat Sec. Litig., 375 F. Supp. 2d 278, 2005 WL 1527674 (S.D.N.Y. 2005), the court held that an allegation that a corrective disclosure caused a price drop is not necessary to pleading loss causation; it is sufficient to allege that a concealed risk materialized when the company experienced a liquidity crisis. The Court reaffirmed that ruling a month later. In re Parmalat Securities Litigation, 376 F. Supp. 2d 472 (S.D.N.Y. 2005). A similar ruling was made in Teamsters Local 443 Freight Div. Pension Fund v. Bombardier Inc., 2005 WL 2148919 *12, n155 (S.D.N.Y.) (materialization of concealed risk allegations are sufficient to plead loss causation; no corrective disclosure needed). See also Rocker Management LLC v. Lernout & Hauspie Speech Prod., 2005 WL 1366025 (D. N.J., June 8, 2005) (in a short seller case, allegations that false financial statements inflated the stock, causing plaintiffs injury at the time of cover, were sufficient; court distinguishing inflation at the time of cover from inflation at the time of purchase for purposes of Dura, but emphasizes the fact intense nature of the causation inquiry); Zelman v. JDS Uniphase Corp., 376 F. Supp. 2d 956 (N.D. Cal. 2005)
The Court’s citing in *Dura* of the *Restatement (Second) of Torts* and *Prosser and Keeton* has been overlooked by many and has important implications in addressing the issue of proximate causation. These sources suggest that proximate causation issues often become issues of fact and are often economic issues (not typically disposed of at the motion to dismiss or summary judgment stages).\(^6\)

**-First, the legal or proximate cause does not have to be the last event in a chain of events.** It must merely been shown that, absent the wrongful act or omission, the economic loss would not have occurred absent the fraud and that the acts or omissions created a condition that was a substantial factor in the ultimate loss realized. *Prosser and Keeton* §§ 42 (pp. 277-279) and 44 (pp. 301-321). *Restatement (Second) of Torts* §431 (“However, where it is evident that the influence of the actor’s negligence is still a substantial factor, mere lapse of time, no matter how long, is not sufficient to prevent it from being the legal cause of the other’s harm.”); §433 Considerations Important in Determining Whether Negligent Conduct Is Substantial Factor In Producing Harm (“(b) whether the actor’s conduct has created a force or series of forces which are in continuous and active operation up to the time of the harm,...”); §442A Intervening Force Risked by Actor’s Conduct (“Where the negligent conduct of the actor creates or increases the foreseeable risk of harm through the intervention of another force, and is a substantial factor in causing the harm, such intervention is not a superseding cause.”); and §460 Subsequent Accidents Due to Impaired Physical Condition Caused by Negligence (“If the negligent actor is liable for an injury which impairs the physical condition of another’s body, the actor is also liable for harm sustained in a subsequent accident which would not have occurred had the other’s condition not been impaired, and which is a normal consequence of such impairment.”).

**-Second, other events following the inflation in the stock price that are foreseeable (possible or within the realm of reasonable possibilities that an ordinary investor might anticipate) and that would operate on the fraud to cause an inflationary loss are not viewed as superseding events.** The precise event that interacts with the inflation in the stock price need not be foreseeable, but the general nature and type of harm (inflationary loss) and general types of events that could arise to dissipate the inflation in the stock price and cause the harm need to be foreseeable. In this context, market and industry forces or other company-specific events acting upon the inflation in the stock price to cause the inflation to be dissipated would always be reasonably foreseeable and, thus, not be properly viewed as “breaking the chain of causation.” *Prosser and Keeton* §§ 42 (p. 274), 43 (pp. 297-299) and 44 (pp. 301-319). *Restatement (Second) of Torts* §442A; §442B Intervening Force Causing the Same Harm as That Risked by Actor’s Conduct (“Where the negligent conduct of the actor creates or increases the risk of a particular

*(plaintiff need only allege that defendants’ pre-class period misrepresentations had “something to do with” plaintiffs’ alleged losses).*

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harm and is a substantial factor in causing that harm, the fact that the harm is brought about through the intervention of another force does not relieve the actor of liability, except where the harm is intentionally caused by a third person and is not within the scope of the risk created by the actor’s conduct.’’); §447 Negligence of Intervening Acts (‘‘The fact that an intervening act of a third person is negligent in itself or is done in a negligent manner does not make it a superseding cause of the harm to another…. if …(c) the intervening act is a normal consequence of a situation created by the actor’s conduct and the manner in which it is done is not extraordinarily negligent.’’); and §460.

-Third, if the wrongful acts or omissions were substantial factors in contributing to the loss, then that portion of the loss is recoverable. The inflation in the stock price is always, obviously, caused by the wrongful acts and omissions. If the inflation in the stock price is significantly reduced and a significant portion of the investment loss realized by the investor, then it follows that the inflation is the legal cause of the inflationary loss and should be recoverable. Prosser and Keeton §§ 41 (p. 268) and 42 (pp. 278-279). Restatement (Second) of Torts §431, §433, §442A, §442B and §447. This also logically follows from Robbins v. Kroger Props., Inc., 16 F.3d 1441, 1447 (11th Cir. 1997), which does not require that the wrongful acts or omissions be the sole cause of the investor’s loss.

-Finally, the out-of-pocket measure of loss causation set forth in Restatement (Second) of Torts § 549 and Prosser and Keeton § 110 (pp. 765-770) and the standard for loss causation at trial was not changed by the Court’s decision in Dura. The standard for loss causation at trial was largely conceded during oral argument as requiring evidence that the inflation in the purchase price was somehow substantially reduced or removed by the date of sale. Indeed, some legal commentators such as John Coffee and Merritt Fox (Coffee, Loss Causation After Dura: Something for Everyone, N.Y. L. J., May 19, 2005, and Fox, Understanding Dura, 60 Bus. Law. (forthcoming)) have suggested that the dicta in Dura was more liberal and favorable to plaintiffs on this issue in comparison with some of the outstanding decisions in the Second, Third and Eleventh Circuits. Thus, Judge Sneed’s concurring opinion in Green v. Occidental Petroleum Corp., 541 F.2d 1335, 1341-46 (9th Cir. 1976) (Sneed, J., concurring) remains good law (and sound economics) and still provides a basic framework for calculating economic loss as an inflationary loss, according to most legal scholars, and that portion of Wool v. Tandem, 818 F.2d 1433, 1436-37 (9th Cir. 1986) relating to the inflationary measure of economic loss was not overturned by Dura. Recent decisions along these lines can be found in In re Broadcom Sec. Lit. (September 14, 2005, ruling provided as an attachment, citing Fox and my declaration), In re Metris Sec. Lit. (November 8, 2005, bench ruling denying motions in limine directed at my expert report based on Daubert and Dura) and in In re Clarent Sec. Lit. (January 2005 bench ruling on motion in limines based on Daubert seeking to exclude my testimony, then my testimony at trial and the jury charge in February 2005).

My concerns, as an economist and financial analyst, are that too many attorneys, experts and courts are misapplying the principles and concepts underlying economic loss causation and are not thinking sufficiently about the economic and policy implications of
the Court’s opinion in *Dura*. Additionally, too often the legal principles may be correctly stated but are badly misapplied to the facts and fail to understand the unique circumstances and fundamental differences between the effects of fraud causing inflation in the price of a security to be inflated at the time of purchase\(^7\) as compared with the many examples that arise in the context of torts where absolutely no effect on the plaintiff’s condition could be said to have occurred until some subsequent event actually precipitates or causes an injury.\(^8\) Clearly, the fact that the wrongful acts and omissions caused the price of the security to be significantly inflated will, almost inevitably and foreseeably, mean that most significant investment losses will be accompanied by an inflationary loss.\(^9\)

In this context, the older cases on economic loss causation had largely fleshed out and correctly applied the principles and concepts in universally applying the out-of-pocket measure of damages. Experts in various articles have consistently adopted this measure as the economically correct measure of damages. See, for example, Michael Barclay & Frank C. Torchio, *A Comparison of Trading Models Used for Calculating Aggregate Damages in Securities Litigation*, 64 L. & CONTEMP. PROBS. 105, 106 (2001) (stating: “In general, damages per share are calculated as the artificial inflation when the shares were purchased minus the artificial inflation when the shares were sold.”); John Finnerty & George Pushner, *An Improved Two-Trader Model for Estimating Damages in Securities Fraud Class Actions*, 8 STAN. J. L. BUS. & FIN. 213 (2003) (discussing a damage model that measures damages based on inflation at time of purchase minus inflation at time of sale and allows for “in-and-out” or selling damages); Bradford Cornell & R. Gregory Morgan, *Using Finance Theory to Measure Damages in Fraud on the Market Cases*, 37 UCLA L. REV. 883, 885-86 (1990) (“... the measure of damages for an investor is simply ... , for plaintiffs who sold their securities before the [final] corrective disclosure, the difference between the price inflation at the time of purchase and the price inflation at the time of sale.”).
In attempting to develop some per se rules, attorneys and courts will invariably exclude a number of situations where economic loss causation is present. Just as proximate causation in the contest of torts is a difficult issue to address with a set of formulas and rules and is often highly dependent on the facts and circumstances of a particular case, the same is true for economic loss causation in the context of securities litigation. One should, therefore, be wary of overly simplistic formulas and rules applied in a complex setting.

There is a principle of symmetry in economics and causation that says that the order of events between the purchase and sale of a security should not alter the loss causation conclusions. However, in a number of the recent cases I have reviewed, the principle of symmetry is implicitly violated in practice.

For example, suppose an investor buys a share of stock for $100 and the company discloses a significant restatement one month later such that the share price falls from $100 to $50 on the corrective disclosure. We would all presumably agree that loss causation exits and the loss is $50 in this simple case. Suppose, however, a month after the corrective disclosure, the company loses a major lawsuit and files for bankruptcy before the investor sells the share, with the value of the shares falling to zero. The investor has suffered a $100 investment loss, of which $50 is the inflationary loss in this example. Would a defendant reasonably argue that the investor is not entitled to damages because the bankruptcy would have caused the loss to occur anyway? I would hope not.

However, rearrange the order of the events in this example such that the news of the adverse legal decision follows one month after the purchase of the share and the share price falls to zero upon the filing of bankruptcy. Then the company discloses a month after the bankruptcy that it had committed fraud and needed to restate its prior financial reports. Applying the principles underlying the out-of-pocket theory of loss previously stated, the investor still suffered a $100 investment loss and a $50 inflationary loss.

Why would some argue that, in this alternative sequence of events, the investor has no loss causation and not suffered a loss attributable to the fraud? Regardless of the timing of the two events following the fraud-induced inflation in the purchase price, the investor is in identically the same position at the end. Clearly, $50 of the $100 investment loss was solely caused by the fraud, in that, had the fraud not existed and the transaction still occurred the investor would have avoided $50 of the $100 loss. My point is that there is a fundamental logical and economic error when one concludes that loss causation exists in the one instance (when the corrective disclosure occurs before bankruptcy) and not in the other instance (when the corrective disclosure follows bankruptcy). The inconsistent determination of loss causation in these two alternative scenarios violates the principle of symmetry that is a foundation of mathematics and underlies a number of generally accepted financial and economic theories.

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10 This is discussed at length with substantial references in a working paper I coauthored with Madge S. Thorsen, JD, and Richard A. Kaplan, JD, MBA, entitled “Rediscovering the Economics of Loss Causation.”
One cannot credibly say that the entire $100 loss would have occurred anyway in the absence of the fraud, because $50 of the $100 would have been avoided in the absence of the fraud, even assuming the shareholder still purchased the share. Furthermore, there are some strong economic arguments that, because the number of shares in the public float are fixed, one cannot presume that the investor would have purchased two shares in the alternative at $50 each and suffered the same $100 investment loss in the absence of fraud. For one thing, assuming each investor purchased the same dollar amount of shares and increased the number of purchased shares (to compensate for the lower share price), that would alter the actual number of shares traded and result, in some class actions, with the implicit assumption that more shares would have been purchased and retained in the absence of fraud than were outstanding and available to be purchased. Thus, the assumption that the dollar amount of the investment is fixed (as opposed to the number of shares) will lead to an impossible “in the absence of the fraud” scenario. With the prevalence of indexing and diversification principles in portfolio management, the smaller the market value of the outstanding float, the smaller the average holdings of investors (or, alternatively, the fewer number of investors). For example, a large institutional investor might buy 100,000 shares when the stock is trading at $50 per share but might have purchased only 75,000 shares had the stock been trading at $25 per share. It is highly unlikely the institution would have purchased (upon disclosure of the truth) 200,000 shares had the stock price been reduced to $25 per share.

Additionally, such an inconsistent approach creates terrible public policy consequences in that officers and directors upon discovering fraud within their company are rewarded by avoiding any corrective disclosures or by timing any corrective disclosures (for example, a restatement of historical financial reports) to follow other negative news that dissipates the inflation before the “fraud” itself is revealed. This is precisely the type of situation that arose in Gebhardt v. Conagra Foods, Inc., 335 F.3d 824 (8th Cir. 2003), reh'g denied, 2003 U.S. App. LEXIS 17920 (8th Cir. 2003). In Conagra, the company disclosed adverse information regarding its most recent financial results for 2000 in February 2001, specifically announcing reduced earnings and reduced earnings expectations in its UAP division, without any disclosure of a restatement for prior financial reports. This reduction in earnings expectations largely extinguished the inflation in the share price by revealing the true financial state and prospects of the company. Later, in May 2001, Conagra disclosed a restatement that was significant in its effect on Conagra’s earnings in the years 1998 and 1999 but not 2000. The District Court dismissed the complaint on grounds of materiality (lack of loss causation). The Eighth Circuit reversed the dismissal and the matter was ultimately settled. Both the Court in Dura and the United States in its brief and oral argument in Dura favorably cited the Conagra decision and distinguished it from the facts in Dura.

In summary, my concern is that, given the law, a number of complaints dismissed at the pleading stage and a number of grants of summary judgment based on a lack of economic
loss causation following *Dura* are factually and economically in error.\(^{11}\) Whether the plaintiffs failed in those cases to adequately plead the loss causation facts in a manner that could lead to a claim of recoverable damages is a legal issue and not my concern. As an expert, there are times when courts appear to be vastly oversimplifying the issue of economic loss causation in the context of securities litigation and applying black-white rules that are inconsistent with the current understandings in finance as to the valuation and pricing of securities and the interaction of forces on the valuation and pricing of securities.\(^{12}\)

2. **Class Certification**

The definitions of and criteria for determining market efficiency and materiality have often been significant issues at the class certification stage of the proceedings.\(^{13}\) The definition of market efficiency was recently clarified in decisions by the US First Circuit Court of Appeals in *In re PolyMedica Sec. Lit.* and *In re Xcelera.com*, both opinions were issued by the same panel on December 13, 2005. I testified in *Xcelera.com*.

In summary, the Court held that informational efficiency (demonstration that the market “rapidly” incorporates public information) is required for presumption of reliance and for class certification. However, it also found that evidence of “fundamental efficiency” (evidence that the market always prices securities “correctly”) is not required for reliance and would require retrospective analyses or second-guessing the market’s current valuation. The Court favored the criteria previously set forth in *Cammer v. Bloom* as appropriate for consideration of informational efficiency. The Court also provided in *Xcelera* some clarification as to the term “rapidly” as within one or two days.\(^{14}\)

Other issues include whether and to what extent loss causation and reliance/materiality issues should be further considered by courts at the motion to dismiss and class certification stage of proceedings. Some believe that the US Fifth Circuit Court of

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\(^{14}\) “See Jonathan R. Macey et al., Lessons from Financial Economics: Materiality, Reliance, and Extending the Reach of Basic v. Levinson, 77 Va. L. Rev. 1017, 1031 (1991) (stating that "financial economists often define the event period as the two-day period consisting of the announcement day and the following day"); see also Lehockey v. Tidel Techs., Inc., 220 F.R.D. 491, 506-07 (S.D. Tex. 2004) (concluding that plaintiff’s expert's event study using two-day window was "sufficient to demonstrate, for class certification purposes, that a cause and effect relationship between company-specific announcements and stock price may exist").’’ See, also, *Crossroads Sys., Inc.*, 364 F.3d 657 (5th Cir. 2004), where a two-day event window was considered appropriate.
Appeals went too far in this regard in its decisions in *Nathenson v. Zonagen* and, particularly, in *Crossroads Sys., Inc.*, 364 F.3d 657 (5th Cir. 2004) (a case where I served as an expert and the District Court’s decision was partially reversed on loss causation and materiality) as compared with the US Ninth Circuit’s decision in *No. 84 Employer-Teamster Joint Council Pension Trust Fund v. America West Holding Corp.*, 320 F.3d 920 (9th Cir. 2003), cert. denied, 124 S. Ct. 433 (2003).

3. Measurement of Materiality and Inflation Per Share

**Event Studies**

An *event study* is an examination of the association between news about a company (good, bad, mixed, or neutral) and stock price movements. The researcher is examining whether the association between news and share price movements is strong enough to support an inference of, among other things, causation. If price movements are found that are unexplained by the “market model” and are statistically significant, individually or collectively, a causal connection between the event in question and movements is established. The study will separate out the effects of company-specific news on the stock price from the effects of market or industry forces on the price and thereby identify “true” price and the inflationary component of price. Typically, event studies work backward from what is ultimately determined to be a fair price, after dissipation of inflation, to determine how much inflation due to the fraud was contained in the price during the relevant time frame all the way back to the beginning.\(^\text{15}\)

An event study can be thought of as involving three interrelated stages.\(^\text{16}\) The first is review of all available public information, on a qualitative basis, to identify what

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\(^\text{15}\) The underlying principle is that if truth had been disclosed timely, the stock price adjustments that occurred at the end would have occurred over time and earlier in time. Cornell & Morgan, *Using Finance Theory to Measure Damages in Fraud on the Market Cases*, 37 UCLA L. REV. 905-906 (1990); John Koslow, *Estimating Aggregate Damages in Class Action Litigation Under Rule 10b-5 for Purposes of Settlement*, 59 FORDHAM L. REV. 811, 819-25 (1991); Janet Cooper Alexander, *The Value of Bad News in Securities Class Actions*, 41 UCLA L. REV. 1421, 1426-27 (1994); Finnerty & Pushner, *An Improved Two-Trader Model for Estimating Damages in Securities Fraud Class Actions*, 8 STAN. J. L. BUS. & FIN. (2003) at 8-11; 1195-98 (discussing adjustment of corrective events over time using a “comparable-stock index that recognizes both industry and market-wide influences,” and adjustment for “firm-specific factors that can be directly attributed to company announcements that are not related to the fraud” using the “backwardation” approach – based on percentage returns not absolute dollar changes).

\(^\text{16}\) We refer to various “stages” for simplification; protocols are set *a priori* and regressions and other processes in each stage may be run simultaneously. Event studies can vary in practice, including differences in assumptions and levels of investigation and, consequently, different event studies can result in significantly different levels of precision. However, all event studies tend to include event identification, a market index choice and a statistical analysis of the events of interest. See, for example, M. Laurentius Marais & Katherine Schipper, *Event Study Methods: Detecting and Measuring the Security Price Effects of Disclosures and Interventions*, in ROMAN L. WEIL ET AL., *LITIGATION SERVICES HANDBOOK: THE ROLE OF THE FINANCIAL EXPERT*, 2005 CUMULATIVE SUPPLEMENT 17A (3d ed. 2005) (discussing event study methods and the use of event study methodology in litigation). Also, JOHN Y. CAMPBELL ET AL., *THE ECONOMETRICS OF FINANCIAL MARKETS* 150-152 (1997). Hereinafter the term “event” is used in a technical sense to mean the entry of information into the marketplace that is new and potentially material. It is not being used it in the colloquial sense of something that takes place or an occurrence.
investors would find potentially “material,” as guided by economic principles, published literature and guidelines on the types and nature of material information, and the experience of the researcher. This information can come from analysts’ reports, press releases, securities filings, news articles (newspapers and daily publications, as well as more general publications) and Internet bulletin board postings to the extent they appear to represent informed investors’ perceptions.\footnote{See Werner Antweiler & Murray Frank, \textit{Is All That Talk Just Noise? The Information Content of Internet Stock Message Boards}, J. Fin., June 2004, at 1259-1294 (“We find that stock messages help predict market volatility. Their effect of stock returns is statistically significant but economically small.”)}

The second stage of the study involves identification of the relevant market and guideline or peer group companies and the construction of a “market model.” How the relevant market moves is compared to the movement of the stock. How the peer companies’ stock moves is compared to the subject as well. The result of the second stage of the analysis is a market model that predicts the daily return of the security based on the daily returns of an appropriate mix of market indices and an industry index.

In the third stage of the analysis, the security’s returns on identified event days or series of days are analyzed, looking at what the market and industry indices predicted and what the security actually did. Put another way, these statistical techniques separate out the influences of market and industry forces on the price so that the effects of identified company-specific events (including news both relating to and unrelated to the fraud) are isolated.

of the market model. The older, more primitive method is known as the cumulative abnormal return method ("CAR"). The CAR method examines some "control", "clean" period when presumably the stock price was not affected by news relevant to the issues in the case and determines the "normal" relationship between the company's security returns and the returns from investing in alternative industry and market securities. Then the returns on specific dates of interest (when relevant events occur that inflate or correct the inflation in the stock price) are estimated net of the predicted returns based on the returns from industry and market indices. The "significance" of the "abnormal" movements (difference between the actual returns and the returns predicted based on industry and market indices) on the dates of interest is measured against some standard error.

For example, supposed upon an identified corrective disclosure, the company’s stock price falls from $20 to $17 per share, a decline of 15%. Suppose on the same day, however, the market and industry indices also fall and, as a result, predict that the company’s stock price would have fallen 5%, or $1.00, absent any corrective disclosure. The abnormal return would then be the -15% actual return minus the -5% predicted return, or -10%. Having found the abnormal return to be 10%, one would then compare that with a standard rate of error for such a prediction of, for example, 5%. The measure of the significance of the standard error is a t (or Z) statistic that is the -2.00, or -10%/5%.

In the event-parameter, or intervention analysis method, the estimation of the event effects and their statistical significance (t-statistics) are provided for in the regression analysis and based on a regression that includes the time period of interest. The event parameter approach isolates event days from non-event days by use of intervention (or "dummy") variables that identify days when events are assumed or likely to have occurred and uses the results from the non-event days as the control period for estimating the market model. Two advantages of the event-parameter approach are that it does not require a separate control ("clean") period and can provide the appropriate tests of the events of interest without requiring a separate set using manual calculations.

One battle-ground is the threshold of statistical confidence requirement for concluding materiality and loss causation from an event study. Variables tend to be viewed as "meaningful" when the t-statistic is greater in absolute terms than some threshold criteria (commonly 1.00, 1.2, 1.3 or 1.33). This is often referred to as the criterion for admission of a variable in a regression and is often a preset criterion in a step-wise regression routine. Meaningful simply implies that it is probable given the a priori determination of potential materiality and the relative stock price movement that the event had some effect on the stock price. Statistical significance is often determined based on a t-statistic of either 1.65 or 1.96 (depending on the level of error deemed acceptable and the nature of the test), but is not a strict, literal rule (as some

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20 The selection of events is based on the content and context of the information identified without consideration of the actual stock price movements.
experts would have us believe). Generally, I refer to any absolute t-statistic between 1.65 and 1.95 as weakly significant, any t-statistic with an absolute value greater than 1.96 as statistically significant (in the common sense), any t-statistic greater than 2.33 as highly significant and any t-statistic greater than 3.0 as extremely significant (an “outlier” or extremely unlikely that the relationship was a result of mere chance).

One problem with the older, CAR method is that it can produce biased or inconsistent estimates when the “control”/”clean” period contains outliers and company-specific news events. Additionally, the standard error will be substantially overstated in such a

21 Statistical significance has more than one meaning and is not a talismanic term, however. See David H. Kaye & David A. Freedman, Reference Guide on Statistics, in FED. JUD. CNTR., REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 83, 123-27 (2d ed. 2000) (discussing practical significance); ALAN STUART ET AL., KENDALL’S ADVANCED THEORY OF STATISTICS, VOLUME 2A: CLASSICAL INFERENCE & THE LINEAR MODEL 193 (6th ed. 1999) (“This numerical convenience [rule of thumb criteria for statistical significance] has persisted long beyond its hour of need.”); LAWRENCE LAPIN, STATISTICS FOR MODERN BUSINESS DECISIONS 186 (1978) (“A decision rule must be chosen that will provide a lower probability of the more serious error . . . . He [the decision-maker] should therefore be wary of setting Alpha [the criteria for significance] and Beta at arbitrary or traditional levels.”); DONALD A. BERRY & BERNARD W. LINDGREN, STATISTICS: THEORY AND METHODS 423-27 (2d ed. 1996) (arguing against a fixed criteria for statistical significance and for considerations of practical significance).

22 There is substantial general and specific literature in the statistics, economics and finance fields discussing the problems that can arise in the traditional two-pass CAR methodology. See, for example, Larcker, Gordon and Pinchea, “Testing for Market Efficiency: A Comparison of the Cumulative Average Residual Methodology and Intervention Analysis,” Journal of Financial and Quantitative Analysis, June 1980, pp. 267-287. The authors in this paper state (p. 267), “The objective of this paper is to suggest that the traditional CAR methodology is often inappropriate and that intervention analysis [italics in original] is a possible alternative. Where the systematic risk (i.e. Beta) of a firm change as the result (or in anticipation) of an announcement, the cumulative average residual methodology will result in biased residuals…. Intervention analysis, on the other hand, can separate such risk changes from the information content of the announcement. In addition, intervention analysis also allows the observed auto-correlation in the market model residuals to be removed, thus providing improved beta estimates required for reliable statistical testing.” See, also, Martin and Simin, “Outlier-resistant estimates of beta,” Financial Analysts Journal, September 2003, p. 56+. Franses in Time Series Models for Business and Economic Forecasting, 1998, recommends “intervention” analysis (p. 130) consistent with Box and Tiao (1975) and points out the statistical problems that arise when one does not capture the effects of known events (with dummy variables) or “neglects them” (pp. 128-129). He states (p. 144), “With a priori knowledge of specific events and approximate dates which may yield aberrant observations (…), it is not difficult to examine their relevance for a model that will be used for forecasting. We can simply extend our model with additional regressors, such as the dummy variables…. Standard tests for significance can then be used to decide which regressors are potentially important for forecasting.” In other words, not only should a researcher use a priori information to identify possible events for inclusion in the regression analysis as dummy variables, but should then test to determine whether such dummy variables should be included in the final analysis.

The bias and inconsistency problems associated with the two-pass or CAR event analyses are particularly significant in single company event studies. First, the “clean period” required to obtain estimates of the standard errors and the coefficients of the market model in the CAR methodology is almost never really clean in a statistical sense. Clean in a statistical sense implies few or no significant company-specific events and a properly specified market model. Because company-specific events are common in stock price return data, the residuals during the candidate “clean period” are usually not normally distributed (fat tails or kurtosis is common) and the estimated market model is biased and inconsistent due to an omitted variables problem. These problems lead to overstated standard errors and understated t-statistics during the event analysis stage of the two-pass methodology. Additionally, fundamental changes in the businesses of a company and its peer companies over time can render the market model coefficients in the “clean period” inapplicable to or biased relevant to the estimation period. (See, for example, Marais and Schipper,
circumstance. The greater the standard error, the less likely the finding of statistical significance. This means that poorly fitting models will be unable to explain much and, thus, are less likely to reliably find statistical significance. (A test that is less precise and not able to readily distinguish between two alternative hypotheses is referred to as having low “power”.)

Another problem with the CAR method is that a control period may simply not be available or may be so different from the period of interest that it does not represent a reliable method for estimating the market model and the standard error for events during the period of interest.

The event-parameter/intervention method is more precise and allows for the creation of a clean, control set of observations within the period of interest by identifying dates when material information about the company is not suspected and analyzing the relationship between the company’s security return on those “non-event” days against the market model. For this reason, the event-parameter method is increasingly used and accepted in the finance literature in preference to the CAR method.

However, the event-parameter method is substantially more time-consuming and expensive to fully implement such that most academic researchers only conduct a limited search for news and events, limit their search for general events (events not specifically of interest in the event study) to those events associated with outliers, or only identify specific types of events of interest. While an improvement over the CAR method, such

“Chapter 17A: Event Study Methods: Detecting and Measuring the Security Price Effects of Disclosures and Interventions,” Litigation Services Handbook: The Role of the Financial Expert, Third Edition, 2005 Cumulative Supplement, pp. 17A-16 to 21, wherein they discuss the problem of low “power” in single company event studies and the problem of “interventions” in the estimation period yielding “unstable results”.) Second, the market model in the two-pass CAR methodology is often estimated using a daily returns series. The low percentage of variance explained by the market model (low R-squared of 15% or less) leads to an unfavorable (low) signal to noise ratio and will tend to cause the market model coefficients to be understated or inaccurate even if the omitted variables (omitted company-specific events) did not cause them to be biased. For this reason, beta estimates are preferably made using longer return windows until the R-squared improves or the estimation of the market model must be made in a regression with the company-specific events included as indicator or dummy variables. See Franses in Time Series Models for Business and Economic Forecasting, 1998, pp. 128-129.

23 In creating a precise, reliable market model required for an event study, one should account for the effects of all significant company-specific news events during the study period, even news unrelated to the subject of interest. This is done using dummy or indicator variables integrated into the market model regression to capture and control for the effects of company-specific events. In a chapter of the textbook Market Models: A Guide to Financial Data Analysis, 2001, Alexander explains (p. 441), “Dummy variables should be viewed as necessary measures for data that have structural breaks, regime shifts or seasonalities. If dummies are omitted there will be residual problems that lead to inefficient parameter estimates on the real explanatory variables.” In other words, if there are significant news events that caused the stock price of the company to move on specific days (both related and unrelated to the allegations in this case), it is necessary that one capture the effects of such news events with dummy variables on the appropriate dates in order to have a reliable analysis. Alexander specifically states (p. 440), “…[O]ne might consider creating a dummy variable to model the timing of important news announcements,….Structural break dummy variables are important whenever the data covers a permanent shift arising from a change in regime, or a temporary shift due to an extreme market movement. Dummy variables should be used prudently and only if there is a real reason, such as an important news announcement....”

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partial implementation of the event-parameter method yields less precision and does not fully capture the statistical benefits of the intervention analysis method.

Additionally, pre-specifying criteria for selecting event days and the selection process requires some judgment and skill. As a result, different researchers will often modestly differ as to the events selected, but the most important events, the events that have the most influence and are outliers, will generally be chosen as events by most researchers. In practice, the differences in event selection across different researchers (whether due to different search criteria, different databases or differences in judgment) tend to be marginal in their effects on the analysis (most of the differences typically relate to events that do not materially alter the conclusions) such that the gain in precision and reliability from identifying and controlling for selected events substantially exceeds the loss in efficiency associated with the selection process.

The event-parameter method was typically acknowledged as a generally accepted practice in most of my earlier cases. However, in the past two years, this issue of event study methodology became something of a battle-ground and Daubert issue, particularly in In re Xcelera.com Sec. Lit., In re Raytheon Sec. Lit. and In re Broadcom Sec. Lit. In Xcelera.com, the criticisms of the opposing counsel and opposing experts were overcome (referred to as a “red herring” in a September 2004 opinion). In both Raytheon and Broadcom, the defendants chose to engage multiple experts to criticize my event study methods for reasons that proved to be immaterial (minor issues of judgment) and/or based on straw-man arguments (mischaracterizing what I did and how I did it). In Raytheon, the court, after extensive briefing and hearings, denied defendants’ motions (June 2004 bench ruling) with respect to my event study methods. In Broadcom, a rebuttal expert, M. Laurentius Marais, tested and vetted the analysis and then rebutted the defendants’ experts’ criticisms such that it became clear that the defendants’ experts’ criticisms were both immaterial and inappropriate. The defendants in Broadcom did not file a Daubert motion at the appointed time (limited their motion in limine to the issue of aggregate damages and trading models) and the plaintiff’s counsel in Broadcom filed, instead, an

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24 In my analyses, the list of material items is based on the NASDAQ guidelines as recognized by the SEC in Federal Register, Vol. 67, No. 157, August 7, 2002, pp. 51306-51310. We then added third party news reports, analysts’ reports and insider trading events to that list consistent with the academic studies.

25 Based on my experience, two researchers might disagree up to 5% to 10% of the time as to whether to include or exclude from the statistical analysis an event when news is identified. Additionally, some small percentage (typically less than 10% of the outlier dates for a widely followed stock) of events will invariably be missed in a retrospective analysis because the news source, rumor or analyst report is not picked up in the databases searched or is never published.

26 As long as there are sufficient degrees of freedom, the addition of more events (over-identification of events) will ensure a set of “clean” observations in the control sample of “non-event days” and avoid contaminating the market model estimates. Thus, adding “too many” events ensures the relative absence of bias and ensures consistency of the estimates but at some slight loss of efficiency. See, for example, Intriligator, Econometric Models, Techniques, and Applications, 1978, pp. 188-189, and Pindyck and Rubinfeld, Econometric Models and Economic Forecasts, 1991, p. 162-166.

27 In Raytheon, the difference in results between the event-parameter method and the CAR method was minimal. In fact, the CAR method resulted in slightly greater damages, all else being equal. In Broadcom, there were important outlier events that made the CAR method demonstrably unreliable such that the CAZR method yielded distinctly different market model estimates over different control periods.
affirmative motion to quality both Marais and me in order to force the issue. The defendants admitted I was “qualified” in Broadcom and the court noted those admissions in certain rulings. In In re Metris Sec. Lit. (November 8, 2005, bench ruling) and in In re Clarent Sec. Lit. (January 2005 bench ruling finding “plenty of science”) these criticisms were similarly rejected.

A second battle ground in this context is how events, individually and as a group, should be evaluated. Events and information are generally not absolute. A third-party might reveal adverse (partially corrective) information and the company might immediately respond with a denial, such that the security price movement on a given day might not be significant, even though both information events were material. Additionally, leakage of the truth may be the result of a number of actors (institutional investors, arbitragers, short sellers, market makers or specialists, analysts and ordinary investors) investigating and realizing corrective information through a variety of channels. For this reason, tests of events, as a group, are generally preferred over individual tests. A series of 5% abnormal declines in a company’s share price might not be statistically significant individually but, when strung together over a period of time, can often lead to highly significant declines in stock prices.

28 Bradford Cornell & R. Gregory Morgan, Using Finance Theory to Measure Damages in Fraud on the Market Cases, 37 UCLA L. REV. 905-906 (1990). When a fraud is revealed slowly over time, the event study researcher will “extend the observation window surrounding the disclosure date . . . . The window begins far enough in advance of the disclosure for the analyst to be reasonably confident that no significant information leakage has occurred . . . . The window ends at a date when the analyst feels confident that most of the information is publicly available . . . .” Princeton economics professor BURTON G. MALKIEL, A RANDOM WALK DOWN WALL STREET 192-93 (2003) reports, “[r]esearch indicates that, on average, stock prices react well in advance of unexpectedly good or unexpectedly bad earnings reports.” This is also discussed in Sankarshan Acharya, Value of Latent Information: Alternative Event Study Methods, J. FIN., Mar. 1993, at 363-85. Other similar findings on the market’s anticipation of earnings events can be found in Stanley G. Eakins et al., Earnings Forecasts and Institutional Demand for Common Stock, J. APPLIED BUS. RESEARCH, January 1997, at 57+ (discussing the effect of whispers on earnings expectations relative to analyst earnings expectation numbers and prior to actual earnings announcements; they find, “While initially surprising, the results presented in this paper may be simply affirming that institutional investors are rational believers in efficient markets.”); see also Paul H. Malesta & Rex Thompson, Partially Anticipated Events: A Model of Stock Price Reactions with an Application to Corporate Acquisitions, 14 J. FIN. ECON., at 237-50 (1985); and JOHN Y. CAMPBELL ET AL., THE ECONOMETRICS OF FINANCIAL MARKETS 166 (1997). A general article on event timing and uncertainty is Clifford Ball & Walter Torous, Investigating Security-Price Performance in the Presence of Event-Date Uncertainty, 22 J. FIN. ECON. 123-53 (1988). Similarly, Srinivasan Ragothaman & Bruce Bublitz, An Empirical Analysis of the Impact of Asset Writedown Disclosures on Stockholder Wealth, QUARTERLY J. BUS. & ECON., Jun. 1996, at 32+, state, “[s]pecifying a date when information reaches the market is not always feasible; information can reach the market gradually through many sources . . . . Thus, in all prior studies the precise identification of the event date is a problem; the market seems to have alternative sources of information.” As “event windows” are expanded, however, the power of the statistical inferences diminishes. Thus, it is important not to extend an event window beyond the period in which the meaning of the information itself appears to be unfolding in the marketplace. Dmitry Krivin, Robert Patton, Erica Rose & David Tabak, Determination of the Appropriate Event Window Length in Individual Stock Event Studies, National Economic Research Associates (4 November 2003), Working Paper, available at www.nera.com/publication.asp? p_ID=1287.

29 This is referred to as a joint test.
Materiality

Information is deemed to be material if “there [was] a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of information made available.”

While the concept of materiality is broadly understood, it has both qualitative and quantitative aspects that make this issue difficult to apply in practice. Consistent with my prior comments, materiality is a fact-intensive inquiry that is too often oversimplified and incorrectly applied at the motion to dismiss and summary judgment stages of proceedings. An inflationary statement may not necessarily cause the security price to rise and a corrective disclosure may not necessarily be identified with a significant security price decline, as some would suggest. In some cases, the most obviously corrective disclosures came after prior disclosures had largely removed the inflation in the security price such that the security price failed to decline significantly upon the corrective disclosure, as occurred in Conagra. In other cases, the presence of multiple news items and conflicting information on the same days as the inflating or corrective information masked the materiality (as occurred in Greenberg v. Crossroads Systems). Often, perhaps more often than not, inflationary statements are not necessarily designed to drive up a stock price as to prevent or retard the natural decline in the stock price that would have occurred had the true state of affairs been made known.

Assume, for example, a company reports earnings of $.90 per share as compared with published analysts’ consensus expectations of $1.00 per share. All else being equal, one would expect the stock price to decline on such announcement, say from $20 to $18 in this example. Suppose, however, that the true earnings were actually $0.50 per share and upon the announcement of the true earnings the share price would have fallen disproportionately to $8 per share. In this example, there may be no legally actionable inflation in the share price prior to the earnings announcement such that the true value and the price are both $20 per share and the inflation per share is zero prior to the earnings announcement. After the earnings announcement, the price is $18 but the true value is $8, meaning that the inflation per share is $10. Thus, a disclosure event can cause the stock price to decline but lead to substantial inflation in the stock price as a result of the disclosure.

Situations like the one presented in the prior example are, in fact, quite common. Similarly, it is not uncommon to find the most obvious corrective disclosures so late in time that they occur well after the end of the class period and well after the inflation in

32 Compare No. 84 Employer-Teamster Joint Council Pension Trust Fund v. America West Holding Corp., 320 F.3d 920 (9th Cir. 2003), cert. denied, 124 S. Ct. 433 (2003) with Greenberg v. Crossroads Systems (5th Cir.) for two very different and opposite positions in this regard.
the security price has been removed. Yet, too often, it is assumed that if a particular false or misleading statement does not cause the stock price to rise, then it is not inflationary, not material or not actionable.\textsuperscript{33} Similarly, it is often mistakenly assumed that if a particular corrective disclosure (often viewed in isolation) did not have a certain absolute (in dollar terms) or relative effect on the security price, then the prior misleading information was not material.\textsuperscript{34}

My point here, therefore, is that attempts to require evidence of materiality based on an event study finding statistically significant movements in the security price associated with some identified statements or disclosure events may be inappropriate as a test of materiality and reliance. Alternative evidence, such as financial analysis and factual analysis of statements commented upon in the news and in analysts’ reports may be as or more reliable in factually determining whether a particular group of statements were material to investors.

4. Damages

Measurement of loss

Economic loss causation is based on the portion of the loss in share price (assuming the shareholder purchased and sold the shares in the same amounts and at the same times, but at the “true” values instead of at the inflated prices) that would not have occurred had the truth as alleged been disclosed in a timely manner. Fraud infuses material information that is false into the mix of information underlying the stock price (or omits to state material information); the market values that false information or omission; and the overall stock price is artificially inflated. The value of the false information (or the value incorrectly attributed to the price because true information is withheld) is sometimes referred to in securities litigation as the “inflationary component” of the price, or the “inflation.” The stock price then moves through the marketplace with both a true value and an inflation component, the latter of which is based on the fraud. The stock’s “absolute” price—the dollar amount at which it is actually trading in the real world—is composed, in other words, of two parts: true value and inflation.

“Inflationary loss” always means the loss due to the fraud and is measured by inflation on the day of purchase minus inflation on the day of sale (or measuring date, if not sold before 90 days after the end of the Class Period).\textsuperscript{35} Because the class includes all shares

\textsuperscript{33} This point was argued and rejected in Raytheon by counsel for PriceWaterhouse Coopers in connection with the allegedly false and misleading audit opinion issued by the accountants in Raytheon’s Form 10-K.

\textsuperscript{34} As was argued by the defendants in Conagra.

\textsuperscript{35} This damage measure is well recognized and has been consistently applied by experts in securities litigation. Additionally, there are strong economic arguments as to why the inflationary loss is always a “reasonably foreseeable” loss and always caused by the fraud, notwithstanding the operation of the market or other events upon the inflation in the stock price.

For references by economic experts, see, for example, Michael Barclay & Frank C. Torchio, A Comparison of Trading Models Used for Calculating Aggregate Damages in Securities Litigation, 64 L. & CONTEMP. PROBS. 105, 106 (2001) (stating: “In general, damages per share are calculated as the
purchased by qualified individuals, inflationary loss is measured on a per share basis because, had the truth been disclosed sooner and the share price been lower, the class would have paid a lower price per share on each day.\(^\text{36}\)

I divide the total investment loss realized on a share purchased during the Class Period into two parts: part one being that portion of the investment loss that is due primarily to forces and events that would have occurred regardless of any wrongful acts and omissions, and part two being that portion of the investment loss that relates to the inflation in the share price being dissipated and, therefore, is solely attributable to the allegations of wrongful acts and omissions.

The investment loss (often referred to as “transaction causation”) is the difference between the price paid for a share upon purchase during the Class Period and the price at which the share was sold, if sold, during the Class Period. If the share was not sold during the Class Period, then the investment loss is assumed to be the difference between the purchase price per share at the time of purchase minus either the average closing price following the Class Period up to the date of sale, if sold within 90 days after the end of the Class Period, or the average closing price for the 90 days following the Class Period.

The inflation-per-share analysis is summarized in spreadsheet form. Inflation per share is determined using the residual-returns method (also known as the backwardization method). The residual-returns method is commonly used to determine inflation per share.

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\(^{36}\) Share purchases by certain institutions and funds are driven by the market value of the float relative to a target market of shares as a whole such that, if the truth was disclosed and the market value of the float declined, the total purchased amount in dollars would be reduced and the number of shares purchased would be the same. Shareholders typically purchase set numbers of shares in orders divisible by 100. If, in contrast, one assumed fixed dollar amounts of purchases, then had the share price been reduced by the disclosure it is often the case that there would not have been enough shares for the entire class of damaged shareholder to purchase shares of the company in the hypothetical alternative world.
in securities litigation. It assumes (consistent with facts alleged) that the relevant corrective events at the end of the Class Period should have occurred earlier in time and would have been impounded in the security price earlier in time or at the beginning of the Class Period had the true state of affairs as alleged been disclosed.

It is essential that the inflation-per-share analysis be performed in a manner consistent with the event-study analysis. Because stock prices are best modeled as a result of a diffusion process with periodic jumps, events must be analyzed based on percentage movements and not absolute dollar changes, and adjustments must be made for compounding over time. The failure to adjust for compounding and compression over time is vital to estimating the “but for” price, or true value, at the time of purchase.

The so-called dollar-drop method, while used by some experts in securities litigation, is, therefore, inconsistent with the academic literature on modeling stock-price movements and is generally an inappropriate method for determining inflation per share at the time of purchase because it mistakenly assumes that the dollar decline associated with a corrective disclosure is exactly equal to the dollar decline that would have occurred had the “truth” been disclosed at the time of purchase. The failure of the dollar drop methodology to adjust for changes in market, industry and non-fraud-related factors influencing the inflationary component of the share price is often fatal to the method.

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38 Alexander, Market Models, 2001, at 66-67, 286-287, 320-322, 430-431, 440-442 (discusses the use of the natural log transformation to capture the diffusion process and events to control for jumps in stock prices at specific points in time); Franses, Time Series Models for Business and Economic Forecasting, 1998, at 128-130 (discusses the need to control for sudden changes in stock prices); Tsay, Analysis of Financial Time Series, 2002, at 16 (shows returns based on daily log returns and percentage returns) and 244 (discusses a “jump diffusion model proposed by Kou (2000)” to model stock price movements).

39 Compression is equivalent to saying the “bigger they are the harder they fall.” The higher the stock price the more room it has to fall. The following example illustrates the principle of compression. Suppose two events of equal importance result in a loss of 75% in the share price. The temptation is to divide the percentage drop in half and say that each event accounts for 37.5% of the decline. If one of the events was foreseeable and actionable earlier in time and the other unrelated to the Complaint, then this simplistic approach would say that the inflation in the share price prior to the event is 37.5%. However, two 37.5% events would combine to only cause a 61% decline in the share price (1-(1-.375)*(1-.375)). The individual percentage impact of each event would have to be 50% in order for the total decline after the two events to be 75%. Mathematically, 75% = 1-(1-.5)*(1-.5).

40 Finnerty and Pushner, “An Improved Two-Trader Model for Estimating Damages in Securities Fraud Class Actions,” also published in Stanford Journal of Law, Business and Finance, 2002, at 8-11 (discusses adjusting the corrective events over time for a “comparable-stock index that recognizes both industry and market-wide influences” and adjusting for “firm-specific factors that can be directly attributed to company announcements that are not related to the fraud” using the backwardization approach based on percentage returns, not absolute dollar changes).
Only in some limited situations, or by chance, will the dollar drop associated with a corrective disclosure later in time be equivalent to the dollar decline that would have occurred earlier in time, at the time of purchase. The dollar drop method will systematically underestimate the inflation per share damages when industry and company share prices have been generally declining throughout the class period and will systematically overestimate inflation per share damages when industry and company share prices have been rising throughout the class period. It can be shown by counter-example that the dollar drop method will sometimes yield results that are illogical.\textsuperscript{41}

Additionally, valuation theory bases common share prices on factors such as expected growth, earnings, and cash flow using various valuation multiples, which vary over time with changes in market sentiment, economic growth rates, interest rates, and perceptions of industry and market risk. Thus, a reduction in earnings per share on one day is not likely to have exactly the same dollar effect on a different day during the study period.\textsuperscript{42}

The concept of “equivalent disclosure” requires that percentage declines in a security’s price associated with later corrective disclosures and percentage increases in a security’s price associated with inflationary events be translated (mapped) into percentage declines or increases that would have occurred earlier in time had the alleged true facts been disclosed in a timely manner.\textsuperscript{43} Relevant events are those identified events that change the relative amount of inflation in the security price and either would not have occurred but for the allegations or would have occurred (or equivalent disclosure events would have occurred) at or before the beginning of the Class Period but for the allegations in the Complaint. The relevant events are assumed either to have not occurred (if inflationary), to have occurred at an earlier point in time (if corrective), or to have had very different effects on the security price had the truth, as alleged, been disclosed. Often, in practice, the process of using events to determine the amount of inflation in the security price throughout the class period requires substantial financial analysis in the context of the allegations or other expert reports (such as an accounting expert’s opinions as to the extent of the accounting misstatements as of each quarterly earnings announcement) in order to properly estimate inflation per share throughout the class period. Thus, the event study analysis may be helpful, or even essential, in estimating inflation per share but may not be the sole criterion for estimating inflation per share and, in some cases, may not be useful for such purposes.\textsuperscript{44}

\textsuperscript{41} In instances where there is substantial fraud and a rapidly rising security price during portions of the class period, the absolute dollar declines in the security price associated with the corrective disclosures can cumulatively exceed the security price earlier in the class period. Assuming a constant dollar amount of inflation based on the absolute dollar declines will, in such a circumstance, lead to a mistaken result that the inflation in the share price was greater than the share price and the true value component was negative at the time of purchase. Given the nature of equity valuation, such a conclusion is illogical. A situation such as this occurred in the \textit{Cendant} securities case in 1998.

\textsuperscript{42} See, for example, the valuation discussions in Jay W. Eisenhofer et al., \textit{Securities fraud, Stock Price Valuation, and Loss Causation: Toward a Corporate Finance-based Theory of Loss Causation}, 59 BUS. LAW. 1419-1445 (2004).


\textsuperscript{44} As is typically the case with allegations of fraud-in-the-inducement involving securities or interests in closely held companies with no observable market prices.
The method and the adjustments for the extent of the accounting misrepresentations described in the previous paragraph is the method I used when testifying in *Clarent* in February 2005 and have used in a number of instances in preparing plans of allocation. In *Clarent*, Judge Breyer (District Court of Northern District of California) specifically requested that the jury be provided with a framework for assessing inflation per share throughout the class period that could be adjusted depending on the specific liability findings of the jury and the jury’s determination of the amount of actionable misstatements at various times. To provide such a framework, I matched the event study analysis up with the allegations and walked the jury through how one might shave or adjust the inflation percentages over different subperiods (periods between significant inflating and corrective events) throughout the class period.

All testimony in *Clarent* (February 2005) was presented in a single trial (which I think is important in providing a context for and the significance of the liability arguments to the jury) but the jury deliberations were then bifurcated into oral arguments and deliberations regarding liability issues to be followed by oral arguments and findings regarding damage issues (determination of inflation per share). After the jury found liability against one of the defendants on more limited grounds, the damages were then resolved by the parties prior to the damages phase of the deliberations. Feedback from jurors indicated an appreciation for the approach and the flexibility, but significant concerns over the complexity and number of specific findings of inflation per share (separately for each subperiod) the jury would have to make.

In *Raytheon*, Judge Saris ultimately decided (June 2004) to allow aggregate damages testimony, but similarly wanted the jury to have the flexibility to decide, based on liability facts and evidence at trial, the extent to which particular events were corrective in nature. Thus, I provide demonstratives that indicated how aggregate damages would change as the percentage of liability associated with certain corrective events was altered in 5% increments. The Raytheon (company related) defendants settled before trial and the PriceWaterhouse Coopers defendants settled after the jury was selected but before the trial began.

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45 In contrast, the bifurcation of the liability and damages phases in the *Everex* trial (*Joan C. Howard and Charles A. Anderson, on behalf of themselves and all others similarly situated* v. *Everex Systems, Inc., and Steven L.W. Hui, et al.;* N.D. Cal.; Case No. C 92 3742 CAL), also tried before Judge Breyer, reportedly left many jurors confused as to the significance of the case and the importance of the fraud allegations. While the plaintiffs reportedly were favored on liability by the majority of the jury on the first ballots during deliberations and the decision was a close one, the jury ultimately failed to find scienter and found for the defendants.

46 Like *Everex* discussed in the prior footnote, the jury indicated that plaintiffs’ counsel provided strong evidence of gross negligence on the part of the accounting defendants, Ernst &Young, but wanted more tangible evidence to conclude scienter.

47 Including generally very positive reviews of my testimony at trial by jurors.

48 As significant fact issue in the case was the percentage of the relative stock price declines in the last part of the class period attributable to corrective information that disclosed the true extent of the prior fraud as opposed to attributable information that was not reasonably foreseeable or not reasonably related to the allegations allowed by the court to be tried.
These two cases provide some insight. In both instances, the court required me, as the plaintiffs’ damages expert, to provide a framework and preliminary calculations (within ranges and with examples) for determining damages on either a per share basis (Clarent) or an aggregate basis (Raytheon). This put me in a very comfortable role as an expert in providing guidance to the court but respecting the role of the finder of fact to ultimately make the decisions and to adjust my calculations as is necessary to conform to the findings. This was reflected in my testimony in Clarent before the judge and jury.
Aggregate damages

This is an area of dispute where there is a substantial amount of apparent disagreement as to how to proceed (whether to argue for aggregate damages at trial based on estimates provided by a trading model or arguing for determinations of inflation per share at trial and allowing the proof of claims process to determine aggregate damages). It is also an area where I am (surprisingly) agnostic and have no strong feelings either way as to which is the proper way to proceed.

Some plaintiff attorneys do not want to argue for aggregate damages at all. Other plaintiff attorneys may merely want to reserve the right to tell the jury what an estimate of aggregate damages might be but reserve the final determination of aggregate damages to the proof of claims process. Other plaintiff attorneys feel strongly that damages to the class, as a whole, are the relevant measure of damages under the law to be found by the jury (given the practical requirement that a fund must be created for the posting of bonds on appeal and from which certain expenses can be paid post-judgment).

Defense attorneys seem similarly mixed in their views. I have been involved in a number of cases where defendants agreed to allow testimony on aggregate damages at trial or at least did not contest calculations of aggregate damages (only contested liability or inflation per share). I have been in cases where defendants have argued (because of issues of offsets for settlements involving other parties) that the PSRLA somehow requires that the jury find aggregate damages (Raytheon). I’ve also been involved in cases where defendants aggressively attacked aggregate damages on principle, on legal grounds, and/or on Daubert grounds.

As a general observation, drawing on my recent experiences from the Daubert hearings and court rulings in Broadcom, Clarent (January 2005), Raytheon (May-June 2004) and Metris (November 2005), if the court concludes that the proper measure of damages are to the class as a whole and not just those class members that file valid proofs of claims or finds that, as a practical or legal matter, a finding on aggregate damages by the jury is necessary (or possibly advisable), then aggregate damages based on a trading model that is widely used by experts is often allowed. If, on the other hand, the court is convinced that aggregate damages are not the proper determination of the jury because damages are limited by the individual claims (Bell v. Fore Systems, W.D. Pen.) or a finding on aggregate damages by the jury is not necessary or is more worried about avoiding appeal issues, then aggregate damages are substantially less likely to be allowed at trial.

However, courts may and typically do consider evidence on aggregate damages in evaluating certain contested settlements (such as occurred in In re Haliburton Sec. Lit., N.D. Texas, Sep. 2004) and are likely to consider such evidence as a basis for certain interim remedies following a finding of liability in a jury trial, such as posting of a bond

49 Based on actual jury polls and mock juries, there appears to be a natural desire on the part of jurors to know how big the damages are.
for appeal or a provision of funds to cover some of the expenses incurred on behalf of the Class.

*With regard to the Daubert issues in estimating aggregate damages:*

Actually obtaining, verifying and compiling samples of trade data by individual investors is very time consuming and expensive.\(^{50}\) Indeed, the expenses of actually obtaining via discovery, verifying and cleaning and then analyzing samples of individual trade data can far exceed the typical expenses associated with hiring a set of liability and damage experts (absent such individual trade analyses). As a practical matter, therefore, with a few exceptions, actual individual trade data is not obtained or considered by damage experts prior to the proof of claims process after settlement.

A consensus among experts is that some type of accelerated trading model (typically the so-called “two-trader” or “multi-trader” model) is acceptable.\(^{51}\) It is also common to divide the non-affiliated shareholder population (shareholders not specifically excluded from the class) into institutional and non-institutional investors, where institutional investors are identified by their quarterly 13-f filings of shareholdings with the SEC and non-institutional investors are not specifically identified because they are not required and do not report their shareholdings on a regular basis. Institutional shareholdings and trade patterns are modeled based on net changes in holdings by each individual institution on a quarterly basis. The remaining non-institutional shares and trades are then assigned to the non-institutional shareholders and modeled using an accelerated trading model.

An accelerated trading model recognizes that individual purchasers and sellers of shares are not identical in their propensities to sell shares at any given time. Some non-institutional shareholders have a substantial propensity to trade or seek to profit from actively trading shares (often referred to as “short-term traders”). These short-term traders have a greater propensity to sell their shares at any given time relative to other shareholders. Other non-institutional shareholders tend to buy and hold their shares as investments (often referred to as “long-term investors”). Long-term investors tend to have a relatively lower propensity to trade, tend to ignore the daily and weekly fluctuations in share price and tend to focus more on fundamental news events.

While the ranges in propensity to trade and percentage distribution of shareholdings between short-term and long-term traders among unidentified, non-institutional shareholders can vary substantially across samples of actual trade data,\(^{52}\) one of the things

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\(^{50}\) The expenses incurred in the claims administration process are often reflective of the kinds of expenses and efforts required to perform the analysis.

\(^{51}\) Contrary to some misconceptions, the methods employed are not solely developed for litigation purposes. There is a well-developed academic and applied literature on the general methodology of estimating and/or predicting the rate of turnover within a population (referred to by various names as “hazard”, “turnover”, “lifing”, “failure rate”, or “survival” analysis, depending on the author and the specific discipline of statistics, economics, valuation, engineering or medical science). In the field of valuation, a common assignment in allocating value to assets acquired in connection with a merger or acquisition is to value a group of existing customers based on their historic and projected future turnover (“lifing”) characteristics.

\(^{52}\) The published sample summaries are limited to approximately 20 to 30 different securities cases.
that came out of my studies (of proprietary or confidential trade information) and
sensitivity tests is that once the trading model is set up to reflect the number of shares
available to trade and to reflect the net number of shares traded on each day, the variation
in the actual aggregate damage estimates across the reasonable range of distributional
assumptions is relatively modest for class periods that are at least six months or longer
(perhaps a range of error of plus or minus 10% or less for non-institutional shareholders).
One can also show by Monte Carlo simulation, actual samples of institutional trades
and/or repeated experiments that the range of error in estimating aggregate damages for
institutional shareholders is relatively finite (often under plus or minus 5% for a given set
of inflation per share assumptions and a class period in excess of six months). These
ranges of error are relatively small (in comparison with other types of expert estimates)
and can be compared favorably with range of error in estimating inflation per share
provided for by event studies. In this sense, estimates of aggregate damages based on
trading models are generally accepted by experts in the field, have been tested (although
the tests are limited in nature, in-sample tests and tend to be anecdotal), are testable and
can be shown to have a limited range of error.53

This leads me to discuss the court’s findings on the issue of aggregate damages in
Broadcom in a written opinion in June 2005. First, attorneys citing this opinion should
understand that the decision was a very narrow ruling (and a close call based on the
hearing transcript and the court’s comments at the end of the hearing) based on the
“unique facts” of the case and the comfort of the availability of a proof of claims process
as an alternative. In prior and subsequent cases, including In re Metris Sec. Lit.
(November 2005 ruling denying defendants’ motion in limine to strike my testimony on
materiality, event studies, inflation per share, economic loss and aggregate damages)
courts have ruled very differently on this same issue.54

Second, a reading of the briefs filed and the oral arguments of the attorneys on the
various legal issues and Daubert issues regarding pleading and proving aggregate
damages is very instructive. The attorneys for both sides in Broadcom made excellent
arguments and generally covered the ground.

Third, the two opposing experts offered by the defendants at the Daubert hearing had
never really worked with trading models, had never estimated aggregate damages using
trading models (would not know how to do it if they were asked by a client for an
estimate of damages for settlement purposes) and were plainly not well versed as to some

53 Finnerty and Pushner in “An Improved Two-Trader Model for Estimating Damages in Securities Fraud
features of our model are consistent with prior studies, and the data upon which the parameter estimates are
based are drawn from previously published studies. We believe that the form of the TTM [two-trader
model] proposed in this paper and the approach we have described for implementing it can satisfy the
Daubert standard for the admissibility of expert testimony because it is consistent with the available
empirical evidence and shareholder trading behavior, the error rate can be quantified, and the underlying
theory is more widely accepted among financial economists than the theories on which the alternative
models are based.”

54 See, for example, cases involving Frontier Insurance, Oxford Health, and Worldcom where aggregate
damages were allowed, notwithstanding criticisms of the models and estimates provided by experts.
of the issues (including Monte Carlo simulations) they were opining on in their declarations and at the hearing on this issue. The court was, thus, put in the position of accepting estimates of aggregate damages that had some significant range of error and where the estimates of the range of error were called into question and criticized by persons with significant academic credentials as against a proof of claim process that, at least superficially, appears to have no rate of error. Additionally, the defendants’ experts exploited the fact that the range of error at the individual level was substantially greater than the range of error in the aggregate to suggest, anecdotally and incorrectly, that the aggregate rate of error was greater than was mathematically possible. Reading the hearing transcript may lead one to conclude that, had the court concluded that damages were properly measured as aggregate damages to the class (not just those filing claims) and recognized that a proof of claims process would not provide a complete estimate of the damages to the class, then the decision might very well have been very different. Similarly, if the court had concluded that there was no better alternative (in other words, a proof of claims process was not available) then, as in *Raytheon*, the decision would have been very different.

Fourth, the opinion of the court in *Broadcom* on aggregate damages clearly indicates that estimates of aggregate damages may be very useful and relevant for a variety of legal purposes in general, including assessing the adequacy of settlements and possibly in setting a bond after a judgment where no explicit finding as to aggregate damages has been made during the trial phase. The ability of the court to fashion appropriate interim (or partial) remedies and address interim issues (such as providing for a fund for expenses post-judgment) based on such evidence of aggregate damages prior to the completion of the proof of claims process was considered and potentially allowed for by the court in *Broadcom*.

Fifth, there are some statements in the written opinion that are at variance with my understanding. My understanding is that a method need not be perfect or precise to be relevant or reasonably reliable. Precision is always relative and rarely perfect. The court was not familiar with some of the history involving some of the prior cases involving aggregate damages in securities litigation and drew inferences from rulings in certain cases that were disputed by plaintiff’s counsel. Additionally, the general acceptance of the broad method of estimating aggregated damages was established by reference to published articles by experts in the field on the subject. The more recent general acceptance and wealth of anecdotal evidence in support of methods for estimating aggregate damages was either not recognized or underemphasized. Counsel for the plaintiffs took issue with relying on the lack of general acceptance by an academic community (economists in academic institutions) that was not particularly interested in the specific application of an accepted academic methodology (survival analysis) to a

55 Ironically, a different set of defense experts more familiar with and versed in working with trading models to estimate aggregate damages and testifying frankly/honestly at the hearing would have likely altered the outcome and conclusions of the court. Because some of the testimony occurred at the hearing, the ability to draw from academic references and explain in detail conceptual errors and calculation errors of those opposing experts was limited.

narrow, applied issue (such as the estimation of aggregate damages using trading models) and ignoring the widespread and generally accepted practical use of such methods to estimate aggregate damages by experts in securities litigation.

Finally, after all the paper and briefs and hearings fighting over whether or not aggregate damages were to be determined by a jury during a trial in Broadcom, the decision was not a dispositive issue. There was simply too much gamesmanship and name calling over a legal issue that appeared to me to be relatively minor in its effect on the outcome of the case. The decision to rely on the proof of claims process might slightly reduce the amount of the settlement in some instances and defer or reduce the amount of bond a defendant might have to post after judgment in order to appeal. It does not, however, mean that the defendant wins on summary judgment and the plaintiff loses on summary judgment. The case ultimately settled, and, on September 14, 2005, the court (different judge) in Broadcom approved a settlement, approved a plan of allocation based upon my analysis and declaration and wrote an opinion over objections to portions by defendants’ counsel.

5. General Comments

I have tried to be very frank in my comments in this discussion. Here, in this final section, I may be even more frank in my comments.

First, there is a perception of asymmetry in the battle of the experts in securities litigation. Plaintiffs’ counsel is often more concerned with preserving the credibility of the experts being offered and the integrity of the case and will sometimes seek a more conservative analyses from the experts as a result. There is a perception that only a few credible, “proven” damages experts exist for plaintiff’s attorneys to call on as testifying experts in securities litigation matters and those experts have all had their bad days. As an expert in such circumstances, the focus on precision (avoiding errors in the analysis) and reducing exposure to attack often results in giving the benefit of the doubt to the defendants on certain matters where there is substantial uncertainty or discretion. At the same time, an expert cannot go too far in being conservative, because the expert will have to testify under oath and has to believe what he/she is saying. Given this, sometimes, the focus on precision means that my damage estimates are greater than either I or my client would like them to be but “they are what they are”.

On the other hand, while some in this forum may strongly disagree with me on this point, the perception is that defense attorneys can push their experts to be more aggressive and their experts can get away with losing credibility in their efforts to “take down” (attempts to win motions in limine or summary judgment) or “hurt the credibility” of the plaintiffs’ experts. Sometimes, as some of my prior comments and footnotes have hinted, experts hired by defendants have gotten away with offering opinions that were lacking in precision, based on inferior analytical methods, outside of their area of expertise, or beyond what I would view as reasonable differences of opinion for persons with the requisite knowledge and training to offer such opinions.
Given these perceptions, for long term considerations, I am turning down as much as one-quarter of the calls I get (from both the defense and the plaintiff side). Additionally, there are a number of complaints (with good liability facts) that never were filed because a preliminary analysis concluded that loss causation and/or damages were either not reasonably determinable, not sufficient to be material and/or too small to justify the expected expenses. Confidentiality and privilege considerations limit the extent to which one can discuss the times when an expert offers negative advice to a potential client and ends up declining or terminating prematurely the engagement or being employed only in a consulting role.

Second, while the legal issues may be interesting, I am mostly concerned with the implications for economic experts in securities litigation. We should be wary of experts that rely too heavily on absolute rules, take facts too literally or view all facts in absolute terms (yes or no, 1 or 0), especially when dealing with economic loss causation, materiality and statistical issues (such as event studies and criteria for statistical significance). In this regard, my concern is that attorneys, experts and courts are often entangling fact issues (including issues as to the workings of securities markets) with legal issues and making findings without the proper factual and economic underpinnings of support required to arrive at such conclusions.

Attempts to create simple absolute, literal per se rules, while possibly desirable in the abstract, are often inappropriate in areas where the fact and expert issues are complex, subtle and not easily disentangled. In this regard, the fact that there were significant declines in the appropriate market and industry indices and some of those declines help explain or are correlated with the decline in the subject company’s securities prices does not mean that one can conclude that the entire decline or nearly all of the declines in the company’s security prices were not related to and not caused by the allegations of fraud. Similarly, disclosures of disappointing financial results, reduced financial guidance, financial difficulties. News of operating problems or other adverse news may be corrective or partially corrective events even if no explicit disclosure of fraud or connection to fraud is identified in the news reports surrounding such disclosures.

Third and finally, integrity, honor, respect, courtesy and consideration are too often lost in the litigation process in these cases. I don’t believe it is appropriate for experts to place their duty first to their client and second to the court, to conveniently forget something when asked under oath or to feign ignorance. But I do believe that it is perfectly appropriate for an expert to passionately and aggressively defend his/her opinions, if honestly held. Sometimes it helps me if I try to ignore my own beliefs and opinions and try to understand how someone else from a different frame of reference might have different opinions or arrive at different conclusions. This is especially helpful in preparing to testify in court and in accepting decisions. In this regard, experts should not be constrained or penalized when they recognize valid points and criticisms offered by others and adjust their analyses to incorporate or address such valid points and criticisms. If the goal is to offer the most correct and honest opinions, then it is perfectly

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appropriate (and, in fact, an expert has a duty) to alter or supplement one’s analyses to incorporate any changes in one’s understandings or assumptions, incorporate the consequences of any legal decisions that may affect one’s opinions, and to present the most precise and accurate opinions possible.

On the other hand, there is nothing more frustrating than to read an expert report or a brief where nothing positive is admitted or said about the certain opposing expert witnesses; clearly relevant evidence and facts are ignored or misrepresented; immaterial issues are exaggerated; and/or the opinions and background of an expert (or fact witness) are misrepresented, mischaracterized, unfairly criticized or ridiculed. This is where I often find my faith in the adversarial and partisan processes diminished and have come to believe that there have to be practical and social limits to advocacy. In my experience, more often than not, such inappropriate tactics will backfire in front of a jury or invite criticism (on or off the transcript) by the court, but that does not always seem to be an impediment to those attempting such inappropriate tactics and there are times when such inappropriate tactics are, unfortunately, rewarded.