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Does the Efficient Market Theory Help Us Do Justice in a Time of Madness

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DOES THE EFFICIENT MARKET THEORY HELP US DO JUSTICE IN A TIME OF MADNESS?

William O. Fisher*

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INTRODUCTION

The efficient market hypothesis looms large in open market securities fraud cases. That hypothesis underlies the fraud-on-the-market doctrine, which permits stock buyers to proceed in these cases by class actions because the doctrine allows buyers to avoid proving that they individually relied on the defendants' allegedly false statements. The buyers satisfy the reliance element by alleging that the market for the stock was "efficient." The buyers thereby invoke a presumption that the market prices at which all class members bought the stock impounded the falsity that the defendants spoke, which is the essence of the efficient market hypothesis.

The actual effect of each false statement on a stock's price, as it fluctuated to incorporate new information within its efficient market, is often tested by an "event study." Such a study purports to isolate the impact of each false announcement on the stock's price, thereby possibly proving loss causation, materiality, and damages, as well as reliance.

This Article questions how well the efficient market theory, as applied by event studies, works in cases originating during the Internet, high-tech, and telecommunications bubble of 1998 to 2001. In doing so, the Article discusses technical and theoretical challenges to the efficient market theory. Principally, however, this Article argues that the use of the efficient market theory—and relatedly the event study methodology—is inappropriate in bubble cases for normative reasons. The normative connection between the efficient market theory—applied through event studies—and the 10b-5 elements—reliance, materiality, loss causation, and damages—presupposes that the market acts rationally. Market professionals supposedly impose that rationality through trades that reflect the professionals' view of the relationship between the price of a stock and its fundamental value. During the bubble, the market professionals imposed no such rationality, and in fact the market acted irrationally, with stock prices far away from fundamental values. These developments dissolved the link between the efficient market theory and the normative notions underlying 10b-5 elements. Accordingly, courts do not produce justice when they apply the efficient market, through event studies, to 10b-5 cases arising out of the bubble in the years 1998 to 2001.

I. IN THE BEGINNING: THE SUPREME COURT ADOPTS THE FRAUD-ON-THE-MARKET THEORY

The analysis begins with the United States Supreme Court decision that endorsed the efficient market hypothesis and held that plaintiffs could employ that hypothesis to satisfy the reliance element of 10b-5 actions when they did not individually read or hear an allegedly false statement affecting a stock's price.

A. *The Basic Decision*

In *Basic v. Levinson*,¹ a plurality of the Supreme Court² ruled that, at least under certain circumstances, plaintiffs in 10b-5 securities cases may invoke "a rebuttable presumption of reliance, supported in part by the fraud-on-the-market theory" ("FOTM").³ The Court expressly recognized that "reliance is an element of a Rule 10b-5 cause of action"⁴ but reasoned that "modern securities markets, literally involving millions of shares changing hands daily, differ from the face-to-face transactions contemplated by early fraud cases, and our understanding of Rule 10b-5's reliance requirement must encompass these differences."⁵ Then-recent empirical studies "tended to confirm [the] premise that the market price of shares traded on well-developed markets reflects all publicly available information, and, hence, any material misrepresentations."⁶ The market thereby "transmits information to the investor in the processed form of a market price" and, in doing so, "perform[s] a substantial part of the valuation process performed by the investor in a face-to-face transaction."⁷

¹ 485 U.S. 224 (1988).

² Justice Blackmun delivered the opinion of the Court, and Justices Brennan, Marshall, and Stevens joined in the ruling on the fraud-on-the-market theory. *Id.* at 225. Justice White, joined by Justice O'Connor, filed an opinion dissenting from the portion of the plurality decision addressing the FOTM issues. *Id.* at 250-63. Justices Rehnquist, Scalia, and Kennedy took no part in the consideration or decision of the case. *Id.* at 250.

³ *Id.* at 242.

⁴ *Id.* at 243.

⁵ *Id.* at 243-44.

⁶ *Id.* at 246. In the accompanying footnote, the Court referenced a district court decision—*In re LTV Sec. Litig.*, 88 F.R.D. 134, 144 (N.D. Tex. 1980)—as "citing studies," and the Court cited two articles in that same footnote. See *Basic*, 485 U.S. at 246 n.24 (citing Roger J. Dennis, *Materiality and the Efficient Capital Market Model: A Recipe for the Total Mix*, 25 WM. & MARY L. REV. 373, 374-81 (1984); Daniel R. Fischel, *Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities*, 38 BUS. LAW. 1, 4 n.9 (1982) (which the Court said also noted "literature on efficient-capital-markets theory")).

⁷ *Basic*, 485 U.S. at 244 (quoting *In re LTV Sec. Litig.*, 88 F.R.D. at 143).

Accordingly,

[a]n investor who buys or sells stock at the price set by the market does so in reliance on the integrity of that price. Because most publicly available information is reflected in the market price, an investor's reliance on any public material misrepresentations, therefore, may be presumed for purposes of a Rule 10b-5 action.⁸

The question of whether plaintiffs could employ such a presumption arose in *Basic* during the lower court's consideration of class certification.⁹ The plaintiffs sought certification of a class of investors who had sold Basic stock¹⁰ and sought that certification under *Federal Rule of Civil Procedure* 23(b)(3), which requires that common questions of law or fact "predominate" over questions particular to individual class members' claims.¹¹ The amended complaint alleged that class members sold their shares at market prices depressed by defendants' false statements.¹² If each member of the class had to prove that he or she had read one or more of the statements and relied on them in deciding whether to sell, "individual issues then would have overwhelmed the common ones," and the district court could not have certified a (b)(3) class.¹³ But with the presumption that each class member had relied on the integrity of a market price that reflected those statements, the questions of individual reliance vanished, common questions predominated, and the class was properly certified.¹⁴

⁸ *Id.* at 247.

⁹ *Id.* at 228.

¹⁰ The putative class consisted of those who sold their stock (1) after Basic's president was quoted on October 21, 1977, as saying that the company knew of no reason for heavy trading and that no merger negotiations were underway and (2) before the New York Stock Exchange ("NYSE") suspended trading in the company's stock on December 18, 1978 in response to advice from Basic that it had been approached by another company for a merger. Plaintiffs argued that Basic had misled the market by the October 21, 1977 statement and two other statements that said or suggested that the company was not negotiating a merger, because, in fact, the company was doing so. *Id.* at 227-28 & n.4. Plaintiffs contended that the allegedly false statements depressed the price of Basic stock during the class period and that class members had accordingly sold for too low a price. *Id.* at 228.

¹¹ *Id.*; FED. R. CIV. P. 23(b)(3).

¹² *Basic*, 485 U.S. at 242.

¹³ *Id.*

¹⁴ *Id.*

B. Just What Does "Efficient Market" Mean? Mechanical Versus Value Efficiency

The fraud-on-the-market theory rests on the hypothesis that well-developed securities markets are "efficient."¹⁵ The efficient market theory ("EMT") comes in three forms:

The weak form . . . postulates that a stock's price is at least substantially independent of past price performance The semi-strong form goes further, claiming "that current prices fully reflect public knowledge" Finally, the strong form . . . asserts that both public and private information are fully reflected in the price of a stock.¹⁶

By expressly referring to studies that "tended to confirm . . . that the market price of shares traded on well-developed markets reflects all publicly available information,"¹⁷ *Basic* implicitly endorsed the semi-strong form of the efficient market theory.¹⁸

The semi-strong version of the EMT makes a very modest claim—simply that the market price reflects publicly available information. At least in its simplest form, the theory does not rest on a notion that the market price is the "right" price in the sense of correctly capturing the value of a company, but simply that the price of the company's stock moves when new information relating to the company's fortunes becomes public. As Daniel Fischel and Judge Frank Easterbrook put it in an article that discussed using the efficient market theory in damages calculations:

One sometimes hears the objection that this method [of using an event study, which this Article addresses later,¹⁹ to remove market effects from price changes used to calculate overpayment for stocks]

¹⁵ In a parenthetical note after the citation to the Fischel article, the plurality referred to literature "on efficient-capital-market theory," and the Dennis article that the Court referenced included the phrase "Efficient Capital Market" in its title. See *id.* at 247 n.24.

¹⁶ Jonathan R. Macey & Geoffrey P. Miller, *Good Finance, Bad Economics: An Analysis of the Fraud-on-the-Market Theory*, 42 STAN. L. REV. 1059, 1077 (1990) (quoting JAMES H. LORIE ET AL., *THE STOCK MARKET: THEORIES AND EVIDENCE* 56 (2d ed. 1985)).

¹⁷ *Basic*, 485 U.S. at 246.

¹⁸ See *In re Res. Am. Sec. Litig.*, 202 F.R.D. 177, 189 n.12 (E.D. Penn. 2001) (recognizing that, while the Supreme Court "never used the phrase 'semi-strong,'" *Basic*'s repeated references to market prices that reflect publicly available information effectively employed "the definition of a semi-strong market"); see also Macey & Miller, *supra* note 16, at 1078 ("It is clear that the Supreme Court implicitly applied the semi-strong form of the [Efficient Capital Market Hypothesis] in *Basic*.").

¹⁹ See *infra* Part III.

assumes that the market is "efficient" in the sense that "the price always accurately represents the real value of the security," while the person raising the objection knows that the price is not always right. The objection misses the point, because the method does not assume or depend on a belief that the price is always right. The method rests on three more modest beliefs: (1) that prices change quickly in response to new information; (2) that the quick change is "unbiased" (that is, it does not systematically overshoot or undershoot the change that ultimately will be deemed merited on the basis of more leisurely contemplation of the new information); and (3) that the degree to which the price reflects the underlying economic reality does not change substantially during short periods. The method "works," for example, if prices always reflect only 50% of a given firm's "true" value; any change in the price will give an accurate representation of the marginal value of the new information, so long as this relation stays constant.²⁰

Note the importance that this passage places on the price change being "unbiased."²¹ The idea is that the securities prices—as they change in response to information—may not be the "correct" prices at any given time. But the price *changes* are not systematically too high or too low.²² And the focus is on

²⁰ Frank H. Easterbrook & Daniel R. Fischel, *Optimal Damages in Securities Cases*, 52 U. CHI. L. REV. 611, 628–29 (1985) (internal footnote added) (footnote omitted); see also Daniel R. Fischel, *Efficient Capital Markets, the Crash, and the Fraud on the Market Theory*, 74 CORNELL L. REV. 907, 920 (1989) (saying that fraud-on-the-market theory "does not posit that there is some 'true value' of an asset other than its price. On the contrary, the theory assumes that market price is the best indicia of value . . ."). Famously, Fischer Black once observed that "we might define an efficient market as one in which price is within a factor of 2 of value, i.e., the price is more than half of value and less than twice value." Fischer Black, *Noise*, 41 J. FIN. 529, 533 (1986).

²¹ See also Dennis, *supra* note 6, at 374–75 ("The model posits that the price of a security reflects all publicly available information about a firm, and that prices react almost instantaneously and in an *unbiased* manner to any new information.") (emphasis added). "Individual investors may have biased perceptions, but the market averages these variant views to form an unbiased estimate of the value of the security." *Id.* at 380.

²² One student note observed that "securities prices may not accurately reflect either the underlying fundamental value or the future selling price of the security" and that "changes in market prices will be imprecise even if the market is information efficient." Robert G. Newkirk, Comment, *Sufficient Efficiency: Fraud on the Market in the Initial Public Offering Context*, 58 U. CHI. L. REV. 1393, 1410 (1991). The author argued that "[a]t best" a security's price in an efficient market is "unbiased," and defined that term:

An unbiased estimate means that, while the market price of the security may not accurately reflect some appropriate price of the security, the amount and direction of any error in the price will be random. As an example, assuming the price which would generate a return commensurate with the riskiness of the security is \$100, the market price may be \$120, or \$80, or even \$200, due to differences in analysts' methodologies and to human inability to forecast the future. Nonetheless, over time (and over a large group of analysts), the average differences between the security's trading price and its appropriate price would be zero.

relating new information to price *change* rather than on relating the price before or after the change to some notion of a fundamental value for the stock.

This mechanical notion of an "efficient market" has come to dominate securities litigation. When the Court decided *Basic*, however, it was not clear that this would be so. *Basic* itself quoted from lower court decisions that seemed to tie the concept of an efficient market to the "value" of the stock traded in such a market.²³ The Court also quoted from the legislative history of the 1934 Act, which referred to "[t]he idea of a free and open public market [that] is built upon the theory that competing judgments of buyers and sellers as to the fair price of a security brings [sic] about a situation where the market price reflects as nearly as possible a just price."²⁴ So, the language in *Basic* would have allowed a definition of "efficient market" that limited that term to a market demonstrating not simply some immediate price reactions to information but one that, before and after such reactions, generated "fair" and "just" prices approximating the "value" of the traded stocks.

Legal scholarship recognizes that an efficient market could be defined as a market producing prices in line with the value of traded securities. As one article put it, if (1) all investors have costless access to information, (2) all are good analysts, and (3) all pay close attention to market prices and adjust their holdings appropriately, then stock prices will be "a good estimate of investment value" in the sense that "the price of a stock [will be] equal to the present value of the expected discounted cash flows from the stock to investors who own it."²⁵ But commentators recognize as well that a market can be

Id. at 1410-11; see Fischel, *supra* note 20, at 910 ("The efficient capital markets hypothesis posits that stock prices quickly reflect information without bias.").

²³ The Court quoted a passage from *In re LTV Sec. Litig.*, 88 F.R.D. 134, 143 (N.D. Tex. 1980), in which the LTV court offered that the market "perform[s] a substantial part of the valuation process performed by the investor in a face-to-face transaction. The market is acting as an unpaid agent of the investor, informing him that given all the information available to it, the value of the stock is worth the market price." *Basic v. Levinson*, 485 U.S. 224, 244 (1988). *Basic* also quoted *Peil v. Speiser*, 806 F.2d 1154, 1161 (3d Cir. 1986), where *Peil* said that in an "open and developed market . . . purchasers generally rely on the price of the stock as a reflection of its value." *Basic*, 485 U.S. at 244.

²⁴ *Basic*, 485 U.S. at 246 (quoting H.R. REP. NO. 1383, at 11).

²⁵ Jonathan R. Macey et al., *Lessons from Financial Economics: Materiality, Reliance, and Extending the Reach of Basic v. Levinson*, 77 VA. L. REV. 1017, 1022 (1991). The authors provided a formula for computing the value of stock, assuming an infinitely long-lived issuer and constant dividends: $P_0 = \text{DIV}/r$, where P_0 is the stock price in the current period, DIV is the constant dividend, and r is the discount rate, which is equal to the expected return on other stocks with equal risk. *Id.* at 1022-23. A more recent article makes the same point that "[c]orporate finance theory holds that the stock price of a company reflects the market's estimation of the company's future cash flows, discounted back to the present at the company's cost of capital." Jay W. Eisenhofer et al., *Securities Fraud, Stock Price Valuation, and Loss Causation: Toward a*

“efficient” in the sense of responding to information—what this Article calls “mechanical efficiency”—without being “efficient” in the sense of generating prices reflecting fundamental values calculated by risk and expected return—what this Article calls “value efficiency.”²⁶

Corporate Finance-Based Theory of Loss Causation, 59 BUS. LAW. 1419, 1421 (2004). The article also provided formulae for valuing by (1) anticipated cash flow and terminal value, and (2) dividends. *Id.* at 1422–23. Others made the same point, albeit without a formula for determining value. One student comment said:

Efficiency in this context means that all economically relevant public information about a publicly-traded security is rapidly absorbed by investment professionals and immediately reflected in the price of that security in an unbiased fashion. Because the stock market is efficient, the price of a security is an adequate reflection of its worth.

Russell Robinson, Comment, *Fraud-on-the-Market Theory and Thinly-Traded Securities Under Rule 10b-5: How Does a Court Decide if a Stock Market Is Efficient?*, 25 WAKE FOREST L. REV. 223, 224 (1990). And a law professor observed, “where many competing experts analyze the same information, trading induced by analysts will bring a particular security’s price promptly to a dynamic equilibrium point. This price should represent the security’s intrinsic value.” Dennis, *supra* note 6, at 379.

²⁶ Macey et al., *supra* note 25, at 1027, observed that “[c]apital markets are surely inefficient” and that theoretical efficiency is “an extreme null hypothesis, a point on a continuum” Macey urged courts to concentrate simply on whether information affected price, not whether the market for a stock was “efficient.”

Lynn Stout points to the difference between “informational efficiency,” which is so swift a reaction of price to information that a trader cannot make money by buying or selling based on new information, and “fundamental value” efficiency, which is present if “stock prices respond to available information not only quickly but accurately, so that market prices mirror the best possible estimates, in light of all available information, of the actual economic values of securities in terms of their expected risks and returns.” Lynn A. Stout, *The Mechanisms of Market Inefficiency: An Introduction to the New Finance*, 28 J. CORP. L. 635, 640 (2003). Stout says that “the two [concepts] can be, and often are, made to go hand-in-hand, with fundamental value efficiency flowing naturally from informational efficiency.” *Id.* at 641. She writes that the traditional link between the two is the Capital Asset Pricing Model (“CAPM”), which “posits that investors value securities according to only two criteria: expected return and nondiversifiable (or market) risk.” *Id.* But CAPM, Stout continues, rests on the false assumption “that all investors share homogen[e]ous expectations regarding the likely future returns and risks associated with particular securities.” *Id.* at 641–42. Presaging the discussion in Part V of this Article, Stout also contends that limits on arbitrage can delay market reaction to news or result in an incomplete reaction and that behavioral finance has demonstrated the irrationality of at least some investors. She concludes that “the evidence at this point does not support the close correlation between price and value predicted by orthodox efficient markets theory.” *Id.* at 667.

Others have made this same observation—that there is a difference between information efficiency and value efficiency. See Newkirk, *supra* note 22, at 1398 (“[I]nformation efficiency does not necessarily imply that prices are always accurate reflections of the intrinsic value of a security. For instance, information unrelated to the issuer’s future financial performance may also affect prices. The market could then be information efficient, though not value efficient.”). Even Fischel, who was probably one of the most influential forces in the shift of securities litigation analysis to its present heavy dependence on efficient market analysis, has recognized the difference between these two definitions of “efficiency.” Fischel, *supra* note 20, at 912–15. But Fischel argues that, since “no direct method exists for testing how closely prices reflect value because the ‘value’ of an asset cannot be measured apart from its price,” there is no “better model . . . for ascertaining the value of a publicly-traded firm’s assets than looking at the prices of its securities.” *Id.* at 914. Accordingly, he sees a “critical role [for] market prices as a proxy for underlying values.” *Id.* at 915.

Subsequent to *Basic*, many, if not most, decisions have adopted the simplest, mechanical definition of the efficient market for use in securities litigation. For these decisions, a market is efficient if price promptly reacts to new and unexpected information. These decisions do not require that, in order to be efficient, the market price have some defined relationship to a fundamental value—such as discounted cash flow—either before or after the reaction occurs. The reaction itself constitutes the efficiency. Nevertheless, courts posit that sophisticated market professionals drive the reaction and that the role those professionals play may link mechanically efficient price reaction to value efficiency.

C. The Importance of Market Professionals in Efficient Market Theory

The Supreme Court explicitly noted the role of “market professionals” in setting securities prices. When the Court referenced the “empirical studies” tending to confirm that prices of shares traded in well-developed markets reflect all publicly available information, the plurality observed that the decisive role these professionals play was a critical factor in adopting the FOTM presumption.

We need not determine by adjudication what economists and social scientists have debated through the use of sophisticated statistical analysis and the application of economic theory. For purposes of accepting the presumption of reliance in this case, *we need only believe that market professionals generally consider most publicly announced material statements about companies, thereby affecting stock market prices.*²⁷

It is precisely the dominating role of the market professionals that permits aficionados of mechanical efficiency to argue that a current stock price—although it might not be “right” in some abstract sense—is the “best estimate of what the price will be in the future,”²⁸ which, at least from the investor’s point of view, will be the stock’s value in the future. It is the action of the professionals that, in fact, translates new information into a new market price. Here is how the adherents to mechanical efficiency say the process works:

If the price of a stock at any given time is not “right” in relation to the price that the stock will have once people wise up [to the existence or importance of new information], then arbitrageurs can make a lot of

²⁷ *Basic*, 485 U.S. at 247 n.24 (emphasis added).

²⁸ Fischel, *supra* note 6, at 4 n.9.

money by buying “undervalued” stocks, selling “overvalued” ones, spreading the news, and selling once the price gets to the appropriate level. The more astute the arbitrageurs and other market professionals, and the more quickly they can move capital into and out of particular holdings, the faster this process will occur. The process eventually makes it difficult even for professional traders to make money, unless they are the first to obtain and act on information.²⁹

This means that, at least sometimes, the market will be momentarily inefficient. But small and transient inefficiencies give market professionals incentive to look for temporary bargains and make (or cause others to make) the trades that will put prices right.³⁰

D. Market Professionals as the Link to Value Efficiency Justifying the Use of Efficient Market Theory To Dispense Justice in Cases Decided by the Courts

In a sense, this explanation—that prices change in response to the actions of shrewd professionals assessing new information—is unnecessary. Economists and finance experts can prove that stock prices move in response to new information—virtually the only claim that the semi-strong EMT makes in its simplest and mechanical form—through the “sophisticated statistical analysis” to which the justices referred.³¹

But it is nevertheless comforting to have an explanation of *why* prices move: Market professionals play a determining role in generating unbiased price reactions to news. The explanation says that, even if the individual investor does not read or hear (and hence does not individually rely on) a misrepresentation, the misrepresentation reaches the eyes or ears of the pros, who constantly watch and listen. They, in turn, make their trades (or cause others to make trades) and move the price of each stock. The individual investor—who does not have the time or expertise to seek out information and

²⁹ Easterbrook & Fischel, *supra* note 20, at 629.

³⁰ Daniel R. Fischel, *Insider Trading and Investment Analysts: An Economic Analysis of Dirks v. Securities and Exchange Commission*, 13 HOFSTRA L. REV. 127, 143 (1984) (“[S]ome information must not be reflected in stock prices to ensure that informed traders earn a competitive return for search, in terms of trading profits, from possession of superior information . . .”).

³¹ *Basic*, 485 U.S. at 247 n.24. As one student comment put it: “The [Efficient Capital Markets Hypothesis (“ECMH”)] is a descriptive theory. The ECMH asserts only that a market price quickly incorporates all relevant information; it does not explain what information is relevant to the market price or why the price changes in response to the information.” Newkirk, *supra* note 22, at 1398.

analyze each stock anyway—rationally relies on the integrity of the market that sets unbiased prices through the actions of these professionals.³² This explanation is particularly attractive if the professionals are making their trading decisions and recommendations based on at least *some* analysis of fundamental values and changes in those values that new information implies.³³ The professionals' use of such analysis effectively links mechanical efficiency to value efficiency.

In considering this paradigm, it is important to remember that the Court was not conducting a finance class when it wrote the *Basic* decision. It was

³² Fischel argued that there are two classes of investors. There are "market professionals" who will have a comparative advantage in obtaining and interpreting relevant information. Because of this comparative advantage, actors in this class have an incentive to invest in gathering and analyzing information and to take actions to affect the market price
 . . . The other class of investors, with no advantage in predicting future states, has no incentive to invest in information gathering; these investors would be wasting their money by doing so. Their best course is to accept the market price as given.

Fischel, *supra* note 6, at 4–5 (footnote omitted). Fischel added, however, that the class of nonprofessional investors could still be defrauded, even if professionals controlled price changes:

This is not to suggest, however, that investors who accept the market price will never be misled. There is no guarantee that the price of a firm's stock will incorporate only accurate information. If relevant information is withheld from the market, or if incorrect information is disseminated, the price of stock will be mispriced, causing some investors to be injured. To illustrate with an obvious example, if stock is trading at 10 at a time when it would be trading at 5 if negative information about the firm were disclosed, then all purchasers who bought at 10 but could only sell at 5 after the information became known suffered an injury.

Id. at 5.

³³ Some theorists argue that the actions of market professionals bring prices close to fundamental values. See *supra* note 25. Some courts make that argument as well. See, e.g., *Stepak v. Aetna Life & Cas. Co.*, 1994 WL 858045, at *22 n.16 (D. Conn. Aug. 29, 1994) (quoting a portion of the *Verifone* passage that follows), *aff'd*, 52 F.3d 311 (2d Cir. 1995) (unpublished table decision); *In re Verifone Sec. Litig.*, 784 F. Supp. 1471, 1479 (N.D. Cal. 1992) ("The professional traders analyze information about securities, and the trading activity of these knowledgeable investors pushes the price of the security toward a value which reflects all publicly available information. In this way, securities prices on the national exchanges reflect (albeit imperfectly) the expected future cash flows from the security."), *aff'd*, 11 F.3d 865 (9th Cir. 1993); see also *In re Oracle Sec. Litig.*, 829 F. Supp. 1176, 1181 (N.D. Cal. 1993) ("[U]nder the efficient capital market hypothesis endorsed by the plurality in *Basic*, a security's value does not fluctuate with reported earnings, but varies instead with the discounted value of future cash flows which are expected to accrue to the security . . ."). Note that Fischel does not insist on this connection, as he distrusts any measure of "value" other than market price. See *supra* notes 20, 26. Nevertheless, even Fischel says that he

do[es] not mean to suggest that prices are always the best predictor of underlying values or that there is never any role for other methods of valuation such as discounted cash flow analysis. Analysts and other market professionals constantly search for mispriced securities where prices do not reflect information concerning value.

Fischel, *supra* note 20, at 915.

deciding an issue in one case and setting out principles that lower courts would use to decide issues in other cases. The economics would have legal consequences—up to and including the transfer of money from some parties to others.

As this Article develops later, the elements to which the efficient market theory is applied in a 10b-5 case reflect normative considerations. But, stepping back from that important but more technical point, it is always important for legal rules to make common sense when courts use them to transfer money.

Considered from this perspective, the fraud-on-the-market theory is not only internally consistent, but it is comfortably rational as well. Sure, the market may not set the “right” price for stocks at any one time. The changes in prices from time to time may not even be “correct” according to some abstract criteria. But with professionals crunching the numbers, disseminating their findings into the market, and setting unbiased prices that approximate the fundamental values the professionals compute, we are comfortable using this theory to determine who owes what to whom in a court of law.

II. *BASIC* APPLIED: THE FACTORS THAT COURTS REVIEW TO DETERMINE WHETHER A MARKET IS “EFFICIENT” SO THAT THE FRAUD-ON-THE-MARKET THEORY WILL BE USED

Basic endorsed a rebuttable presumption of reliance on the integrity of a stock’s market price, in a 10b-5 case, where the security that a plaintiff bought or sold traded in a “well-developed market.”³⁴ The plurality, in a footnote, referenced “the assumption that *Basic* shares are traded on a well-developed, efficient, and information-hungry market.”³⁵ The opinion also referenced (apparently with approval) the holding of the court of appeals that, in order to enjoy the presumption of reliance on the market, a plaintiff would have to plead and prove, among other things, “that the shares were traded on an efficient market.”³⁶

³⁴ *Basic*, 485 U.S. at 247.

³⁵ *Id.* at 249 n.29 (emphasis added).

³⁶ *Id.* at 248 n.27.

A. *The Cammer Factors, and a Few Others as Well*

Unfortunately the Supreme Court did not say *how* to determine whether the market for a security was “efficient.”³⁷ Lower courts have addressed that question on motions for class certification,³⁸ summary judgment,³⁹ and

³⁷ *Basic* involved a stock that was publicly traded at the time of the alleged fraud. See *supra* note 10. One theory suggests that a plaintiff can recover, under some circumstances, when the plaintiff bought a security in an offering and the security was not traded prior to that offering—even though the plaintiff did not personally read or hear a misrepresentation. See, e.g., *Shores v. Sklar*, 647 F.2d 462, 469 (5th Cir. 1981) (“The requisite element of causation in fact would be established if [the plaintiff] proved the scheme was intended to and did bring the Bonds onto the market fraudulently and proved he relied on the integrity of the offerings of the securities market. His lack of reliance on the Offering Circular, only one component of the overall scheme, is not determinative.”), *cert. denied*, 459 U.S. 1102 (1983). This idea is sometimes called the “fraud created the market” theory, but it has not enjoyed universal acceptance. 3 THOMAS L. HAZEN, *THE LAW OF SECURITIES REGULATION* § 12.10[6][C], at 349–50 (5th ed. 2005). This Article will not address that theory.

³⁸ In these cases, the question was whether plaintiffs made a sufficient showing of an efficient market so that they were entitled, at least at the class certification stage, to a rebuttable presumption of reliance that would support a (b)(3) class. The following citations include the pages on which the fraud-on-the-market discussion lies. See *Binder v. Gillespie*, 184 F.3d 1059, 1064–65 (9th Cir. 1999) (affirming decertification of class); *In re Initial Pub. Offering Sec. Litig.*, 2004 WL 2297401, at *30–31 (S.D.N.Y. Oct. 13, 2004) (granting motion for class certification in part); *Lehocky v. Tidel Tech., Inc.*, 220 F.R.D. 491, 504–09 (S.D. Tex. 2004) (granting motion to certify); *Cheney v. Cyberguard Corp.*, 213 F.R.D. 484, 496–502 (S.D. Fla. 2003) (same); *In re Res. Am. Sec. Litig.*, 202 F.R.D. 177, 188–91 (E.D. Penn. 2001) (same); *Krogman v. Sterritt*, 202 F.R.D. 467, 473–78 (N.D. Tex. 2001) (denying motion to certify); *Griffin v. GK Intelligent Sys., Inc.*, 196 F.R.D. 298, 303–04 (S.D. Tex. 2000) (same); *Serfaty v. Int’l Automated Sys.*, 180 F.R.D. 418, 420–23 (D. Utah 1998) (same); *O’Neil v. Appel*, 165 F.R.D. 479, 495–505 (W.D. Mich. 1996) (same, with court adopting the magistrate judge’s report and recommendations); *Hoexter v. Simmons*, 140 F.R.D. 416, 418–19 (D. Ariz. 1991) (granting motion to certify as to federal claims); *In re AmeriFirst Sec. Litig.*, 139 F.R.D. 423, 429–31 (S.D. Fla. 1991) (granting motion to certify); *Harman v. LyphoMed, Inc.* 122 F.R.D. 522, 525–26 (N.D. Ill. 1988) (same). In a recent decision, the Fourth Circuit held that plaintiffs cannot prevail on a motion to certify a (b)(3) class in a 10b-5 case simply by asserting that the market for the security that they bought or sold was efficient. The district court must go beyond the allegations to find that the market was efficient, albeit by a finding that will not bind a jury if the case goes to trial. *Gariety v. Grant Thornton, LLP*, 368 F.3d 356, 361–68 (4th Cir. 2004). The Fifth Circuit reached a similar conclusion in *Unger v. Amedisys Inc.*, 401 F.3d 316 (5th Cir. 2005). Neither the cases cited in this note, nor those in the next two notes, constitute an exhaustive list of the opinions wrestling with whether a market is “efficient” in the procedural posture referenced by the respective note.

³⁹ In these cases, the question was whether plaintiffs raised a triable issue as to reliance. Again, the citations include the pages on which the FOTM discussion lies. *Freeman v. Laventhol & Horwath*, 915 F.2d 193, 198–99 (6th Cir. 1990) (reversing denial of defense motion for (1) partial summary judgment on claims for fraud on the market in issuing municipal bonds or (2) in the alternative to dismiss those claims); *Miller v. NTN Communications, Inc.*, 1999 WL 817217, at *9–11 (S.D. Cal. May 21, 1999) (denying defense motion for summary judgment); *Alter v. DBLKM, Inc.*, 840 F. Supp. 799, 804–05 (D. Colo. 1993) (ruling that fraud-on-the-market theory did not apply to a thin secondary market for development bonds but permitting 10b-5 claims to proceed on other reliance theories); *Cammer v. Bloom*, 711 F. Supp. 1264, 1275–93 (D.N.J. 1989) (denying auditor’s motion to dismiss 10b-5 claim, which the court treated as a motion for summary judgment).

dismissal.⁴⁰ Judge Lechner's *Cammer v. Bloom*⁴¹ opinion is by far the most influential decision.⁴²

Cammer set out five factors that courts should consider in determining whether a market for a security is sufficiently "efficient" that plaintiffs do not need to prove individual reliance on defendants' alleged misrepresentations but may instead enjoy a presumption that they relied on the integrity of the market:

- *Percentage of shares traded weekly.* In *Cammer*, the court reasoned that a "large weekly volume of stock trades . . . implies significant investor interest in the company," which, "in turn, implies a likelihood that many investors are executing trades on the basis of newly available or disseminated corporate information."⁴³ *Cammer* cited a legal treatise for the view that "[t]urnover measured by average weekly trading of 2% or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; 1% would justify a substantial presumption."⁴⁴
- *Analyst following.* Judge Lechner concluded that, if "a significant number of analysts" follow and report on a company's stock during the period of an alleged fraud, that fact would imply that information about the company was being "reviewed by investment professionals, who would make buy/sell recommendations to client investors" so that

⁴⁰ In these cases, the question was whether the complaint alleged facts from which it could at least be inferred under applicable pleading rules that the security traded in an efficient market. Once more, the citations include the pages on which the opinion addresses FOTM criteria. *Hayes v. Gross*, 982 F.2d 104, 107 (3d Cir. 1992) (reversing dismissal); *Blatt v. Muse Tech., Inc.*, 2002 WL 31107537, at *12–15 (D. Mass. Aug. 27, 2002) (denying motion to dismiss); *In re 2TheMart.com, Inc. Sec. Litig.*, 114 F. Supp. 2d 955, 963–65 (C.D. Cal. 2000) (same); *In re Turbodyne Tech., Inc. Sec. Litig.*, 2000 WL 33961193, at *12–14 (C.D. Cal. Mar. 15, 2000) (granting motion to dismiss for plaintiffs' failure to plead facts sufficient to invoke the fraud-on-the-market presumption); *Greenberg v. Boettcher & Co.*, 755 F. Supp. 776, 780–83 (N.D. Ill. 1991) (granting motion to dismiss). This Article does not address the application, to allegations concerning an efficient market, of rules requiring that plaintiffs plead fraud with particularity.

⁴¹ 711 F. Supp. 1264.

⁴² At least five Courts of Appeals have cited *Cammer's* analysis with approval. See *Unger*, 401 F.3d at 323 (also noting with approval other factors indicating market efficiency, which this Article discusses *infra* at notes 52–56 and accompanying text); *Gariety*, 368 F.3d at 368; *Binder*, 184 F.3d at 1064–65; *Hayes*, 982 F.2d at 107 n.1; *Freeman*, 915 F.2d at 198–99. Many district courts outside these circuits have also relied on *Cammer*. See, e.g., *Cheney*, 213 F.R.D. at 497–500; *Serfaty*, 180 F.R.D. at 421–22; *Greenberg*, 755 F. Supp. at 782; see also *In re Initial Pub. Offering Sec. Litig.*, 227 F.R.D. 65, 107, n.323 (S.D.N.Y. 2004) (citing *Cammer* and relying on it in part).

⁴³ *Cammer*, 711 F. Supp. at 1286.

⁴⁴ *Id.* (citing ALAN R. BROMBERG & LEWIS D. LOWENFELS, BROMBERG AND LOWENFELS ON SECURITIES FRAUD & COMMODITIES FRAUD § 8.6 (1988)). All citations to the Bromberg and Lowenfels treatise are to the pages in § 8.6 that are dated August 1998, as those are the pages that *Cammer* cited. See *id.* at 1276 n.17.

"the stock would be bid up or down to reflect the . . . information . . . as interpreted by securities analysts."⁴⁵

- *Market makers.* *Cammer* said that the "existence of market makers and arbitrageurs" will "ensure completion of the market mechanism" as these participants will "react swiftly to company news . . . by buying or selling stock and driving it to a changed price level."⁴⁶
- *Issuer qualification for use of an S-3 registration statement.* The SEC created the S-3 form in order to permit certain companies to avoid repeating, in registration statements for new issues, information that the companies had already included in periodic reports under the Securities Exchange Act of 1934. The Commission expressly stated that such an abbreviated filing sufficed because the market for securities issued by companies qualifying for S-3 filings was efficient.⁴⁷ When Judge Lechner authored *Cammer*, a company qualified to use an S-3 filing for an equity offering if, among other things, nonaffiliates held at least \$150 million of the company's voting stock, or nonaffiliates held at least \$100 million of such stock and at least three million shares of that stock traded annually.⁴⁸ *Cammer*

⁴⁵ *Id.* at 1286. *Cammer* did not say what number of analysts would be "significant" for this purpose.

⁴⁶ *Id.* at 1286-87.

⁴⁷ Here Judge Lechner quoted from an SEC proposing release saying,

Proposed Form S-3 recognizes the applicability of the efficient market theory to the registration statement framework with respect to those registrants which usually provide high quality corporate reports, including Exchange Act reports, and whose corporate information is broadly disseminated, because such companies are widely followed by professional analysts and investors in the market place.

Id. at 1284-85 (quoting SEC Release No. 33-6331, *available at* 1981 WL 30765, at *5 (Aug. 6, 1981)).

In its adopting release, the Commission said: "Form S-3, in reliance on the efficient market theory, allows maximum use of incorporation by reference of Exchange Act reports and requires the least disclosure to be presented in the prospectus and delivered to investors." SEC Release 33-6383, *available at* 1982 WL 90370, at *5 (Mar. 16, 1982). Instead of filing a full 1933 Act registration statement for a new issue of securities (that would contain elaborate descriptions of the company and its products together with complete financial statements), an eligible company can file a Form S-3 registration statement

primarily describing the securities issuance and recent material changes and then . . . incorporat[ing] by reference the following: (1) its latest Form 10-K . . . annual report, (2) all other 1934 Act reports filed pursuant to § 13(a) or 15(d) since the end of the fiscal year covered by the annual report, [and] (3) if capital stock is to be registered and the same class is registered under § 12 of the 1934 Act, a description of the class of securities that is contained in a registration statement filed under the 1934 Act, including amendments or reports filed to update the description.

2 LOUIS LOSS & JOEL SELIGMAN, SECURITIES REGULATION 619 (3d ed. rev. 1999).

⁴⁸ *Cammer*, 711 F. Supp. at 1271 n.5.

found that “it is the number of shares traded and value of shares outstanding that involve the facts which imply efficiency.”⁴⁹ While the S-3 eligibility rules changed a number of years after Judge Lechner published *Cammer*, courts continue to use qualification to file on the S-3 form as a factor in determining whether to apply the FOTM presumption.⁵⁰

- *Price response to new information.* *Cammer* observed that it would be “helpful” to a plaintiff seeking to invoke the presumption “to allege empirical facts showing a cause and effect relationship between unexpected corporate events or financial releases and an immediate response in the stock price” because “[t]his, after all, is the essence of an efficient market and the foundation for the fraud on the market theory.”⁵¹

⁴⁹ *Id.* at 1287.

⁵⁰ In 1992, the Commission amended the requirements for S-3 filing by reducing the required “float” (the dollar value of securities held by nonaffiliates) for primary cash offerings of equity securities from \$150 million to \$75 million, eliminating the trading volume test and reducing the period during which the issuer had to have filed 1934 Act reports from thirty-six to twelve calendar months. In 1997, the Commission further amended the rules to permit nonvoting, as well as voting, common stock to count towards the float number. See 2 LOSS & SELIGMAN, *supra* note 47, at 614–17 & n.47; see also SEC Release 33-6943, available at 1992 WL 172787 (July 16, 1992); SEC Release 33-6949, available at 1992 WL 312442 (Oct. 22, 1992); SEC Release 33-7326, available at 1996 WL 493302 (Aug. 30, 1996); SEC Release 33-7419, available at 1997 WL 232555 (May 8, 1997). Neither the SEC’s proposing releases for these changes nor the adopting releases used the term “efficient market.”

While some defendants have argued that the changes meant that qualification for use of a Form S-3 should no longer be considered when determining whether an issuer’s stock traded in a market sufficiently efficient so that buyers and sellers should enjoy a presumption of reliance, the courts have rejected that view. See *Krogman v. Sterritt*, 202 F.R.D. 467, 476–77 (N.D. Tex. 2001) (“Several cases subsequent to *Cammer* and the modifications to S-3 eligibility have held that S-3 eligibility is still an important factor in determining market efficiency. This Court concurs . . .”) (citations omitted); see also *Unger v. Amedysis Inc.*, 401 F.3d 316, 323 (5th Cir. 2005) (expressly referencing S-3 eligibility as a factor); *Gariety v. Grant Thornton, LLP*, 368 F.3d 356, 368 (4th Cir. 2004) (same).

⁵¹ *Cammer*, 711 F. Supp. at 1287. Although *Cammer* did not define how quickly an “immediate” price response should occur in an efficient market, decisions suggest that an efficient market will change a price in response to news in a matter of one or two days (unless the significance of the news is so obscure that the market does not appreciate it until an interpretive analysis appears, in which case an efficient market should adjust within one or two days of the appearance of that analysis). See, e.g., *Krogman*, 202 F.R.D. at 477 & n.14 (stating that “in an efficient market, a stock’s price remains relatively stable in the absence of news, and changes very rapidly as the market receives new and unexpected information”; crediting a defense expert who testified that an efficient market should adjust price in no more than two days; and rejecting the analysis of a plaintiff expert who argued that the impact of news on the price of a stock such as that involved in *Krogman* would typically last seven to ten days, because “such a lengthy time frame is inconsistent with the concept of market efficiency”); see also Fischel, *supra* note 6, at 18 n.49 (citing studies finding “that new information is capitalized in stock prices no later than the day of the release”). But note that the Supreme Court expressly said in *Basic* that it did “not intend conclusively to adopt any particular theory of how quickly and completely publicly available information is reflected in market price.” *Basic v. Levinson*, 485 U.S. 224, 249 n.28 (1988).

Some decisions⁵² analyze additional factors that might bear on whether the market for a particular security is "efficient":

- *Market capitalization.* Large capitalization "may be an indicator of market efficiency because there is a greater incentive for stock purchasers to invest in more highly capitalized corporations,"⁵³ and "[l]arge firm size and dollar trading volume tend to reflect the magnitude of economic incentive to eliminate mispricing."⁵⁴
- *Bid-ask spread.* "A large bid-ask spread is indicative of an inefficient market, because it suggests that the stock is too expensive to trade."⁵⁵
- *Percentage of stock held by insiders.* The lower the percentage held by insiders, the higher the percentage held by those who buy and sell only on publicly available information and, accordingly, the greater the prospect for market efficiency.⁵⁶
- *Institutional investors.* The greater the trading by institutional investors run by professionals, the more likely the stock trades efficiently.⁵⁷

⁵² *O'Neil v. Appel*, 165 F.R.D. 479, 503 (W.D. Mich. 1996), discussed these factors, which have been used in later decisions as well. See, e.g., *Unger*, 401 F.3d at 323; *Cheney v. Cyberguard Corp.*, 213 F.R.D. 484, 501–02 (S.D. Fla. 2003); *Krogman*, 202 F.R.D. at 477–78; *Serfaty v. Int'l Automated Sys.*, 180 F.R.D. 418, 423 (D. Utah 1998).

⁵³ *Krogman*, 202 F.R.D. at 478. Market capitalization is "calculated as the number of shares multiplied by the prevailing share price." *Id.*

⁵⁴ *O'Neil*, 165 F.R.D. at 503. Recently, *In re Polymedica Corp. Sec. Litig.*, 224 F.R.D. 27 (D. Mass. 2004), purported to reject the definition of efficient market advanced by *Cammer* and to read *Basic* as teaching that an efficient market is simply "one in which 'market professionals generally consider most publicly announced material statements about [the issuer], thereby affecting [the] stock market price[.]'" *Id.* at 41–42 (quoting *Basic*, 485 U.S. at 246 n.24). But *Polymedica* then went on to find the market for the stock in that case efficient by examining many of the same factors referenced in this Article's text: (1) the cause-and-effect relationship between unexpected news and immediate stock price response, (2) average weekly trading volume (there equal to about 10% of the shares outstanding), (3) the number of analysts following *Polymedica*, (4) the number of market makers for the stock, and (5) the company's market capitalization. See *id.* at 43.

⁵⁵ *Krogman*, 202 F.R.D. at 478 (citing expert). The spread is "the difference between the price at which investors are willing to buy the stock and the price at which current stockholders are willing to sell their shares." *Id.*

⁵⁶ *Id.*

⁵⁷ *Cammer* itself referenced the number of institutional holders but did not make this one of the factors on which the opinion relied to determine market efficiency. 711 F. Supp. at 1283 n.30 (citing and quoting *BROMBERG & LOWENFELS*, *supra* note 44, § 8.6). A number of later decisions take this factor into account, often because an expert in the case relied upon it. See, e.g., *Lehocky v. Tidel Tech., Inc.*, 220 F.R.D. 491, 508 (S.D. Tex. 2004) (stating that an expert "noted the existence and level of institutional investors and their holdings during the class period . . . [and] stated [that] there is a general understanding that a high level of institutional interest in a security serves to increase the efficiency of the market"); *Serfaty*, 180 F.R.D. at 423 (observing that an expert saw the circumstance that only one institutional investor held the stock as an

B. Whether the Factors Are Consistently Applied and Whether They Make Sense

The factors to which courts look to determine whether a market is efficient raise many questions. One important query is whether courts can realistically and fairly employ these factors to identify those stocks that trade efficiently, even in only a mechanical sense. Several circumstances suggest that the courts cannot.

Courts cannot apply the factors in a uniform way because (1) there seems to be no universally accepted number or particular combinations of factors which, if present, require a holding that a market is efficient, and (2) many of the factors (such as the number of analysts following a stock, the number of market makers, and market capitalization) can themselves take on a wide range of values, with no universally accepted cutoffs to determine when each such factor contributes, or does not contribute, to a finding of efficiency.⁵⁸

additional factor suggesting that the stock did not trade efficiently); *O'Neil*, 165 F.R.D. at 503 (saying that the economic literature suggested that interest of institutional investors tended to demonstrate market efficiency).

Courts have also considered whether the circumstance that a stock trades on an exchange, or through NASDAQ, should contribute to a finding of efficiency. Early decisions held or suggested that stocks trading off-exchange (e.g., through the "pink sheets" in over-the-counter trading) could not be traded so efficiently as to justify a presumption that their prices reflected public information. *Epstein v. Am. Reserve Corp.*, 1988 WL 40500, at *5 (N.D. Ill. 1988) ("[W]e believe that the over-the-counter market is incapable of meeting the [Basic] test."). But that view has not survived. See *Binder v. Gillespie*, 184 F.3d 1059, 1065 (9th Cir. 1999) (collecting cases). Again, *Cammer* led the way, holding that the efficiency of trading in a particular security was the key, not the venue of the transactions. 711 F. Supp. at 1281; see also authorities cited *infra* note 78.

⁵⁸ One author examines a number of decisions, constructs a table of the *Cammer* factors referenced in those opinions, and concludes that the set "suggests some variability . . . in the courts' adjudications of efficiency." Geoffrey C. Rapp, *Proving Markets Inefficient: The Variability of Federal Court Decisions on Market Efficiency in Cammer v. Bloom and Its Progeny*, 10 U. MIAMI BUS. L. REV. 303, 316 (2002); *id.* at 328 (table). Another article reviews several cases and concludes:

Depending on which approach a court takes, and the procedural posture of the particular case, most courts will come to very individual conclusions concerning whether a particular stock traded in an efficient manner. Some courts place weight on the existence of market makers, while others do not. Again, while some courts place great weight on the weekly trading volume of a stock, other courts gloss over this factor or defer it to another day. Finally, some courts give great weight to a showing that there is a cause and effect relationship between the announcement of company-specific news and the price of a particular stock. On the other hand, some courts, despite some evidence of a cause and effect relationship, find it important to understand whether or not the stock fluctuated or behaved in a volatile manner. The lack of readily definable factors that might show market efficiency has truly created a massive hodgepodge of cases and outcomes.

Paul A. Ferrillo et al., *The "Less Than" Efficient Capital Markets Hypothesis: Requiring More Proof from Plaintiffs in Fraud-on-the-Market Cases*, 78 ST. JOHN'S L. REV. 81, 102 (2004). Ferrillo and his coauthors set

Even when courts establish cutoff values, as when Judge Lechner set out the levels of weekly trading that he identified as relevant to an efficient market (2% or more of outstanding stock creating a strong presumption of efficiency and 1% a substantial presumption), there has been little to recommend the values chosen. Thus, Judge Lechner found the 2% and 1% in a law treatise which did not cite any data or study substantiating the significance of those particular levels.⁵⁹ Nevertheless, the 2% and 1% retain vitality in caselaw.⁶⁰

More generally, studies show that some factors courts use may not, as an empirical matter, predict whether a stock is efficiently traded, or at least may not have *independent* predictive value but may simply correlate closely with other factors that display independent statistical significance. A study by

out in summary form many of the circumstances that contributed to market inefficiency during the Internet bubble, including circumstances that this Article addresses in detail *infra* Part V.A.2. See *id.* at 124–25.

Two cases highlight the inconsistent application of the *Cammer* factors. The court in *In re Turbodyne Tech., Inc. Sec. Litig.*, 2000 WL 33961193, at *12–14 (C.D. Cal. Mar. 15, 2000), granted a motion to dismiss after concluding that plaintiffs adequately alleged (1) that analysts followed the defendant company's stock and (2) a cause-and-effect relationship between corporate news and changes in the stock's price. *Id.* at *14. The court held that "pleading two of the five [*Cammer*] factors is not sufficient." *Id.* The decision in *In re 2TheMart.com, Inc. Sec. Litig.*, 114 F. Supp. 2d 955, 963–65 (C.D. Cal. 2000), denied a motion to dismiss because "the facts alleged in the complaint are plainly sufficient to allege a cause and effect relationship between disclosures of unexpected events and an immediate response in the stock price. Therefore, Plaintiffs have fulfilled the fifth factor in the *Cammer* test and, thus, have adequately pleaded the element of reliance." *Id.* at 964. Although apparently holding that pleading this one factor was sufficient, *2TheMart.com* also observed that the complaint appeared as well to plead the first factor, as it alleged that the average weekly trading volume during the class period was more than 1% of the outstanding shares. *Id.* at n.6. Judges in the U.S. District Court for the Central District of California authored each of those opinions. Yet, one opinion found that pleading two of the *Cammer* factors was not enough, even when one of the two was price response to information; the other found that pleading price response alone sufficed.

⁵⁹ *Cammer*, 711 F. Supp. at 1286, simply cited BROMBERG & LOWENFELS, *supra* note 44, § 8.6, at 8:815, which said that "[t]urnover measured by average weekly trading of two percent or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; one percent would justify a substantial presumption." Bromberg and Lowenfels made that statement without citation to any finance study.

⁶⁰ See, e.g., *Lehocky*, 220 F.R.D. at 508 ("Even if some of the volume could be attributed to noise traders, the Court determines that 10% is far above the 1% that provides a presumption of efficiency."); *Cheney*, 213 F.R.D. at 499 (observing that even if reported volume were reduced by half to take account of the fact that reported NASDAQ trading overstates actual shares transferred, the stock "would still have a weekly trading volume of five percent, which is well above the two percent recommendation in *Cammer*"); *Blatt*, 2002 WL 31107537, at *13 (finding that weekly trading of 1.8% of outstanding shares is "sufficiently high . . . to support finding market efficiency") (quoting the portion of *Cammer* referencing the 1% and 2% figures); *Krogman*, 202 F.R.D. at 475 (holding that a volume of 0.1% of outstanding shares or even 0.3% of the public float was a "percentage . . . one-tenth to one-twentieth (or roughly one-third to one-eighth if using float) of *Cammer's* threshold range for presumption of market efficiency"); see also *SEC v. Gane*, 2005 WL 90154, at *13 (S.D. Fla. Jan. 4, 2005) (finding that a stock traded efficiently for, among other reasons, that its "average weekly turnover rate was 3.13%—much higher than the two percent benchmark").

Barber, Griffin, and Lev⁶¹ published in 1994 found through a multivariate analysis⁶² that dollar trading volume and the number of analysts following a stock did predict efficiency, but that other factors—including the number of market makers, the size of an issuer, the bid-ask spread, and institutional holdings—were not independently important efficiency indicators.⁶³ A study by Bernard, Botosan, and Phillips, also published in 1994, found that the percentage of outstanding shares traded in a given time period and total dollar volume traded displayed independent power to predict efficiency, but that other factors—including firm size (which these researchers chose to study in part because *Cammer* relied on eligibility for Form S-3), analyst following (which Barber et al. had found to predict efficiency), and percentage of outstanding shares held by institutions—did not significantly and independently predict efficiency when all the tested factors were considered simultaneously.⁶⁴

This empirical work—which was itself confusing as one study purported to show that the number of analysts following a stock possessed independent statistical importance to indicate efficiency and the other study purported to show that the number of analysts did not—has had some modest impact on court decisions. In particular, several opinions have downplayed the importance of the number of market makers in efficiency analysis.⁶⁵ But the

⁶¹ Brad M. Barber et al., *The Fraud-on-the-Market Theory and the Indicators of Common Stocks' Efficiency*, 19 J. CORP. L. 285 (1994).

⁶² The authors recognized the problem that “most efficiency drivers are correlated, as the volume of trade and firm size are [so that] they cannot be considered as independent efficiency indicators.” *Id.* at 293. The researchers used the multivariate analysis “[i]n order to determine the incremental contribution of each variable to the probability of classifying a firm inefficient . . .” *Id.* at 305. The study focused on unexpected earnings results and abnormal returns, defining “inefficient the stocks that had very large unexpected earnings . . . yet did not experience a significant price adjustment on announcement.” *Id.* at 296. The multivariate analysis used data from 1987 to 1990 for the analysis of the effect of institutional holdings and data from 1984 to 1990 for all other variables. *Id.* at 305.

⁶³ *Id.* at 305–07. The study did not examine the movement of stock price in response to news as a predictor of market efficiency but instead treated that movement as the dependent variable—i.e., the definition of efficiency. See *supra* note 62.

⁶⁴ Victor L. Bernard et al., *Challenges to the Efficient Market Hypothesis: Limits to the Applicability of Fraud-on-the-Market Theory*, 73 NEB. L. REV. 781, 796 (1994). The authors said that firm size, as measured by market capitalization, was a factor “suggested by the literature in financial economics, and by the reliance in *Cammer* on eligibility for S-3 registration.” *Id.* at 794. This study used a sample that “cover[ed] most NYSE/AMEX firms for 1983–91” *Id.* at 807. The researchers employed a regression analysis to measure the predictive power of several potential efficiency drivers. They measured efficiency by “delayed stock price response to earnings announcements,” with a “larger delayed response” evidencing a “greater degree of market inefficiency.” *Id.* at 793.

⁶⁵ See *Unger v. Amedisys Inc.*, 401 F.3d 316, 324 (5th Cir. 2005) (noting the “growing concern that the mere number of market makers, without further analysis, has little to do with market efficiency” and citing the

evidence that these studies provide has enjoyed little influence on courts' use of the other factors.⁶⁶ And many opinions even still wrestle with the significance of market makers—considering their number, size, or the volume of their trades in the subject stock.⁶⁷

Barber study); *O'Neil v. Appel*, 165 F.R.D. 479, 502 (W.D. Mich. 1996) (finding that "the mere number of market makers, without much more information, is not a very important indicia of market efficiency;" expressly citing the Barber and Bernard studies; and saying that the "Bernard article notes that, in contrast to analysts, market makers generally do not analyze and disseminate information about the stock that they make a market for and therefore do not contribute to the efficiency of the stock's price"); *Krogman*, 202 F.R.D. at 476 (also citing the Barber and Bernard studies and concluding that "the mere presence of market makers does not indicate market efficiency"); *Griffin v. GK Intelligent Sys.*, 196 F.R.D. 298, 304 (S.D. Tex. 2000) (finding the "number of market makers has limited probative value" and citing *O'Neil* for the proposition that economic literature suggests that this number is an unreliable predictor); *Serfaty v. Int'l Automated Sys.*, 180 F.R.D. 418, 422 (D. Utah 1998) ("[E]vidence of the number of market makers, without more, does not weigh in favor of a finding of an efficient market."); see also *Binder v. Gillespie*, 184 F.3d 1059, 1065 (9th Cir. 1999) (affirming decertification of class even though plaintiffs offered evidence of the number of market makers and arbitrageurs because "this factor alone is insufficient as a matter of law to deem the market for [the] stock efficient;" but not referencing empirical studies).

⁶⁶ See, for example, those cases cited in note 42, *supra*, that were decided after the Barber and Bernard studies appeared in 1994 and that recite the *Cammer* factors, including the analyst following factor questioned by Bernard. And see the cases cited *supra* notes 53–55 and 57 that were decided after the Barber and Bernard studies appeared and that rely on market capitalization, bid-ask spreads, and institutional holdings—all factors questioned by either Barber or Bernard, or both.

⁶⁷ Bromberg and Lowenfels suggested that "[t]en market makers for a security would justify a substantial presumption that the market for the security is an efficient one; five market makers would justify a more modest presumption." BROMBERG & LOWENFELS, *supra* note 44, § 8.6, at 8:815. But those authors did not cite any finance text or article to justify these numbers. They simply noted that, at the end of 1986, 15% of non-NMS, NASDAQ-traded securities had more than ten market makers, with 50% having more than five; and that 31% of NMS, NASDAQ-traded securities had more than ten market makers, with 68% having more than five. *Id.*

In *Lehocky v. Tidel Technology, Inc.*, 220 F.R.D. 491, 508 (S.D. Tex. 2004), the plaintiffs' expert testified that twenty to twenty-five firms made a market in the issuer's stock during the class period, with four or five active at any given time. The issuer's NASDAQ application listed sixteen market makers, including some large, well-capitalized brokerage firms. *Id.* at 509. Defendants contended that there were no market makers for the stock, and that, while the company's director of investor relations had testified to the existence of four or five active market makers, none of those were major brokerage firms, and in any event, four to five was too small a number to suggest efficiency. *Id.* The court noted that *Cammer* had found eleven market makers an indicator of efficiency but that *Krogman* had found thirty to be no indicator, where only six to ten exercised a strong interest. *Id.* Taking it all in all, the court determined "[b]ased on prior caselaw, . . . that this factor is seemingly neutral, if not tipping towards a finding of . . . efficiency." *Id.*; see also *Cheney v. Cyberguard Corp.*, 213 F.R.D. 484, 499–500 (S.D. Fla. 2003) (noting that fifteen to nineteen market makers committed to making a market for stock during class period; commenting that other opinions found the number of market makers not very probative absent information on the volume the makers committed to trade or actually traded; acknowledging that "additional information would aid the Court in its determination"; but nevertheless finding that "the existence of multiple market makers in addition to other factors support[s] efficiency"); *Blatt v. Muse Tech., Inc.*, 2002 WL 31107537, at *13 (D. Mass. Aug. 27, 2002) (finding "numerous financial institutions [acting] as market makers" a factor in denying motion to dismiss); *In re Res. Am. Sec. Litig.*, 202 F.R.D. 177, 189 (E.D. Penn. 2001) (concluding that thirty-three different registered market makers trading the stock, with at least four of them active each month, contributed to finding efficiency

C. The Courts' Focus on Mechanical Efficiency, Not Value Efficiency

To the extent that the cases seeking to determine whether a market is efficient define "efficiency" for this purpose, the opinions overwhelmingly adopt the simplest view of the semi-strong form of the EMT—a market is efficient when prices change in response to new and unexpected information. As *Cammer* put it: "An efficient market is one which rapidly reflects new information in price."⁶⁸ Of course, a revised market price that rapidly "reflects" new information is not necessarily a price that is "right" in the sense, for example, of estimating discounted future expected cash flows. *Cammer's* emphasis on price *movement* in response to news, rather than on whether the movement lands the price at a *level* that would be justified by fundamental analysis, shows most fully in its fifth factor—"empirical facts showing a cause and effect relationship between unexpected corporate events or financial releases and an immediate response in the stock price"—which Judge Lechner called "the essence of an efficient market."⁶⁹

In the same vein, decisions after *Cammer* that attempt to determine whether a market is efficient do not require that the stock price—either before or after adjusting to the information that is central to the case—is "efficient" in the sense of matching or approximating the valuation of the stock that would be derived from some fundamental analysis, such as discounted cash flows. For many courts, the key is simply that prices are unbiased.⁷⁰ Similarly, the two

sufficient to certify class).

⁶⁸ *Cammer*, 711 F. Supp. at 1276 n.17 (quoting BROMBERG & LOWENFELS, *supra* note 44, § 8.6, at 8:812); see also *Binder*, 184 F.3d at 1065 (noting that the "question [of] whether such a market is efficient" asks "simply whether the stock prices reflect public information"); *Gariety v. Grant Thornton, LLP*, 368 F.3d 356, 367–68 (4th Cir. 2004) ("A reasonable investor will rely on the integrity of the market price . . . only if the market is efficient, because in an efficient market, 'the market price has integrity . . . it adjusts rapidly to reflect all new information.'") (quoting Macey & Miller, *supra* note 16, at 1060); *In re AmeriFirst Sec. Litig.*, 139 F.R.D. 423, 430 (S.D. Fla. 1991) ("An efficient market has been defined as one that obtains material information about a company and rapidly reflects that information in the price of the stock."); *Lehocky*, 220 F.R.D. at 506 ("A stock that reacts immediately to a public disclosure trades in an efficient market."). Not all the decisions see efficiency in this mechanical way. While *Freeman v. Laventhol & Horwath* quotes the definition from *Cammer* set out in the text, *Freeman* goes on to say that the absence of efficiency indicators "decreases the probability that [the prices of a security] could be relied on as a reflection of their true value." 915 F.2d 193, 199 (6th Cir. 1990).

⁶⁹ *Cammer*, 711 F. Supp. at 1287. At least some decisions find this fifth factor to be the most important. See *Lehocky*, 220 F.R.D. at 506 ("[T]he key inquiry in determining whether [the] stock traded in an efficient market is whether a cause and effect relationship exists between company-specific news and stock price movement."); *In re 2TheMart.com, Inc. Sec. Litig.*, 114 F. Supp. 2d 955, 964 (C.D. Cal. 2000) (observing that "the fifth factor may be the most significant . . . as it is 'the essence of an efficient market'") (citing *Cammer*).

⁷⁰ See, e.g., *In re Res. Am. Sec. Litig.*, 202 F.R.D. at 190 (citing Newkirk, *supra* note 22, at 1422).

studies—by Barber et al. and Bernard et al.—tested factors as indicators of efficiency only by attempting to determine the independent statistical significance of each factor with respect to *price change*.⁷¹ Neither study attempted to determine the relationship of each factor to “value efficiency”—that is, the tendency of the factor to produce a price close to a price that fundamental analysis would support.

D. Factors Measuring the Participation of Market Professionals, Who Conceivably Provide the Link Between Mechanical and Value Efficiency

Although the caselaw criteria for applying FOTM do not yet include a close relationship between market price and fundamental values, a number of the factors that courts examine to determine efficiency are related to the explanation of *how* an efficient market works. Particularly, several factors focus on the role of market professionals in analyzing the information and trading (or causing others to trade) in a way that converts new and unexpected information into a new price.

The number of analysts following a stock and the number of market makers are supposedly important precisely because these market participants constantly gather and interpret information and trade, or move others to trade, in ways that change prices in response to unanticipated developments.⁷² Eligibility for S-3 registration is important because the SEC explicitly recognized that stocks qualifying for such registration trade efficiently. As it turns out, the Commission allows S-3 registration *because* “corporate information [about the issuers of such stock] is broadly disseminated, [and] such companies are widely followed by professional analysts and investors in the market place.”⁷³ Institutional investment is important because “[i]nstitutional investors (e.g., mutual funds, money managers, banks) are presumed to be better informed about the securities they hold and better able to interpret new information than individual investors.”⁷⁴

The idea, at least in part, is that examination of these factors will locate the instances in which the pros are really leading the market on its way⁷⁵ to

⁷¹ See *supra* the descriptions of the studies in notes 62, 64.

⁷² See *supra* notes 45–46 and accompanying text.

⁷³ *Cammer*, 711 F. Supp. at 1284–85 (quoting SEC Release No. 33-6331, *available at* 1981 WL 30765, at *5 (Aug. 6, 1981)).

⁷⁴ Barber et al., *supra* note 61, at 292 (explaining why the researchers chose to test institutional holdings as a possible indicator of efficiency).

⁷⁵ As *Gariety v. Grant Thornton, LLP*, put it:

unbiased price changes.⁷⁶ Implicitly, these factors identify cases in which, at least in theory, professional acumen links mechanical efficiency to financial fundamentals.

This link, even if not expressed explicitly in the caselaw, arguably makes sense out of what would otherwise seem to be chaos in the courts. Perhaps by using such factors as the number of analysts following a stock, the number of market makers, eligibility to use Form S-3, and institutional ownership—even if use of such factors defeats consistency in decisions and even without empirical studies reaching a consensus that these factors do in fact each independently predict efficiency—the courts are subconsciously fighting to maintain the link between corporate news, price change, and financial rationality.

E. The Dominance of Efficiency Analysis

While the discussion above might create the impression that defendants almost always contest the applicability of FOTM by fighting over whether the particular combination of factors in each case suggests efficiency, that is not so. In many cases where plaintiffs bought or sold common stock traded on a national exchange or through NASDAQ and in which the plaintiffs allege misrepresentations,⁷⁷ both plaintiffs and defendants simply proceed on the

Nonetheless, it is recognized that it is “[r]ivalrous competition among market professionals [that] drives securities prices to their efficient levels.” Macey & Miller, *supra* [note 16,] at 1086; see also *West v. Prudential Sec., Inc.* 282 F.3d 935, 937 (7th Cir. 2002) (“The theme of *Basic* and other fraud-on-the-market decisions is that *public* information reaches professional investors, whose evaluations of that information and trades quickly influence securities prices”); *Eckstein v. Balcor Film Investors*, 8 F.3d 1121, 1129 (7th Cir. 1993) (“Competition among savvy investors leads to a price that impounds all available information, even knowledge that is difficult to articulate. We call a market ‘efficient’ because the price reflects a consensus about the value of the security being traded . . .”).

368 F.3d 356, 368 (4th Cir. 2004) (emphasis in *West*).

⁷⁶ *Lehocky v. Tidel Tech., Inc.*, 220 F.R.D. 491, 505 (S.D. Tex. 2004) (“A market is efficient when investors, using public information, engage in sufficient competition to move the price of a security from one level to another as new information reaches the marketplace. In an efficient market, price changes occur very quickly and *unbiasedly* because there is adequate competition between investors in the marketplace for superior opportunities.”) (emphasis added).

⁷⁷ When plaintiffs allege omissions, they may also be entitled to a rebuttable presumption of reliance simply by showing that the omitted information is material. See *Affiliated Ute Citizens of Utah v. United States*, 406 U.S. 128 (1972). The circumstance that many cases involve both misrepresentations and omissions complicates the application of *Affiliated Ute* in ways that this Article does not address.

assumption that the market for the stock was efficient and that the fraud-on-the-market theory therefore applies.⁷⁸

It is true that, if plaintiffs are entitled to the FOTM presumption because a court has concluded (after examining the factors set out above) that the market in which the relevant security traded was efficient, the defendants have the right to rebut that presumption.⁷⁹ *Basic* expressly said that such a rebuttal could take the form of "[a]ny showing that severs the link between the alleged misrepresentation and either [1] the price received (or paid) by the plaintiff, or [2] his decision to trade at a fair market price."⁸⁰

⁷⁸ As set out *supra* in note 57, *Cammer* counsels that a stock should not be found to trade efficiently simply because it is bought and sold on an exchange or through NASDAQ. 711 F. Supp. at 1281. And other decisions at least mouth the same point. *Lehocky*, 220 F.R.D. at 506 n.18 (observing that "the fact that a company's stock is listed on a national exchange does not establish that it trades in an efficient market;" but finding plaintiffs were entitled to the reliance presumption in a case where the stock traded through the NASDAQ small cap market for part of class period and through NASDAQ for the remainder of the period); *Blatt v. Muse Tech., Inc.*, 2002 WL 31107537, at *13 (D. Mass. Aug. 27, 2002) ("Although no court to date appears to have found market inefficiency in connection with a stock traded, like that of Muse during the Class Period, on the NASDAQ Small Cap market, I agree with . . . *Cammer* . . . that a particularized inquiry remains necessary.") (holding that plaintiffs pled enough facts to be entitled to the FOTM presumption on a motion to dismiss); *O'Neil v. Appel*, 165 F.R.D. 479, 504 (W.D. Mich. 1996) ("No court has ever held that a finding of efficiency can be based on the mere fact that a stock is traded on NASDAQ, let alone on the [SmallCap tier] of the NASDAQ system.") (denying class certification because plaintiffs failed to support presumption).

Nevertheless, some decisions recognize that a security trading on a national exchange or through NASDAQ is likely to be efficiently traded. See, e.g., *Miller v. NTN Communications, Inc.*, 1999 WL 817217, at *10 (S.D. Cal. May 21, 1999) ("While the court acknowledges that trading on the AMEX, standing alone, is not sufficient to establish an efficient market[,] it appears that no court has ever found that a stock trading on AMEX was inefficient for purposes of applying the fraud-on-the-market presumption. To the contrary, numerous courts have held that stocks trading on the AMEX are almost always entitled to the presumption."); see also *In re Initial Pub. Offering Sec. Litig.*, 227 F.R.D. 65, 107 (S.D.N.Y. 2004) (setting out, as the first indicator that the stocks involved in that decision were efficiently traded, the circumstance that all of them "were traded on the NASDAQ National Market"). A treatise sums up what is perhaps the prevailing view: "Public markets are generally efficient markets." 3 HAZEN, *supra* note 37, § 12.10[6], at 342.

⁷⁹ *Basic v. Levinson*, 485 U.S. 224, 248–49 (1988).

⁸⁰ *Id.* at 248. The Court said that a defendant might show, for example, that market makers knew the truth and "thus . . . the market price would not have been affected by [defendants'] misrepresentations" or that the truth had leaked out of the defendant company and "dissipated the effects of the misstatements." *Id.* at 248–49. Of course, an argument that the price did not reflect the alleged fraud could also be used not in rebuttal but to contest the fifth *Cammer* factor—that there was a cause-and-effect relationship between news and an immediate reaction in the stock price. See *supra* text accompanying note 51; see also *In re Honeywell Int'l Inc. Sec. Litig.*, 211 F.R.D. 255, 264 n.15 (D.N.J. 2002) ("In a sense the attempt to demonstrate the absence of an actual impact on price is also a backdoor attack on one or both of the bases of the presumption: granting the assumptions behind the fraud on the market presumption (that prices in efficient markets reflect material public information), if the information had no effect on price, then either it was not material or the market was not efficient."); *In re Seagate Tech. II Sec. Litig.*, 843 F. Supp. 1341, 1355 (N.D. Cal. 1994) ("[A] showing of a lack of price distortion . . . does not directly 'rebut' the reliance presumption as much as it attacks the foundational prerequisites to application of the fraud-on-the-market theory."). *Seagate II* has not been

For present purposes, the first of these possible rebuttals is most important. Remember that the efficient market theory focuses on the *changes* in stock prices. In a fraud-on-the-market case, the plaintiffs will seek to show that some such stock price change reflects the fraud—ideally by showing that the price of the stock went up (or down) when the defendants made their misrepresentations, and that the price of the stock went down (or up) when the truth came out. The first sort of rebuttal referenced in *Basic* can therefore hinge upon a demonstration that the change in the market price that the plaintiffs attribute to a misrepresentation (or the revelation of the truth that a misstatement concealed) was due to factors *other* than the misrepresentation (or revelation). If defendants make that showing, they sever the relationship between the alleged fraud and the market price at which the plaintiffs bought or sold, thereby making it impossible for plaintiffs to contend that they relied on the fraud indirectly through a market price that reflected the fraud.

III. THE “EVENT STUDY” AS THE CRITICAL TOOL TO BRING EFFICIENT MARKET THEORY TO BEAR ON MULTIPLE 10B-5 ELEMENTS AND THE CONNECTION BETWEEN EVENT STUDIES AND THE NORMATIVE VALUES INHERENT IN 10B-5 ELEMENTS

The central tool used to “sever[] the link between the alleged misrepresentation and . . . the [stock] price”⁸¹—or, on the other hand, to establish that link—is the “event study.” Event studies are used not only to establish or rebut the efficient market reliance presumption and to contest the fifth *Cammer* factor. Event studies are also employed to argue that (1) an alleged misrepresentation was or was not material; (2) the misrepresentation did or did not cause any loss to the plaintiff; and (3) if the misrepresentation caused a loss, a measureable part of the loss was due to the fraud, with the rest due to other factors that also affected the stock price.

followed to the extent that it suggested that class certification in an open market 10b-5 case might be denied because of conflicts (1) between, on the one hand, in-and-out traders who sold securities on a given day and, on the other hand, in-and-out traders and retention traders who bought on that day, and (2) between, on the one hand, class members who still hold some of the relevant securities at the time of the lawsuit and, on the other hand, those who do not. See, e.g., *In re DaimlerChrysler AG Sec. Litig.*, 216 F.R.D. 291, 297 (D. Del. 2003). But *Seagate II*'s inability to persuade on those points does diminish the reasoning in the above-quoted passage from that opinion.

⁸¹ *Basic*, 485 U.S. at 248.

A. *A Rough Description of an Event Study*

An "event study" is a statistical technique designed to determine whether a particular piece of new information had an impact on the price of a stock and, if so, the amount of that impact. Suppose, for example, that defendants make a false, unexpected, and positive announcement about an issuer and the price of that issuer's stock rises on the next trading day. But suppose that the market generally improves on that day and that the prices of other stocks in the issuer's industry also enjoy gains on that day. The question that the event study examines is whether the false announcement caused the price of the issuer's stock to go up at all—instead of market and industry developments causing the entire price rise—and, if the defendants' announcement did have *some* price effect, what part of the company's stock price increase was attributable to the announcement as opposed to the other factors.

Here is a description of this tool, focusing not on isolating the effect of good but false news but instead on isolating the effect of the later disclosure of the "truth".⁸²

Event studies are commonly used to isolate the effects on the stock price of the disclosure of the withheld information. An event-study is an empirical analysis that assesses the effect of the announcement on the stock's price by comparing the actual return (the percentage change in the stock price) during the period of disclosure with the predicted return if the information had not been disclosed. By comparing the stock under consideration to a benchmark index of comparable stocks (which may be a market index, an industry index, or another comparable set of stocks such as companies that went public contemporaneously with the defendant firm) during a control period, one can, using regression analysis, eliminate the effects of non-firm-specific events and calculate the stock's predicted return during the period under investigation if there had been no new, material firm-specific information. The difference between the actual return and the predicted return is the amount that is attributed to the disclosure.⁸³

⁸² The effect of a misrepresentation arguably may be shown either by a stock's abnormal return when the defendants made the misrepresentation or by an abnormal return when the "truth" came out, as by a corrective disclosure.

⁸³ Janet C. Alexander, *The Value of Bad News in Securities Class Actions*, 41 UCLA L. REV. 1421, 1433 (1994); see also Easterbrook & Fischel, *supra* note 20, at 626–28 (stating that comparing predicted return to actual return "permits us to 'take out the market'" so that we can determine the "overpayment for the stock," but acknowledging some shortcomings of the technique); Fischel, *supra* note 6, at 19 (praising such a

The event study also determines whether this difference, called the abnormal return, is statistically significant—that is, whether there is a high probability that the abnormal return did not simply occur by chance.⁸⁴

B. An Event Study Investigates Only the Relationship Between New Information and the Change in Securities Prices, Not Whether Prices Before or After the Change Reflected the Issuer's Fundamental Value, and Not Whether Market Professionals Controlled the Price Change That Occurred

An event study purports only to separate out the statistically significant effects—of a false statement or a corrective disclosure or a disclosure of formerly omitted information—on a change in stock prices. The technique seeks solely to determine when such an event did in fact cause any part of a stock price change and, if so, how much of the change is attributable to the event. Event studies do not disclose whether the price from which the change occurred, or the new price, reflects some fundamental value such as discounted future cash returns to the investor. Event studies are designed simply to

comparison as a “relatively precise method for measuring whether an alleged omission or misrepresentation injured investors”).

⁸⁴ Daniel R. Fischel, *Market Evidence in Corporate Law*, 69 U. CHI. L. REV. 941, 948 (2002) (“[A]n event study (a type of regression analysis) [can] determine whether the alleged misrepresentations caused any statistically significant stock price movements when made or when a supposedly corrective disclosure was made, controlling for other possible causes of stock price movements (such as movements of the overall market) and random fluctuations.”) (emphasis added); Daniel R. Fischel, *The Use of Economics in Securities Fraud Cases*, available on Westlaw at 492 PLJ/Corp 455, 466 (1985) (“Briefly, the methodology involves the use of regression analysis done by computer to determine whether the release of the information alleged by plaintiff to have been not properly disclosed by defendants had a statistically significant effect on the stock price when market and industry factors are taken into account.”). A piece by David I. Tabak & Frederick C. Dunbar, *Materiality and Magnitude: Event Studies in the Courtroom*, in LITIGATION SERVICES HANDBOOK 19.2–19.6 (Roman L. Weil et al. eds., 2001), contains another description of an event study—particularly as used in securities litigation. This description states that

statistical analysis can provide information on the likelihood that the price movement was due solely to chance. Formally, a . . . test provides a statistical answer to the question: how likely is it that the observed stock price movement in the event window could have occurred if there were no event influencing stock prices in that window? For example, if an event is material at the 5 percent level, this means that there is only a 5 percent likelihood that the abnormal return (or the stock price movement once one controls for market, industry, and other effects) could have been caused by the stock's normal random price fluctuations. Alternatively, we can say that we are 95 percent confident that the abnormal return is greater than what would be expected based on the stock's normal random price fluctuations.

Id. at 19.9.

measure the stock price effects of misrepresentations and omissions in a mechanically efficient market.

Similarly, while an event study determines whether an event such as a company announcement caused a stock price movement, such a study does not test *why* the market moved in response to the announcement. In particular, an event study does not test whether the price change was driven by market professionals and, if so, whether those professionals were rationally relating the announcement to some fundamental analysis such as expected future cash returns.

C. An Event Study May Be Used To Establish Multiple 10b-5 Elements: Reliance, Materiality, Causation, and Damages

If an event study shows that a misrepresentation or a corrective disclosure had a statistically significant effect on the price of a stock, then the market may be said to have “relied” on the misrepresentation. And, by the fraud-on-the-market theory, all of the investors who bought (or sold) the stock also “relied” by buying or selling at a market price that included a component reflecting the falsity.

But, in a very practical sense, event studies can drive the analysis of other 10b-5 elements as well. In addition to proving reliance (an element of a 10b-5 action),⁸⁵ a 10b-5 plaintiff must establish the “materiality” of the misrepresentation or omission on which that plaintiff sues.⁸⁶

A 10b-5 plaintiff must also prove “loss causation.”⁸⁷ This requires a showing that the 10b-5 violation “caused the loss for which the plaintiff seeks to recover.”⁸⁸ The Supreme Court has held that such a showing requires more than that a plaintiff bought a stock at an inflated price,⁸⁹ and decisions in tune with the Court’s holding generally find that plaintiffs who contend that defendants inflated a stock price by misrepresentation or omission must

⁸⁵ *Basic*, 485 U.S. at 243.

⁸⁶ Rule 10b-5 makes it unlawful “[t]o make any untrue statement of a *material* fact or to omit to state a *material* fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading.” 17 C.F.R. § 240.10b-5(b) (2004) (emphasis added).

⁸⁷ 15 U.S.C. § 78u-4(b)(4) (2000).

⁸⁸ *Id.*

⁸⁹ *Dura Pharm., Inc. v. Broudo*, 125 S. Ct. 1627, 1631–32 (2005) (reversing a Ninth Circuit decision and holding that “[n]ormally, in cases such as this one (i.e., fraud-on-the-market cases), an inflated purchase price will not itself constitute or proximately cause the relevant economic loss,” but adding enigmatically that a “higher purchase price . . . may prove to be a necessary condition of any such loss”).

demonstrate that the revelation of the truth (or omitted fact) caused the price of the stock to fall.⁹⁰ The loss causation element “provides the necessary connection between the challenged conduct and the plaintiff’s pecuniary loss.”⁹¹

To recover money, a 10b-5 plaintiff must also prove damages. In open market cases, courts regularly employ an “out-of-pocket” rule to measure damages.⁹² This rule measures the difference between the value of the security

⁹⁰ *Broudo*, 125 S. Ct. at 1633, cited both *Emergent Capital Investment Management v. Stonepath Group, Inc.*, 343 F.3d 189, 197–99 (2d Cir. 2003), and *Semerenko v. Cendant Corp.*, 223 F.3d 165 (3d Cir. 2000). *Emergent Capital* found that an allegation that the price paid exceeded the true investment value at the time of purchase was not enough to plead loss causation. 343 F.3d at 197–99. The court reasoned that “we have often compared loss causation to the tort law concept of proximate cause Similar to loss causation, the proximate cause element of common law fraud requires that plaintiff adequately allege a causal connection between defendants’ non-disclosures and the subsequent decline in the value of [the securities plaintiff bought].” *Id.* at 197. *Semerenko* used these words to explain the need for a connection between a price decline and the asserted fraud:

Where the value of the security does not actually decline as a result of an alleged misrepresentation, it cannot be said that there is in fact an economic loss attributable to that misrepresentation. In the absence of a correction in the market price, the cost of the alleged misrepresentation is still incorporated into the value of the security and may be recovered at any time simply by reselling the security at the inflated price Because a plaintiff in an action under § 10(b) and Rule 10b-5 must prove that he or she suffered an actual economic loss, we are persuaded that an investor must also establish that the alleged misrepresentations proximately caused the decline in the security’s value to satisfy the element of loss causation.

223 F.3d at 185. Aside from citing these cases, *Broudo* quoted a comment to a section of the *Restatement of Torts* stating that an issuer misrepresenting its financial condition in order to sell its stock becomes liable after the facts come out and “‘as a result’ share value ‘depreciate[s].’” 125 S. Ct. at 1633. But,

because market responses, such as stock downturns, are often the result of many different, complex, and often unknowable factors, the plaintiff need not show that the defendant’s act was the sole and exclusive cause of the injury he has suffered; he need only show that it was a substantial, i.e., a significant contributing cause.

Robbins v. Koger Props., Inc., 116 F.3d 1441, 1447 (11th Cir. 1997) (citations and internal quotation marks omitted). Moreover, there is at least a theoretical problem with requiring the plaintiff to show a price drop after revelation of previously concealed bad news because “stockholders can be damaged in ways other than seeing their stocks decline. If a stock does not appreciate as it would have absent the fraudulent conduct, investors have suffered a harm.” *Gebhardt v. ConAgra Foods, Inc.*, 335 F.3d 824, 831–32 (8th Cir. 2003). *Broudo* expressly declined to consider loss causation in such a case where the claim is “that a share’s higher price is lower than it would otherwise have been.” 125 S. Ct. at 1632.

⁹¹ 3 HAZEN, *supra* note 37, § 12.11[3], at 363–64; *Broudo*, 125 S. Ct. at 1631 (citing HAZEN and defining this element as “a causal connection between the material misrepresentation and the loss”).

⁹² Judge Sneed’s concurrence in *Occidental Petroleum Corp.* advocated use of the out-of-pocket measure and explained that a rescissory measure in such cases would “impose upon the defendant the burden of restoring all investment losses by those who held their stock until disclosure [and thereby] burden[] the defendant with certain losses which it neither caused nor with respect to which it assumed a responsibility.” *Green v. Occidental Petroleum Corp.*, 541 F.2d 1335, 1343 (9th Cir. 1976) (Sneed, J., concurring). This is so

at the time the plaintiff bought (or sold) and the price the plaintiff paid (or received).⁹³ For each purchase in a case in which the plaintiff class alleges price inflation, the damage is the price paid, minus the price at which the stock would have traded absent the fraud, multiplied by the number of shares bought.⁹⁴ Typically, this requires the creation of a "value" line, with "value" in this context meaning simply the price at which the stock would have been bought and sold if the wrongdoing had not occurred, rather than a price computed by a fundamental financial analysis such as discounted cash flow. As one article explained:

In the classic formulation of the Rule 10b-5 measure, damages can be represented on a chart that contains a "price line," tracking the price of the shares for every day of the class period, and a "value line," representing the price at which the shares would have traded absent the fraud.⁹⁵

The determination of the "value line" frequently begins (in a case in which plaintiffs allege price inflation) with analysis of the drop in the price after the defendants disclose the "truth" about the misrepresentation or disclose the omitted fact—with that drop dissected to isolate the portion attributable to the truth or new fact, as opposed to other forces acting on the stock price at the time the drop occurred.⁹⁶ The adjusted drop—that is, the portion of the drop

because "in the absence of an unnaturally steady market between the critical dates, it is not reasonable to regard the misrepresentations of the defendant as the proximate cause of all price declines." *Id.*; accord *Huddleston v. Herman & MacLean*, 640 F.2d 534, 555-56 (5th Cir. 1981), *aff'd in part and rev'd in part on other grounds*, 459 U.S. 375 (1983).

⁹³ *Huddleston*, 640 F.2d at 556; see also 9 LOSS & SELIGMAN, *supra* note 47, at 4413 n.485 (rev. 2004) (collecting cases).

⁹⁴ *Huddleston*, 640 F.2d at 556 ("The use of the out-of-pocket rule will require that a 'true' or 'real' value, i.e., the value the security would have had absent the misrepresentation, be established for each date on which members of the class purchased during the . . . class period. Once those values are obtained, possibly with the help of expert witnesses or a special master, then the determination of each individual plaintiff's recovery becomes a simple matter of subtraction of the 'true' value of the security on the date of the plaintiff's purchase from the purchase price paid by the plaintiff on that date.") (footnote omitted).

⁹⁵ Alexander, *supra* note 83, at 1429 (adding that, "for any particular trade, the amount of damages is the difference between the price paid and the value line on that particular day (the per-share loss), multiplied by the number of shares purchased").

⁹⁶ Alexander said it well:

In calculating per-share damages, the task is to determine what the price of the stock would have been on each trading day, if the withheld information had been disclosed. The starting point for this analysis is what happened to the price when the information actually was disclosed. For example, when Apple announced that it was terminating the disk-drive project, the stock price dropped by \$8.25 per share. One cannot simply assume that the amount by which the stock price decreased following the announcement equals the per-share damages, however, because the stock

attributable to the truth or new information—must then, by one of a number of techniques, be worked backward through the class period to create the “value line.”⁹⁷ Again, the “value line” here simply represents an estimate of the prices at which the stock would have traded without the fraud, not stock prices computed by fundamental financial analysis.

price may have been affected by factors other than the securities violation. These factors could include both non-firm-specific events, such as interest rate changes or new-product announcements by competitors, and firm-specific events not related to the securities violation, such as Apple's announcement of revised earnings and revenue forecasts in the same press release as the announcement that the disk-drive project had been discontinued. These unrelated contributors to the price change must first be eliminated, yielding the price change attributable to the disclosure itself.

Id. at 1432.

⁹⁷ *Id.* at 1432–33. While Alexander's article is now somewhat dated, much remains the same today. Thus, many damage analyses start with the price after the drop “after adjusting for concurrent market and/or industry effects and any non-disclosure company-related news.” Frederick Dunbar et al., *Inflation Methodologies in Securities Fraud Cases: Theory and Practice*, available on Westlaw at 1386 PLI/Corp 597, 600 (2003). Once analysis isolates the portion of the postdisclosure stock price decline for which the “truth” or new fact is solely responsible—the abnormal return—one of the following several methods of creating the “value line” may be employed: (1) the constant dollar method, which creates the value line by subtracting from the stock price on each day of the class period the dollar amount of the postdisclosure drop attributed to the “truth” or new fact; (2) the constant percentage method, which creates the value line by subtracting from the stock price on each day of the class period the percentage of that price equal to the percentage price drop attributed to the “truth” or new fact announced on the disclosure date; or (3) the constant value method, which creates the value line by simply using, for all dates in the class period, the postdisclosure price (adjusted to remove any drop caused by factors other than the “truth” or new information). *Id.* Sometimes the last method is refined by adjusting the price, as it is traced backward in time, according to changes in a market or industry index during the class period. *Id.* at 616 n.12. There are other ways to compute damages. For example, an expert could take the price of a company's stock after disclosure of the truth and, using an index of stocks issued by companies in the same industry but *without* making any adjustment for the portion of the disclosure drop attributed to market factors, work backward by assuming that the return on the subject company's stock would have simply been the return on the index. Another approach—referenced as the event study method—is to construct the value line by working backward after revelation of the truth, using the return on the index of comparable stocks for those days on which an event study shows there to have been abnormal returns due to the alleged fraud, and using the actual return on the subject stock for all other days. See Bradford Cornell & R. Gregory Morgan, *Using Finance Theory to Measure Damages in Fraud on the Market Cases*, 37 UCLA L. REV. 883, 899 (1990).

This Article will not evaluate these different methods of creating a value line by working a postdisclosure drop back through a class period. But note that none of these methods compute “value” in the sense of a price representing discounted cash flow.

There is today a statutory limitation on damages calculated “by reference to the market price.” 15 U.S.C. § 78u-4(e)(1) (2000). However, this Article will not discuss the complications created by that limitation. Further, this discussion concerns only the calculation of damages for separate purchases or sales, not controversies surrounding the calculation of aggregate damages. See Robert A. Alessi, *The Emerging Judicial Hostility to the Typical Damages Model Employed by Plaintiffs in Securities Class Action Lawsuits*, 56 BUS. LAW. 483 (2001).

The most ardent adherents to the mechanical view of the efficient market argue that virtually all of these elements—materiality, reliance, loss causation, and damages—can be proved by an event study showing that a misrepresentation or omission had a statistically significant effect on stock price movement. Daniel Fischel may have said it best:

The market model . . . by focusing on whether the alleged misrepresentation or disclosure caused the security to trade at an artificially high or low price, eliminates the arbitrariness in the determination of materiality.

. . . .

Because the rational course for investors is simply to accept (rely on) the market price, it is of no consequence whether a plaintiff can demonstrate that he relied upon a particular piece of information. If fraudulent conduct caused the market price to be artificially high or low, a plaintiff under the market model has been injured even if he was totally unaware of the challenged conduct.

. . . .

Under the market model, causation and damages, like materiality and reliance, are subsumed under the general inquiry of whether the alleged fraudulent conduct affected the price of the security.⁹⁸

Acceptance of the logic of the fraud on the market theory, therefore, leads to the conclusion that there is no need in a securities fraud case for separate inquiries into materiality, reliance, causation, and damages. These inquiries are necessary in a face-to-face transaction where each party must make a subjective valuation of information provided by the other party, but irrelevant in open market transactions where the market price transmits all relevant information. The relevant inquiry in open-market transactions should be whether the market price was in fact artificially affected by false information.⁹⁹

Courts have also observed that price movement can establish multiple elements in a FOTM case.¹⁰⁰

⁹⁸ Fischel, *supra* note 6, at 7–8.

⁹⁹ *Id.* at 13.

¹⁰⁰ *In re Seagate Tech. II Sec. Litig.*, 843 F. Supp. 1341, 1357 (N.D. Cal. 1994); *see also In re Verifone Sec. Litig.*, 784 F. Supp. 1471, 1479 (N.D. Cal. 1994), *aff'd*, 11 F.3d 865 (9th Cir 1993) (footnote omitted):

The fraud-on-the-market theory . . . shifts the inquiry from whether an individual investor was fooled to whether the market as a whole was fooled. Hence, the theory not so much eliminates the reliance requirement as subsumes it in the . . . analysis. In the same way, the theory also subsumes the inquiry into materiality, causation and damages. For if a misleading fraudulent

True, this extreme view needs qualification. For example, courts disagree as to whether materiality *requires* a price effect;¹⁰¹ on the other hand, if a

disclosure or omission could have had no effect on the security's market price, the information cannot have been material. Similarly, if a misstatement or omission had no effect on the market price (because, for example, the market already had the correct information from other sources) then there could be no causation and no damages.

See also Eckstein v. Balcor Film Investors, 58 F.3d 1162, 1170 (7th Cir. 1995) ("Reliance is the confluence of materiality and causation. The fraud on the market doctrine is the best example: a material misstatement affects the security's price, which injures investors who did not know of the misstatement."). Event studies may prove these other elements besides reliance. Eisenhofer et al., *supra* note 25, at 1424–28 (noting the importance of event studies today in determining damages); *id.* at 1444–45 (recognizing the value of event studies in proving loss causation).

¹⁰¹ The Ninth Circuit reversed dismissal of a complaint, rejected a *per se* rule that alleged misrepresentations are immaterial if the stock price does not drop as soon as the "truth" comes out, and observed that a reasonable investor could find the information significant even in the absence of an immediate drop. No. 84 Employer-Teamster Joint Council Pension Trust Fund v. Am. W. Holding Corp., 320 F.3d 920, 934–35 (9th Cir. 2003). But the majority opinion in this two-to-one case also pointed to a stock price decline, following what arguably was the disclosure of the financial effect of the aircraft maintenance problems allegedly obscured by the defendants. *Id.* at 935. The Second Circuit held in *United States v. Bilzerian*, 926 F.2d 1285, 1298 (2d Cir. 1991), that "whether a public company's stock price moves up or down or stays the same after the filing of a Schedule 13D does not establish the materiality of the statements made, though stock movement is a factor the jury may consider relevant." And the SEC staff took the position that "[c]onsideration of potential market reaction to disclosure of a misstatement is by itself 'too blunt an instrument to be depended on' in considering whether a fact is material." Staff Accounting Bulletin No. 99, 64 Fed. Reg. 45,150, 45,152 & n.16 (Aug. 19, 1999) (quoting Financial Accounting Standards Board, Statement of Financial Accounting Concepts No. 2, Qualitative Characteristics of Accounting Information 169 (1980)).

The Third Circuit has expressed a similar view. Relying on its decision in *In re Burlington Coat Factory Securities Litigation*, 114 F.3d 1410 (3d Cir. 1997), the court recently explained:

In *Burlington* . . . this Court fashioned a special rule for measuring materiality in the context of an efficient securities market. This rule is shaped by the basic economic insight that in an open and developed securities market like the New York Stock Exchange, the price of a company's stock is determined by all available material information regarding the company and its business. In such an efficient market, "information important to reasonable investors . . . is immediately incorporated into the stock price." *Burlington*, 114 F.3d at 1425. As a result, when a stock is traded in an efficient market, the materiality of disclosed information may be measured *post hoc* by looking to the movement, in the period immediately following disclosure, of the price of the firm's stock. Because in an efficient market, "the concept of materiality translates into information that alters the price of the firm's stock," if a company's disclosure of information has no effect on stock prices, "it follows that the information disclosed . . . was immaterial as a matter of law." *Burlington*, 114 F.3d at 1425.

Oran v. Stafford, 226 F.3d 275, 282 (3d Cir. 2000).

The Eighth Circuit has expressed the curious position that, once materiality is decided by the traditional test—whether the information would have been viewed by the reasonable investor as having significantly altered the total mix of information available (*see infra* note 117)—the "finding of materiality allows the plaintiffs to invoke the fraud-on-the-market theory and assume that the misrepresentations inflated the stock's price." *Gebhardt v. ConAgra Foods, Inc.*, 335 F.3d 824, 831 (8th Cir. 2003). The Fifth Circuit has stated that

fraud-on-the-market plaintiff can show a price effect from a misleading statement or omission, that showing may, for practical purposes, go a long way towards establishing materiality.¹⁰² As another example and as set out above, loss causation now requires that, where plaintiffs allege a fraud that supposedly inflated a stock price, they must also show that revelation of the truth or omitted fact was a cause of price decline.

Moreover, the event studies that litigants use to prove a price effect have recognized limitations. Just as one example, if a company combines three unexpected, negative announcements in one press release and only one of those announcements corrects an alleged fraud or reveals information that plaintiffs contend the company had a duty to disclose at an earlier time, an event study can determine whether the company's stock price experienced a statistically significant abnormal decline the following trading day and can determine the amount of the abnormal decline. But, by itself, the event study cannot separate out the amount of the decline attributable to the one announcement that relates to the alleged fraud, nor can the event study confirm that the stock would have declined by any statistically significant amount had that one announcement been made alone.¹⁰³

[w]hile we agree with [the Third Circuit in] *Burlington* . . . as to the requirement, in cases depending on the fraud-on-the-market theory, that the complained of misrepresentation or omission [must] have actually affected the market price of the stock, we conclude that it is more appropriate in such cases to relate this requirement to reliance rather than to materiality.

Nathenson v. Zonagen Inc., 267 F.3d 400, 415 (5th Cir. 2001); *see also* *Greenhouse v. MCG Capital Corp.*, 392 F.3d 650, 660–61 n.11 (4th Cir. 2004) (reviewing cases and concluding that the “majority rule seems to be that [stock price movement] can be *some* evidence, but not, standing alone, *dispositive* evidence of materiality”) (emphasis in original).

¹⁰² *See* 4 LOSS & SELIGMAN, *supra* note 47, at 2104 (rev. 2000) (“To a reasonable investor . . . in the context of a lawsuit under § 11 or 12 of the 1933 Act or Rule 10b-5 of the 1934 Act, a percentage change in a stock price (net of market movements) may be a more meaningful measure of the significance of a misrepresentation or omission than a percentage change in total assets, net earnings, or gross sales.”).

¹⁰³ *See In re World Access, Inc. Sec. Litig.*, 310 F. Supp. 2d 1281, 1298–99 (N.D. Ga. 2004) (plaintiffs’ alleged misstatements about a particular telephone switching product, the CDX switch; plaintiffs’ expert offered an event study showing that the market had reacted negatively to company announcements on January 5 and February 11, 1999; but both announcements included bad news not related to CDX switches; plaintiffs’ expert accordingly did “not point[] to evidence sufficient to show that the CDX switch related disclosures from early 1999 were what made the stock price drop so drastically”; given that failure, and a defense event study showing that the allegedly false and positive announcements about the CDX switches had not occasioned statistically significant increases in the company’s stock price, the court granted summary judgment to defendants on materiality); *see also In re Zonagen, Inc. Sec. Litig.*, 322 F. Supp. 2d 764, 780–82 (S.D. Tex. 2003) (granting defense summary judgment where plaintiffs’ event study showed that a particular research report caused a price decline but where the report included adverse information going beyond the correction of the alleged fraud and defendants’ event study concluded that allegedly false statements did not increase the stock price in a statistically significant way). But note that it may be possible to disentangle the effects of

Despite these weaknesses, event studies are very powerful. Indeed, a number of decisions have excluded expert opinions—on the market effect of corrective statements and revelations of omitted facts—precisely because the experts did not prepare event studies.¹⁰⁴ And, in a fraud-on-the-market case, if

multiple announcements on a single day if the nonfraudulent announcements on that day have close analogs on other days. See Tabak & Dunbar, *supra* note 84, at 19.6.

Event studies can encounter other problems. For example, the expert must choose the length of time within which the expert will assume that the market adjusts to unexpected news about the particular company involved (sometimes called the “event window”), select or construct the index of comparable stocks against which the defendant’s stock price movement will be considered, and select the period within which that correlative movement will be measured—sometimes called the “estimation window.” *Id.* at 19.4–5. A study might be attacked on the basis that any of these decisions were inappropriate. Moreover, event studies can encounter difficulties when a case involves either interrelated misrepresentations or multiple corrective disclosures made at different times. See Cornell & Morgan, *supra* note 97, at 892, 906–07.

¹⁰⁴ See, e.g., *In re Imperial Credit Indus., Inc. Sec. Litig.*, 252 F. Supp. 2d 1005, 1014–16 (C.D. Cal. 2003) (granting summary judgment to defendants on loss causation and damages in a decision that excludes plaintiffs’ damages expert opinion because the expert’s report was “deficient for failure to provide an ‘event study’ or similar analysis”; observing that, in this case, other factors besides the alleged fraud might have influenced the drop in stock prices; holding that defendants “cannot be held responsible” for such “market events”; finding that “absent an event study or similar analysis, Plaintiffs cannot eliminate that portion of the price decline . . . which is unrelated to the alleged wrong”; and relying on *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993), to exclude the plaintiffs’ report); *In re Executive Telecard, Ltd. Sec. Litig.*, 979 F. Supp. 1021, 1023–28, 1031 (S.D.N.Y. 1997) (granting motion to exclude testimony of plaintiffs’ damages expert; “[t]he reliability of the Expert Witness’ proposed testimony is called into question by his failure to indicate either in his Original or Supplemental Report whether he conducted an ‘event study’ to determine whether [the] stock price was affected by company specific factors exclusive of the challenged fraud”; also quoting the portion of *In re Oracle Securities Litigation*, 829 F. Supp. 1176, 1181 (N.D. Cal. 1993), that concerns event studies); *In re Oracle Sec. Litig.*, 829 F. Supp. at 1180–82 (declining to approve settlement of a class action securities case because of issues involving settlement of a related derivative case but finding plaintiffs’ decision to settle the class action reasonable in part because of difficulties in proving their claim, including the circumstance that the plaintiffs’ damages “analysis fails to distinguish between the fraud-related and non-fraud related influences on the stock’s price behavior”; “[u]se of an event study or similar analysis is necessary more accurately to isolate the influences of information specific to Oracle which defendants allegedly have distorted”; “[a]s a result of his failure to employ such a study, the results reached by [plaintiffs’ expert] cannot be evaluated by standard measures of statistical significance.” Moreover, “defendants’ expert . . . was able to point out numerous instances in which [plaintiffs’ expert’s] estimates reflected, not the influence of fraud, but purely random occurrences”). But one court rejected a challenge to expert damages testimony that was not based on an event study using regression analysis because of the difficulties in conducting such a study given the facts in the case. *RMED Int’l, Inc. v. Sloan’s Supermarkets, Inc.*, 2000 WL 310352, at *5–8 (S.D.N.Y. Mar. 24, 2000) (magistrate judge) (stating that there was no meaningful prefraud history which could constitute a “control period” in which to calculate the normal relationship between the movement of the stock in which the alleged fraud occurred and the market; pointing also to the difficulties created by the circumstance that the alleged fraud was not revealed in a single, clean announcement), *aff’d*, 2000 WL 420548 (S.D.N.Y. Apr. 18, 2000); see also *Greenberg v. Crossroads Sys., Inc.*, 364 F.3d 657, (5th Cir. 2004). The *Greenberg* court recognized that sophisticated analysis may not be necessary to determine statistical significance in cases of large stock price drops:

We realize that whether a drop in a stock’s price is statistically significant will vary depending on the average trading range for that particular stock. A drop of ten percent for a volatile stock may

plaintiffs can show through a defensible event study that a corrective disclosure or the revelation of an omitted fact caused a statistically significant decline in the price of the stock at issue, then plaintiffs may well have relatively smooth sailing on materiality, loss causation, reliance, and the existence of damages, if not their amount.¹⁰⁵ The defendants can still contest liability on elements such as scienter,¹⁰⁶ and quarrel over many aspects of damages computation—including the manner of working a postdisclosure drop back through a class period and the methodology for calculating aggregate damages. Defendants can also argue over which disclosures relate to an alleged fraud and seek to cut damages by contending that all or part of the truth was disclosed earlier than plaintiffs claim. But a defensible event study

not be statistically significant whereas the same drop for a stock with little average movement may be significant. However, we have no difficulty saying that a sixty-three percent drop in this stock following the release of this information was statistically significant.

Id. at 665 n.9.

¹⁰⁵ See *In re Gaming Lottery Sec. Litig.*, 2001 WL 204219, at *17–18, 20–23 (S.D.N.Y. 2001) (event study used by plaintiffs as part of successful effort to obtain summary judgment against nondefaulting defendants, subject to claims process, with the event study used to establish loss causation—which the court here called proximate cause—and damages); *In re Gaming Lottery Sec. Litig.*, 2000 WL 193125 (S.D.N.Y. Feb. 16, 2000) (event study used to prove materiality, loss causation, and damages at hearing following declaration of default; court ordered judgment entered in favor of plaintiffs against defaulting defendant); *In re Cendant Corp. Sec. Litig.*, 109 F. Supp. 2d 235, 264–65 (D.N.J. 2000) (plaintiff expert used an event study as part of an effort to calculate losses and allocate damages in a settlement), *aff'd in relevant part*, 264 F.3d 201 (3d Cir. 2001).

¹⁰⁶ Scienter is an element of a 10b-5 case, and the Supreme Court has defined that term to mean “a mental state embracing intent to deceive, manipulate or defraud.” *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 194 n.12 (1976). Although *Hochfelder* declined to decide whether recklessness would suffice for scienter, all circuits have now held that it does. See 8 LOSS & SELIGMAN, *supra* note 47, at 3685 n.546 (rev. 2004); *Ottman v. Hanger Orthopedic Group, Inc.*, 353 F.3d 338, 343–44 (4th Cir. 2003). The most common definition of recklessness for 10b-5 purposes is “highly unreasonable” conduct “involving not merely simple or even inexcusable negligence, but an extreme departure from the standards of ordinary care . . . which presents a danger of misleading buyers or sellers that is either known to the defendant or so obvious that the [defendant] must have been aware of it.” *Sunstrand Corp. v. Sun Chem. Corp.*, 553 F.2d 1033, 1045 (7th Cir. 1977) (internal quotation marks omitted); see also 8 LOSS & SELIGMAN, *supra* note 47, at 3688–89 & n.549 (identifying the *Sunstrand* standard as the one followed in a majority of circuits). Plaintiffs must in a 10b-5 case allege particular facts raising a strong inference that each defendant acted with scienter. 15 U.S.C. § 78u-4(b)(2) (2000). In civil cases in the Ninth Circuit, plaintiffs must “plead, at a minimum, particular facts giving rise to a strong inference of *deliberate* or *conscious* recklessness.” *In re Silicon Graphics, Inc. Sec. Litig.*, 183 F.3d 970, 979 (9th Cir. 1999) (emphasis added). This Ninth Circuit view of scienter pleading is a minority position. And it is unclear whether *Silicon Graphics* changes the substantive standard for recklessness in Ninth Circuit 10b-5 cases or whether the Ninth Circuit substantive standard is the *Sunstrand* one. See Subcommittee on Annual Review, *Annual Review of Federal Securities Regulation*, 59 BUS. LAW. 689, 871–72 (2004).

Aside from contesting scienter, defendants in a 10b-5 omissions case can also argue that they had no duty to disclose. *Basic v. Levinson*, 485 U.S. 224, 239 n.17 (1988) (“Silence, absent a duty to disclose, is not misleading under Rule 10b-5.”).

connecting a price drop with a corrective disclosure or revelation of a fact the defendants were obligated to disclose at an earlier time can provide plaintiffs with powerful arguments on materiality, loss causation, reliance and damages. Similarly, of course, defendants can use event studies to disprove these elements.¹⁰⁷ And, aside from use in motion practice and trials, event studies can drive settlement negotiations, which are critically important since the overwhelming number of securities cases that are not dismissed will settle.¹⁰⁸

D. The Normative Aspects of the Elements That an Event Study Can Address in a Case Assuming an Efficient Market

Each of the elements to which courts have applied efficient market analysis, and which event studies can prove, implicates normative considerations.

1. Reliance Must Be Reasonable

A plaintiff's reliance must be "reasonable" or "justifiable," which may mean that the plaintiff was not reckless in relying.¹⁰⁹ As the Third Circuit held

¹⁰⁷ See, e.g., *In re World Access*, 310 F. Supp. 2d at 1298–1300 (summary judgment to defense on materiality in part based on defense expert's event study showing that the allegedly false disclosures had no statistically significant positive effect on stock price; same study rebutted fraud-on-the-market presumption of class reliance); *In re N. Telecom Ltd. Sec. Litig.*, 116 F. Supp. 2d 446, 456–62 (S.D.N.Y. 2000) (summary judgment for defendants on loss causation based in part on defense event study concluding that none of the challenged statements resulted in inflation of the stock price); *id.* at 460 (Plaintiffs' expert's response was "fatally deficient in that he did not perform an event study or similar analysis to remove the effects on stock price of market and industry information and he did not challenge the event study performed by defendants' expert."); *Goldkrantz v. Griffin*, 1999 WL 191540, at *4–7 (S.D.N.Y. Apr. 6, 1999) (awarding summary judgment to defendants on loss causation affirmative defenses under §§ 11 and 12 of the Securities Act of 1933—see 15 U.S.C. § 77k(e); 77l(b)—based on event study showing that five of seven statistically significant price declines related to specific news items unconnected to the licensing agreement on which plaintiffs focused, with the other two declines occurring so long after the corrective announcement related to the license that those declines were not caused by it), *aff'd*, 201 F.3d 431 (2d Cir. 1999) (unpublished table decision).

¹⁰⁸ Lisa L. Casey, *Reforming Securities Class Actions from the Bench: Judging Fiduciaries and Fiduciary Judging*, 2003 BYU L. REV. 1239, 1256–57 ("[U]nless dismissed by the court on the pleadings, most class action securities claims settle prior to trial. Recent empirical work indicates that 83% of all resolved securities cases have been settled.") (footnote omitted).

¹⁰⁹ One treatise says that "[a]ny reliance by the plaintiff must be reasonable." 3 HAZEN, *supra* note 37, § 12.10[7], at 352. The treatise adds: "The requirement that the reliance be justifiable echoes the common law." *Id.* at 356. In recent years, much of the reported appellate law on 10b-5 reliance has involved face-to-face transactions, often between sophisticated parties. For example, some decisions consider the effect of detailed deal documents on later claims for securities violations in the deals that those documents paper. Compare *Emergent Capital Inv. Mgmt. v. Stonepath Group, Inc.*, 343 F.3d 189, 196 (2d Cir. 2003) (no reasonable reliance as a matter of law when stock purchase agreement included extensive representations, but none concerning the allegedly misrepresented fact), and *Rissman v. Rissman*, 213 F.3d 381 (7th Cir. 2000)

in *Zlotnick v. TIE Communications*,¹¹⁰ the concept of reasonable reliance applies in a fraud-on-the-market case:

The fraud-on-the-market theory creates a threefold presumption of indirect reliance. First, this court presumes that the misrepresentation affected the market price. Second, it presumes that a purchaser did in fact rely on the price of the stock as indicative of its value. Third, it presumes the reasonableness of that reliance.¹¹¹

(enforcing nonreliance clause in \$17 million stock sale transaction), *with* AES Corp. v. Dow Chem. Co., 325 F.3d 174, 182 (3d Cir. 2003) (refusing, in light of § 29(a) of the Exchange Act, to give "controlling significance" to nonreliance clauses in transaction documents), *cert. denied*, 124 S.Ct. 805 (2003).

Courts have also wrestled with whether plaintiffs can rely on representations contradicted by express language in disclosure documents. Some of the decisions in this setting articulate what amounts to a recklessness standard and evaluate reliance by a multifactor test. *See, e.g.,* Kennedy v. Josephthal & Co., Inc., 814 F.2d 798, 804–05 (1st Cir. 1987) (affirming summary judgment on 10b–5 claim against buyers of units in coal mining partnership where Confidential Offering Memorandum included warnings contradicting alleged misrepresentations by broker; reciting eight factors that courts use "in examining whether reliance on misrepresentations is justified," including sophistication and expertise of plaintiffs, plaintiffs' access to information and plaintiffs' opportunity to detect the fraud; saying that "[j]ustifiable reliance cannot be satisfied by . . . reckless conduct" and that "[w]hen [plaintiffs] closed their eyes and passively accepted the contradictions between [the broker's] statements and the offering memorandum, [they] could not be said to have justifiably relied"); Zobrist v. Coal-X, Inc., 708 F.2d 1511, 1515–19 (10th Cir. 1983) (holding that a purchaser of units in a coal partnership could not have justifiably relied on representations contrary to the description of risks in a private placement memorandum that the buyer did not read; also setting out a list of factors courts consider in determining justifiability of reliance and concluding that the purchaser "acted recklessly by intentionally closing his eyes to and failing to investigate the contradiction" and that the plaintiff's "reckless conduct bars recovery under rule 10b-5").

See also Banca Cremi, S.A. v. Alex Brown & Sons, Inc., 132 F.3d 1017, 1028–33 (4th Cir. 1997) (weighing multiple factors to determine whether reliance was justified; holding, for example, that the foreign bank plaintiff could not prove justifiable reliance on an American brokerage for such matters as whether a particular investment complied with regulations in the bank's home country); Atari Corp. v. Ernst & Whinney, 981 F.2d 1025, 1029–30 (9th Cir. 1992) (holding that a first company buying the stock of a second company could not have relied on the second company's financials where the first company uncovered multiple problems before closing and the agreement included a price adjustment based on a postclosing audit); *id.* at 1030 ("Under these circumstances, [the first company's] continued reliance on the financial statements and the assurances of [the second company] and its investment bankers cannot be justified."); Molecular Tech. Corp. v. Valentine, 925 F.2d 910, 921–22 (6th Cir. 1991) (reversing judgment for plaintiffs because jury verdict was inconsistent in finding both that plaintiffs reasonably relied and (relevant to the common law negligent misrepresentation claims in the case) that plaintiffs were 70% negligent in relying); *id.* at 922 ("[A] finding of seventy-percent (70%) comparative negligence is inconsistent with a finding of reasonable reliance under section 10(b)/rule 10b-5.").

While these cases do not involve efficient market analysis, they demonstrate that the concept of reasonable and justifiable reliance still lives in 10b-5 jurisprudence. *But see* Astor Chauffeured Limousine Co. v. Runnfeldt Inv. Corp., 910 F.2d 1540, 1546 (7th Cir. 1990) (holding that "justifiable reliance is not an independent element in securities litigation" but is "no more than the combination of a material misstatement (or omission) and causation") (emphasis in original).

¹¹⁰ 836 F.2d 818, 822 (3d Cir. 1988).

¹¹¹ *Id.*

Zlotnick added that each of these presumptions might be rebutted.¹¹² While the Third Circuit decided *Zlotnick* in January 1988¹¹³—before the Supreme Court decided *Basic* in March 1988¹¹⁴—the Third Circuit reaffirmed in 2000 that these same assumptions still underlie the application of the FOTM theory,¹¹⁵ confirming also that “a defendant may defeat the presumption of reliance by showing that the plaintiff’s reliance on the market price was actually unreasonable.”¹¹⁶

2. A “Material” Fact Is One That Is Important to a Reasonable Investor Who, in a FOTM Case, Is Assumed To Be a Market Professional

The classic definition of materiality also implicates normative considerations by finding that a fact is material only if a “reasonable” investor would consider the fact important in deciding whether to trade in the stock at hand.¹¹⁷ Courts have used this concept to find that some statements—

¹¹² *Zlotnick* stated that a defendant could rebut the first presumption by “showing that the market did not respond to the misrepresentation,” could rebut the second by “showing that the plaintiff would have purchased even if he had known about the misrepresentation,” and could rebut the third by “showing that the plaintiff knows that a representation is false.” *Id.* These examples are not relevant to this Article, but the concepts in *Zlotnick* are—that application of the FOTM theory should depend on a plaintiff reasonably relying on the price of a stock as an indicator of its value.

Zlotnick held that a plaintiff who sold short before alleged misrepresentations, and covered after the misrepresentations occurred and allegedly inflated the stock price, was not entitled to a fraud-on-the-market presumption. *Id.* at 822–23. “Given Zlotnick’s belief that in January 1983 [when he sold short], the market in [the] stock did not reflect all available information, we do not find it logical to presume that the market did reflect all available information in March, 1983, when he made his covering purchases.” *Id.* On the other hand, the court held that Zlotnick might be able to prove—without the benefit of a presumption—that, when he bought stock to cover his short position, he actually relied on a market price that was actually inflated by defendants’ representations. *Id.* at 824. *Zlotnick*’s holding that a short seller is not entitled to a FOTM presumption has drawn criticism on the basis that “although a short seller (like an options trader) is taking highly speculative risks, he or she should not be said to assume the risk of materially misleading information that has knowingly or recklessly been disseminated into the market.” 3 HAZEN, *supra* note 37, § 12.10[6][B], at 348. Such criticism does not detract from the opinion’s conclusion that reliance on the market must be reasonable.

¹¹³ *Zlotnick*, 836 F.2d at 818.

¹¹⁴ *Basic v. Levinson*, 485 U.S. 224 (1988).

¹¹⁵ *Semerenco v. Cendant Corp.*, 223 F.3d 165, 178–79 (3d Cir. 2000).

¹¹⁶ *Id.* at 179. Again, the Court of Appeals said that one way to show unreasonable reliance would be to demonstrate that “the investor knew, or had reason to know, that the misrepresentations were in fact false.” *Id.* at 179 n.8. Again, the example is not relevant to this Article, but the concept of requiring reasonable reliance in a FOTM case is.

¹¹⁷ In *TSC Indus., Inc. v. Northway, Inc.*, 426 U.S. 438 (1976), the Supreme Court defined materiality, in the context of a proxy statement this way:

An omitted fact is material if there is a substantial likelihood that a *reasonable* shareholder would consider it important in deciding how to vote [T]he omitted fact would have assumed actual

particularly vague and optimistic statements by company personnel—would not be significant to a “reasonable” investor.¹¹⁸ In a fraud-on-the-market case, courts posit that professionals who make the critical recommendations and trades ignore such vague and optimistic statements and thereby act as a *brake* to ensure that the market as a whole does not react to those statements in an unreasonable way.¹¹⁹ Market professionals, who are critical to the process that

significance in the deliberations of the *reasonable* shareholder. Put another way, there must be 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.

Id. at 449 (emphasis added). In *Basic*, the Court adapted that same standard to the case in which a plaintiff claims that a violation of 10b-5 caused him or her to buy or sell a security. 485 U.S. at 231–32. SEC regulations include a virtually identical definition. 17 C.F.R. §§ 230.405, 240.12b-2 (2004) (“The term ‘material’ . . . limits the information required to those matters to which there is a substantial likelihood that a reasonable investor would attach importance in determining whether to buy or sell the securities registered.”).

¹¹⁸ See, e.g., *In re K-Tel Int'l, Inc. Sec. Litig.*, 300 F.3d 881, 897 (8th Cir. 2001) (“[A] fact is immaterial ‘[w]here a reasonable investor could not have been swayed’ by the misrepresentation. Immaterial statements include vague, soft, puffing statements or obvious hyperbole.”) (citations omitted); *EP MedSystems, Inc. v. EchoCath, Inc.*, 235 F.3d 865, 872 (3d Cir. 2000) (stating that puffery is “understood by reasonable investors as such” and therefore “would not alter the total mix of relevant information available to a reasonable investor”) (internal quotation marks and citations omitted).

¹¹⁹ Plaintiffs in *Raab v. General Physics Corp.*, 4 F.3d 286 (4th Cir. 1993), sued in part on statements in General Physics’s annual report saying that “[r]egulatory changes . . . have created a marketplace for the DOE Services Group with an expected annual growth rate of 10% to 30% over the next several years” and “the DOE Services Group is poised to carry the growth and success of 1991 well into the future.” *Id.* at 289. Affirming dismissal of the complaint, the Court of Appeals characterized the “whole discussion of growth [as] plainly by way of loose prediction” with a “range of rates . . . as well as the time for their achievement . . . [that was] anything but definite.” *Id.* at 290. Critically, the court added “no reasonable investor would rely on these statements, and they are certainly not specific enough to perpetrate a fraud on the market. Analysts and arbitrageurs rely on facts in determining the value of a security, not on mere expressions of optimism from company spokesmen.” *Id.* The court accordingly found that the statements from the annual report were not material. *Id.*; see also *Phillips v. LCI Int'l, Inc.*, 190 F.3d 609, 617 (4th Cir. 1999) (“Because in a fraud-on-the-market case the ‘reasonable investor’ is not an individual plaintiff, but the market itself, a statement cannot be material if the hypothetical reasonable investor—that is, the market—would not regard the statement, in context, as significant. The market may well take a more jaundiced view of corporate statements—both optimistic puffery and ‘holding pattern’ statements like the one at hand—than an individual investor.”); *Suna v. Bailey Corp.*, 107 F.3d 64, 72 (1st Cir. 1997) (quoting *Raab*’s comments on analysts and arbitrageurs relying on “facts” to determine the “value” of securities); *Shaw v. Digital Equip. Corp.*, 82 F.3d 1194 (1st Cir. 1996). The *Shaw* court observed,

[B]y its underlying rationale, the [FOTM reliance] presumption . . . shifts the critical focus of the materiality inquiry. In a fraud-on-the-market case the hypothetical ‘reasonable investor,’ by reference to whom materiality is gauged, must be ‘the market’ itself, because it is the market, not any single investor, that determines the price of a publicly traded security Thus, a claim that a fraud was perpetrated on the market can draw no sustenance from allegations that defendants made overly-optimistic statements, if those statements are ones that any reasonable investor (ergo, the market) would easily recognize as nothing more than a kind of self-directed corporate puffery. The market is not so easily duped, even granted that individual investors sometimes are.

Id. at 1218 (internal quotation marks omitted). *Shaw* has been superseded by 15 U.S.C. § 78u-4(b)(2) (2000)

translates new information into new prices, thereby ensure that the market does not run away with itself in response to overly optimistic puffery.

3. *Loss Causation Places Legal Responsibility for Harm on Those Who Should Justly Bear It*

Some decisions analogize loss causation to proximate cause,¹²⁰ which in tort law largely hinges on questions of justice.¹²¹ The Second Circuit has said that:

In the end, whether loss causation has been demonstrated presents a public policy question, the resolution of which is predicated upon notions of equity because it establishes who, if anyone, along the causal chain should be liable for the plaintiffs' losses.¹²²

Courts sometimes say, in the securities context, that requiring a plaintiff to establish loss causation prevents the securities laws from degenerating into a form of investor insurance.¹²³

on an unrelated issue of scienter pleading, as recognized by *Greebel v. FTP Software, Inc.*, 194 F.3d 185, 196–97 (1st Cir. 1999). More recently, *Asher v. Baxter International Inc.*, observed that “market professionals are savvy enough to discount projections appropriately.” 377 F.3d 727, 732 (7th Cir. 2004), *cert. denied*, 125 S. Ct. 1639 (2005).

¹²⁰ See *Emergent Capital Inv. Mgmt. v. Stonepath, Inc.*, 343 F.3d 189, 197 (2d Cir. 2003) (quoted *supra* note 90); *Huddleston v. Herman & Maclean*, 640 F.2d 534, 549 (5th Cir. 1981) (“[P]laintiff must prove . . . that the untruth was in some reasonably direct, or proximate, way responsible for his loss”); *Bruschi v. Brown*, 876 F.2d 1526, 1530 (11th Cir. 1989) (“[P]laintiff must prove both actual causation, or ‘transaction causation,’ and proximate causation, or ‘loss causation’”); see also *Robbins v. Koger Props., Inc.*, 116 F.3d 1441, 1447 (11th Cir. 1997) (quoting *Huddleston*). Some decisions also say that loss causation encompasses the concept that the damages suffered by the plaintiff were a foreseeable consequence of the misrepresentation or omission. See *Emergent Capital*, 343 F.3d at 197.

¹²¹ See 1 DAN B. DOBBS, *THE LAW OF TORTS* § 180, at 443 (2001) (“The proximate cause issue, in spite of the terminology, is not about causation at all but about the appropriate scope of responsibility.”); *id.* § 181, at 446 (“Judgments about proximate cause are not precise, but, at least roughly speaking, they reflect the ideas of justice as well as practicality”); *id.* § 182, at 448 (“[T]he term proximate cause as used in this book refers to issues of policy and justice about the scope of the risks and the scope of appropriate liability of a defendant whose negligence has in fact caused the plaintiff’s harm.”). In its recent loss causation decision, the Supreme Court remarked on the “common law roots of the securities fraud action.” *Dura Pharm., Inc. v. Broudo*, 125 S. Ct. 1627, 1632 (2005).

¹²² *Suez Equity Investors, L.P. v. Toronto-Dominion Bank*, 250 F.3d 87, 96 (2d Cir. 2001); see also *Bruschi*, 876 F.2d at 1530 n.6 (“While courts often define proximate cause in terms of . . . how ‘direct’ the connection is between the defendant’s misconduct and the plaintiff’s loss, or in terms of the foreseeability of the plaintiff’s loss, it appears that policy considerations external to the transaction between the parties actually govern the courts’ decisions.”).

¹²³ *Broudo*, 125 S. Ct. at 1633 (stating that the objective of the securities laws is “not to provide investors with broad insurance against market losses, but to protect them against those economic losses that misrepresentations actually cause”); see also *Huddleston*, 640 F.2d at 549 (“Absent the requirement of

4. *Damages Are Not Designed To Insure Investors Against All Risk but Are Limited to Losses That the Defendant Caused and Do Not Include Loss from Movement of the Market as a Whole or Other Nonfraud Causes*

Similarly, the adjustment to remove the effect on damages of nonfraud influences—such as general market movement, new information about the issuer's industry, and news about the issuer that is unrelated to the asserted fraud—is critical because “damages under Rule 10b-5 are limited to those proximately caused by defendant's misstatement [or] omission.”¹²⁴ It would be unfair to impose on defendants, as damages, a loss in stock value caused by nonfraud factors.

Remember, too, that this Article concerns “open market” securities cases—ones in which the plaintiffs did not trade directly with the defendants but simply bought or sold on the market. When an issuer defendant (or an officer or director defendant) did not sell or buy securities during the period of the alleged fraud, those defendants may not have made any money by the fraud or, in any event, may not have made as much money as plaintiffs lost. The circumstance that the measure of damages is the trader's loss rather than the wrongdoer's gain therefore raises the possibility that at least in some cases the damages awarded are unfair or inefficient—in the limited sense that the violator pays more than he or she profited from the wrongdoing—even when damages are restricted to those that are caused by the fraud.¹²⁵ But that restriction limits such unfairness or inefficiency to some degree.

causation, Rule 10b-5 would become an insurance plan for the cost of every security purchased in reliance upon a material misstatement or omission.”). *Huddleston* then gave the example of an investor who purchases stock in a shipping company in reliance on a misrepresentation that the company's one ship has more capacity than it has in fact. However, the offering document reveals that the ship is not insured. “One week after the investment the vessel sinks as a result of a casualty and the stock becomes worthless. In such circumstances, a fact-finder might conclude that the misrepresentation was material and relied upon by the investor but that it did not cause the loss.” *Id.* at 549 n.25. As an example more relevant to this Article, “if the loss was caused by an intervening event, like a general fall in the price of Internet stocks, the chain of causation will not have been established.” *Emergent Capital Inv. Mgmt. v. Stonepath Group, Inc.*, 343 F.3d 189, 197 (2d Cir. 2003).

¹²⁴ 3 HAZEN, *supra* note 37, § 12.12[3], at 386.

¹²⁵ Easterbrook and Fischel put it nicely:

The hard question is why we should ever see loss-based remedies. Although some multiple of the defendant's gain is apt to be a good proxy for the net harm of a violation, the investor's loss in some kinds of cases could be wildly off the mark. Consider a case in which a manager of a firm recklessly announces that the firm has made a fabulous invention that will be worth billions. The price of the firm's stock soars. Two days later the manager sheepishly announces that it was all a false alarm, and the price returns to the original level. Everyone who bought the stock during these two days suffers a substantial loss; neither the manager nor the firm gets any gain. Those who violated the rule get no profit.

5. *How Theory Links the Mechanical Efficiency Documented by an Event Study to the Normative Aspects of 10b-5 Elements*

As set out above, an event study is the preferred means in securities litigation to determine whether a misrepresentation, a corrective disclosure, or the revelation of an omitted fact had a statistically significant effect on the price of an issuer's stock. The stock price effect, established by an event study, can have a terrific impact on the parties' and a court's evaluation of reliance, materiality, loss causation, and damages. But an event study is simply a mechanical test. The event study does not connect to the normative aspects of these elements except when mechanical market efficiency makes that connection.

The fully articulated efficient market model that attracts the courts bridges the gap between mechanical efficiency and the normative aspects of materiality, reliance, causation, and damages by positing this sequence:

- Defendants make the allegedly false statement and the stock price goes up.
- Defendants subsequently reveal the "truth" and the stock price goes down.
- An event study shows, net of other influences, the price increase attributable to the falsehood and the price decline attributable to revelation of the truth.
- Professionals in the market control the prices—as they rise and fall—so that even though those prices may not be "right," they are, based on the information (and misinformation) available, a fair approximation of value (1) before the falsehood, (2) after the falsehood but before the corrective disclosure, and (3) after verity emerges.

When all those conditions combine, the mechanical use of the event study can facilitate justice. It is reasonable for an investor to rely on a price set by professionals who are trying, if not always succeeding, to price securities according to their value—as estimated, for example, by a cash flow analysis discounted for time and risk. A statement that causes such professionals to move a security's price should be material. As a matter of public policy, it is

Easterbrook & Fischel, *supra* note 20, at 635. Alexander has made the same point. See Janet C. Alexander, *Rethinking Damages in Securities Class Actions*, 48 STAN. L. REV. 1487, 1497-98 (1996). Of course, from the viewpoint of the injured investor, there is no unfairness in saddling the wrongdoer with all of the loss that he or she has caused regardless of the difference between that loss and the wrongdoer's gain.

arguably just that securities losses caused by a false statement about a company be visited upon those speaking or writing the falsehood, when the statement concerns matters fundamental to the value of the company as evaluated by the market professionals. And—putting aside the difference between loss to investors and gain to violators—it is perhaps right to measure by market price changes the amount of damages those false speakers should pay when their statement causes the market pros to move a security's price from one level, that is rationally set given the falsehood, to a lower level, that is also rationally set after the pros receive corrective information and buy and sell as a result.

Turn now to the Internet and telecommunications bubble. Focus on the application of the efficient market theory, through event studies, to open market 10b-5 cases based on bubble facts. Consider whether mechanical efficiency is sufficient, in bubble cases, to sustain a defensible connection between event study results and the normative values inherent in 10b-5 elements. Ask whether bubble cases display the neat pattern set out above.

IV. THE SHAPE OF THE INTERNET AND TELECOMMUNICATIONS BUBBLE, SEVERANCE OF PRICE FROM VALUE AND SEVERANCE OF MECHANICAL EFFICIENCY FROM THE MORAL CONTENT OF 10B-5 ELEMENTS

To begin investigating the bubble's effect on EMT analysis in securities cases, this Part first describes the bubble. Then this Part considers whether, in light of the bubble's gross characteristics, the use of mechanical market efficiency in 10b-5 bubble cases produces just results.

A. *The Anatomy of The Bubble*

Figure 1 shows the NASDAQ Composite Index,¹²⁶ the S&P 500 Index,¹²⁷ the Morgan Stanley Internet Index (the "MSII"),¹²⁸ and the S&P 500

¹²⁶ The NASDAQ Composite is a capitalization-weighted index based on the total market value of all the common stock (and similar) issues traded through NASDAQ. NASDAQ, *Index Descriptions*, available at <http://quotes.nasdaq.com/reference/IndexDescriptions.stm> (last visited Apr. 30, 2005).

¹²⁷ The S&P 500 index is a broadly based capitalization-weighted index of 500 stocks of large U.S. companies. See Standard & Poors, *S&P 500*, fact sheet (copy on file with author); Roger J. Bos, *Index Calculation Primer* 8 (July 17, 2000), available at <http://orgs.jmu.edu/MIF/Misc/HowToCalculateAnIndex.pdf>.

¹²⁸ The Morgan Stanley Internet Index includes selected companies from several Internet sectors. See the November 26, 1999, announcement of this index, at <http://www.amex.com/amextrader/tdrInfo/data/axNotices/1999/tickermox.html> (last visited Apr. 30, 2005) [hereinafter Internet Index Announcement]; Morgan Stanley,

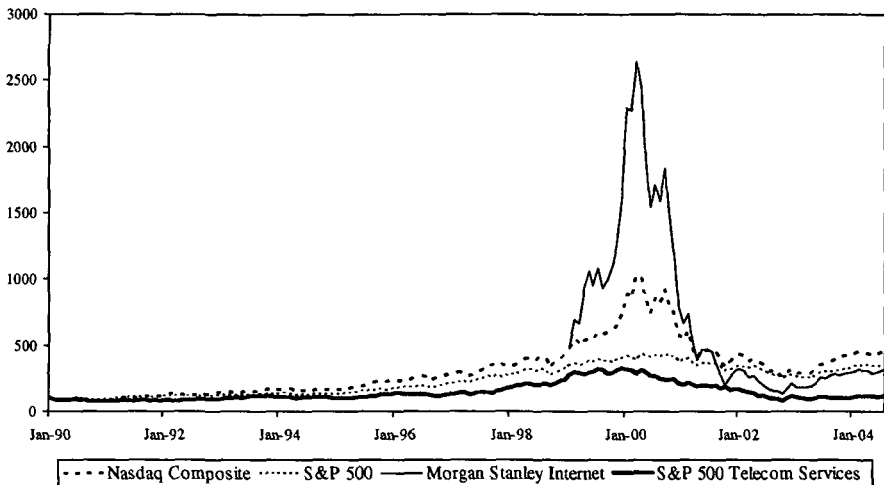
Telecommunications Services Index.¹²⁹ In Figure 1, the NASDAQ Composite, the S&P 500, and the S&P 500 Telecom are indexed to 100 in January 1990, and the MSII is indexed to the NASDAQ Composite on the first date for which the MSII is reported.

Figure 1 shows a dramatic increase from the beginning of 1998 (and even more particularly from the middle of that year) in the technology heavy NASDAQ Composite. It also shows a rocket-like rise in the MSII commencing as soon as that index begins in 1999. The chart then displays a precipitous fall in those two indices beginning in 2000 and continuing through 2001. Figure 1 also shows the S&P 500 Telecommunication Services Index increasing and then decreasing during roughly the same period, although in a less dramatic way. Without quibbling over the definition of a stock market "bubble," this Article will call the large and comparatively fleeting explosion and collapse of stock prices from the beginning of 1998 to the end of 2001 "The Bubble."

Press Release: American Stock Exchange LLC Lists Options Based on Morgan Stanley Internet Index (Apr. 10, 2000) (copy on file with author). The MSII is equal weighted rather than capitalization weighted. See Dagen McDowell, *Internet Index Funds: Should You Assume the Risk?*, available at <http://www.thestreet.com/funds/deardagen/972720.html> (June 22, 2000).

¹²⁹ The S&P 500 Telecom Services Index consists of those companies in the S&P 500 that are in the Telecommunications Services sector under the Global Industry Classification Standard. Standard & Poors, *S&P 500 Sector Indices Methodology* (copy on file with author).

Figure 1: Comparison of Price Performance: January 1990–July 2004



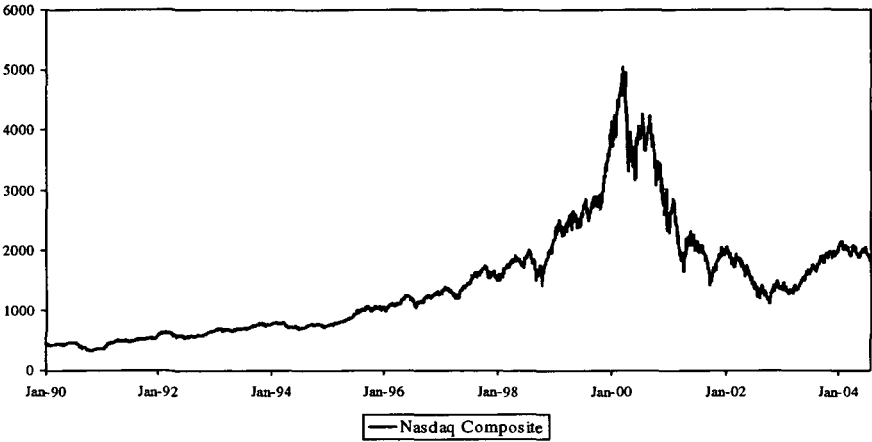
Source: IDC; Bloomberg; monthly data

Note: The Morgan Stanley Internet Index is indexed to the NASDAQ Composite Index on the date that data are first available. The S&P 500 Index, the NASDAQ Composite Index, and the S&P 500 Telecom Services Index are all indexed to 100 at the start of January 1990.

To put the price movement in additional perspective, consider the NASDAQ Composite, the MSII, and the S&P 500 Telecom in their own numbers, not as correlated in Figure 1. The first three panels of Figure 2 show these indices individually, employing for each the benchmark that it uses today instead of the benchmarking used in Figure 1.

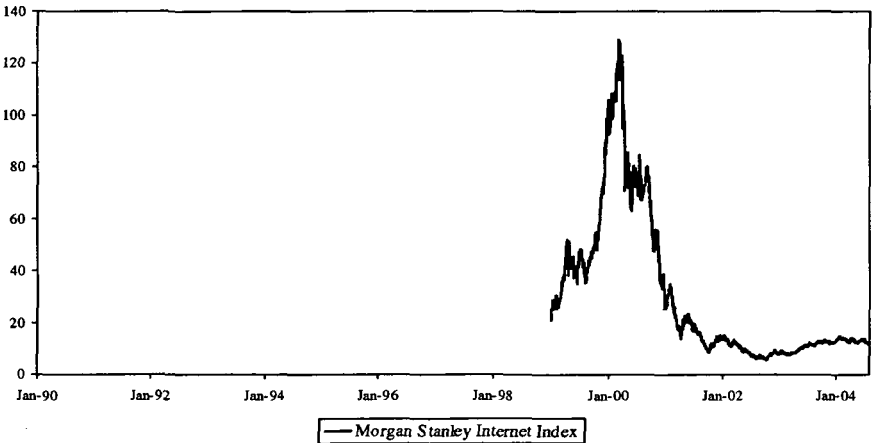
Figure 2: Each Index Individually

Panel A: NASDAQ Composite Index Price: January 1990–July 2004



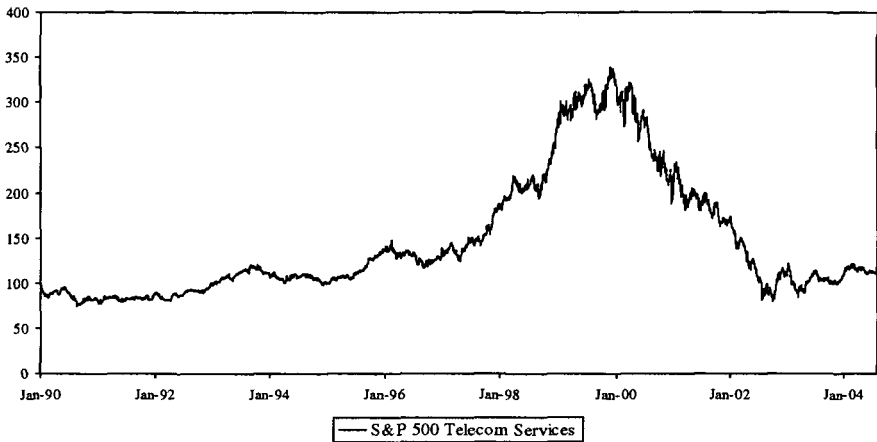
Source: IDC; daily data

Panel B: Morgan Stanley Internet Index Price: January 1990–July 2004

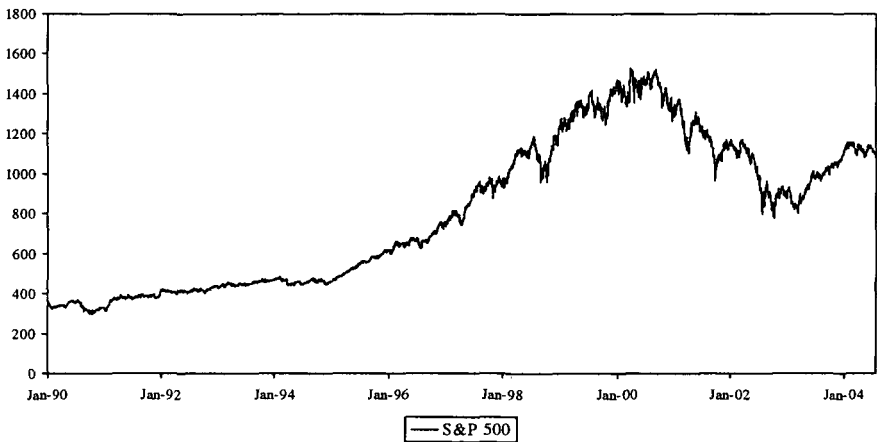


Source: IDC; Bloomberg; daily data

Panel C: S&P 500 Telecommunication Services Index Price:
January 1990–July 2004



Panel D: S&P 500 Index Price: January 1990–July 2004



The NASDAQ Composite (Panel A) began 1998 at about 1574. It reached its closing peak at 5048.62 on March 10, 2000. The Composite was back down to 1950.40 by the end of 2001. The NASDAQ more than tripled, then gave back most of the gain during the four years, 1998 through 2001.

The MSII (Panel B) only includes values for dates on and after December 31, 1998,¹³⁰ and (as currently benchmarked) began 1999 at about 21. The Internet index shot up to peak at 128.97 on March 9, 2000, but descended to 13.86 by the end of 2001. The MSII more than sextupled, then fell all the way back (and more), in three years.

The S&P 500 Telecommunication Services Index (Panel C) began 1998 at approximately 183. It rose to a high of 339.28 on November 29, 1999, but declined to approximately 168 at the close of 2001. The telecom index increased by about 85%, then lost all of that increase (and more) during 1998 through 2001.

Even the S&P 500 (Panel D) showed the up-and-down movement, though to a more modest extent. This broader-based index began the first trading day of 1998 at about 970, achieved a closing peak of 1527.46 on March 24, 2000, then fell to 1148.08 by the end of 2001. The S&P 500 gained about 57%, then lost all of that and more, during the four years from 1998 through 2001.¹³¹

The huge swings during 1998 through 2001—particularly in the NASDAQ Composite, the MSII, and the S&P Telecom indices—suggest that the enormous increase, and then decrease, in stock prices was driven by something more than a rational assessment of four years' information on prospective discounted cash flow.

That intuitive thought finds support as we turn from aggregate statistics to individual companies. The Bubble produced some bizarre market valuations.

- Established in 1997, eToys sold toys over the Internet, went public in 1999, and shortly reached a stock value of \$8 billion—more than Toys “R” Us’s \$6 billion market capitalization—even though eToys enjoyed only \$30 million in FY 1998 sales compared to Toys “R”

¹³⁰ Internet Index Announcement, *supra* note 128 (stating that the index was assigned an initial value for December 31, 1998).

¹³¹ Another way to think about the tremendous inflation of stock market prices in 1999 and early 2000 is to consider price/earnings (“P/E”) ratios. The historical P/E median for the S&P 500—using trailing twelve-month earnings—is 13.7. That ratio was more than 30 in March 2000. Mark Hulbert, *Under All Those Apples and Oranges, an Overvalued Market*, N.Y. TIMES (Nat. ed.), Aug. 15, 2004, § 3, at 5.

Us's \$11.2 billion and even though eToys' profits were a negative \$28.6 million, while Toys "R" Us's were a positive \$376 million.¹³²

- In early 1999, the market capitalization of Amazon.com reached \$30 billion, having increased 20 times since the beginning of 1998, and Amazon's market cap was seven times the combined market values of the two largest booksellers in the United States—Borders Group and Barnes & Noble, Inc.¹³³
- With no earnings and revenues of only \$35 million, Priceline.com went public on March 30, 1999, issuing shares at \$16.¹³⁴ The stock closed at \$68 on its first day of trading, giving it a market capitalization of almost \$10 billion, exceeding that of United Airlines, Continental Airlines, and Northwest Airlines combined.¹³⁵

The market madness was particularly notable in price pops immediately following initial public offerings ("IPOs").

- Broadcast.com conducted an IPO on July 17, 1998, following a 1997 year in which the company had lost \$6.5 million on revenues of \$6.9 million; the stock debuted at \$18 but rose to \$62.75 by the end of the first day on the market—a gain of 250%.¹³⁶
- After losing \$11.5 million on just \$2.7 million revenues in the first three quarters of 1998, TheGlobe.com conducted an IPO on November 13.¹³⁷ While the issue went out at \$9 per share, it jumped to \$63.50 by the close of first day trading, a 600% increase.¹³⁸
- In December 1999, VA Linux enjoyed a nearly 700% gain on its first trading day.¹³⁹

¹³² ROBERT J. SHILLER, *IRRATIONAL EXUBERANCE* 176 (Broadway Books 2001) (2000).

¹³³ ANDREI SHLEIFER, *INEFFICIENT MARKETS: AN INTRODUCTION TO BEHAVIORAL FINANCE* 154 (2000).

¹³⁴ JOHN CASSIDY, *DOT.CON* 3, 218–19 (Perennial 2002).

¹³⁵ *Id.* at 3. This was well before September 11, 2001 and the subsequent and extreme difficulties encountered by the airline industry.

The examples in the text were not aberrations. Cassidy's book includes a table of selected companies, showing among other things their issue prices, their share prices at the end of the first day of trading, their all-time share price highs, and their market capitalizations on March 10, 2000, and a year and a half later on August 31, 2001. *Id.* at 368–83. Many stocks in the table experienced very large first-day gains, and many of the companies issuing the stocks enjoyed huge market capitalizations on March 10, 2000, which had plummeted by August 31, 2001.

¹³⁶ *Id.* at 182.

¹³⁷ *Id.* at 196.

¹³⁸ *Id.* at 196–97.

¹³⁹ *Id.* at 260.

These examples reflect overall numbers that show a dramatic increase, particularly in 1999 and 2000, in both the first-day gains on IPOs and the percentage of companies going public without profits. In 1997, the average first day return on IPO stocks was only 13.8%.¹⁴⁰ Day-one returns rose to 22.3% in 1998, shot up to 71.7% and 56.1% in 1999 and 2000, respectively, then fell to 14% in 2001.¹⁴¹ As to the profitability of the firms IPOing their stocks:

In the 1980s, only 19 percent of firms had negative earnings [in the most recent 12 months] before going public. This gradually increased to 37 percent by 1995 to 1998, and then rose precipitously to 79 percent during the Internet bubble [in 1999 and 2000]. . . . During the bubble, firms with no immediate prospect of becoming profitable became common. For example, public forecasts for eToys projected no profits for at least two years. At the time of going public in May 1999, forecasted [earnings per share] was -\$0.27 for 1999 and -\$0.55 for 2000. These turned out to be overly optimistic forecasts, as eToys liquidated in 2001.¹⁴²

B. The Significance of Mechanical Efficiency During The Bubble

These numbers are so extreme that we do not need an economist to interpret them. Something happened during The Bubble to sever the relationship between the price of stock and the underlying fundamental value of the companies issuing stock. That fact, by itself, suggests that we should be careful about attributing importance to mechanical efficiency in Bubble cases. It could be quite true that, during The Bubble, stocks moved in response to

¹⁴⁰ Jay R. Ritter & Ivo Welch, *A Review of IPO Activity, Pricing and Allocations*, 57 J. FIN. 1795, 1797 (2002).

¹⁴¹ *Id.* Ritter and Welch put first-day returns during The Bubble in perspective:

From 1980 to 1994, only 15 out of 3,614 IPOs doubled in value on their first day of trading. During 1995 to 1998, 34 out of 1,752 IPOs doubled on the first day. In the Internet bubble years of 1999 to 2000, 182 out of 803 offerings doubled in price on the first day, with the last occurrence in November 2000.

Id. at 1802 n.5.

Plaintiffs in the consolidated Initial Public Offering cases allege that the quick price increases resulted from a conspiracy to manipulate the stocks after IPOs. *See In re Pub. Offering Sec. Litig.*, 241 F. Supp. 2d 281, 315 (S.D.N.Y. 2003) (describing the alleged manipulation by quoting paragraphs fourteen through sixteen of plaintiff's Master Allegations). The court in those cases denied the motion to dismiss 10b-5 manipulation claims against IPO underwriters that allocated stock for distribution to initial purchasers. *Id.* at 385-92. This Article does not attempt to determine whether the alleged IPO conspiracy existed or, if it did, what the interaction was between that conspiracy and the market characteristics described by behavioral finance.

¹⁴² Ritter & Welch, *supra* note 140, at 1801; *see also id.* at 1800 tbl.2.

information. But the circumstance that prices were no longer grounded in value suggests the strong possibility that the prices from which stocks moved and the prices to which they moved were not rational. Indeed, the crazy prices and wild market movements suggest that in some cases prices may have changed in response to information even when rational market participants would not have bought or sold on the information at all. Documenting, through an event study, the relationship during The Bubble between an announcement and price movement—employing a technique relying on nothing more than mechanical efficiency—may simply document irrational investor behavior.

If that is so, then it may have been unreasonable for investors to rely on market prices during The Bubble, and information that moved prices may have been immaterial because it would not have motivated a reasonable buyer or seller. It may be unjust to say that such information legally caused plaintiff losses, and it may be wrong to measure the damages awarded against defendants by the drop from one outrageous price to a second outrageous price.

But the stock market numbers—as compelling as they are by themselves—tell only a part of the story. Developing finance theory, the near inversion of professional and amateur investor influence during The Bubble and regulator concern that some of the key market participants were not predominantly acting on rational analysis all contribute to our sense that the stock market did not display, during The Bubble, the characteristics that the courts ascribe to an efficient market. And so, turn next to explanations of *how* the market actually worked as it generated the astonishing numbers that Part IV.A reviewed.

V. THEORETICAL AND EMPIRICAL CHALLENGES TO MARKET EFFICIENCY, A BEHAVIORAL FINANCE EXPLANATION OF THE BUBBLE, AND THE QUESTIONS THAT EXPLANATION RAISES FOR USE OF EFFICIENT MARKET THEORY IN SECURITIES LITIGATION

Implicit in the notion of an efficient market—even a mechanically efficient market as courts understand the securities market to be—is the assumption that the market acts rationally. The market may not yield the “right” prices, but at least the prices make some sense. There may be some investors out there betting hunches or simply putting their money in hot stocks because everyone else is doing so and others have made recent, quick killings. But these amateurs are restrained by the professionals who wield the big money, read the fine print in the annual reports, slice and dice the numbers to get at the

financial substance of listed companies, and—through their purchases and sales—bring any prices that are out of line (given what is publicly known about each issuer) back to a sensible level.

A. Significant Academic Thought Now Argues That the Market Does Not Act Rationally

A goodly section of academic thought now challenges this picture of market rationality. One school of challengers advances what it calls behavioral finance or behavioral economics. “At the most general level, behavioral finance is the study of human fallibility in competitive markets.”¹⁴³ Behavioral finance posits that investors do not always act rationally;¹⁴⁴ that in fact many of

¹⁴³ SHLEIFER, *supra* note 133, at 23. Several books provide accessible initiation into this discipline. Andrei Shleifer’s *Inefficient Markets*, is probably the best single volume. See *id.* *Irrational Exuberance*, *supra* note 132, is also quite good and focuses on the recent stock market bubble. LAWRENCE A. CUNNINGHAM, *OUTSMARTING THE SMART MONEY: UNDERSTAND HOW MARKETS REALLY WORK AND WIN THE WEALTH GAME* (2002), is more colloquial in style and seeks to impart not just behavioral theories but the investment strategies that they imply as well.

ROBERT A. HAUGEN, *THE NEW FINANCE: OVERREACTION, COMPLEXITY, AND UNIQUENESS* (2004), combines sparse prose with many graphics to take the reader through a large number of studies by academics and investment professionals. The behavioralists rely on many of these studies, and Haugen acknowledges that his work “embrace[s] themes that coincide with some of the paradigms of behavioral finance.” *Id.* at 116. But Haugen is not a member of that school. He does not believe that it is profitable to try to explain stock price movements by focusing on the psychology or rationality of individual investors, when large numbers of complicated investor interactions, in the aggregate, produce stock prices. *Id.* at 116–35. Haugen’s book is designed both to summarize studies documenting that the market is inefficient and to show how investors can make money by purchasing value stocks.

There are many, many books that present the traditional efficient market theory. BURTON G. MALKIEL, *A RANDOM WALK DOWN WALL STREET* (8th ed. 2003), was updated and republished in 2003. It is a classic. Malkiel is a professor at Princeton.

¹⁴⁴ Says Shleifer:

To begin, it is difficult to sustain the case that people in general, and investors in particular, are fully rational. At the superficial level, many investors react to irrelevant information in forming their demand for securities; as Fischer Black (1986) [*Noise*, *supra* note 20] put it, they trade on noise rather than information. Investors follow the advice of financial gurus, fail to diversify, actively trade stocks and churn their portfolios, sell winning stocks and hold on to losing stocks thereby increasing their tax liabilities, buy and sell actively and expensively managed mutual funds, follow stock price patterns and other popular models.

SHLEIFER, *supra* note 133, at 10. “Economists who understand behavioral psychology know that traders act on hunches as well as information. Markets treat such ill-informed trading and well-informed trading the same.” CUNNINGHAM, *supra* note 143, at 23. And “a substantial amount of stock pricing is based on trading by investors who do not accurately perceive underlying business values, and hence produce prices that do not equal those values. So investor sentiment, rather than rational economic calculation, contributes significantly to establishing stock prices.” *Id.* at 13.

them act irrationally in ways that modern psychology explains and predicts;¹⁴⁵ that the irrationality of one of these investors does not cancel out the irrationality of another because most investors exhibit the same psychological tendencies;¹⁴⁶ and that the professionals in the market cannot always counterbalance this irrationality¹⁴⁷ and may at times even contribute to it.¹⁴⁸ Behavioral finance is today well entrenched in academia.¹⁴⁹

¹⁴⁵ The motivation behind irrational investing is sometimes called "investor sentiment" and "is consistent with both the available evidence on stock returns and some of the most robust psychological theories of belief formation." SHLEIFER, *supra* note 133, at 112; *see also* CUNNINGHAM, *supra* note 143, at 21 ("American psychologists have uncovered a rainbow of cognitive biases that play a crucial role in influencing stock market prices. Scores of research articles chronicle a bewildering number of biases, at least 50, though they arise from a few core characteristics of human behavior.").

¹⁴⁶ Even if there are some irrational traders in the market, the market as a whole could still be efficient if "the irrational investors . . . trade randomly. When there are large numbers of such investors, and when their trading strategies are uncorrelated, their trades are likely to cancel each other out." SHLEIFER, *supra* note 133, at 3. The problem is this:

The psychological evidence shows precisely that people do not deviate from rationality randomly, but rather most deviate in the same way. To the extent that unsophisticated investors form their demands for securities based on their own beliefs, buying and selling would be highly correlated across investors. Investors would not trade randomly with each other, but rather many of them would try to buy the same securities or to sell the same securities at roughly the same time. This problem only becomes more severe when the noise traders behave socially and follow each others' mistakes by listening to rumors or imitating their neighbors Investor sentiment reflects the common judgment errors made by a substantial number of investors, rather than uncorrelated random mistakes.

Id. at 12 (internal quotations omitted).

¹⁴⁷ These academics contend, for example, that professional money managers are reluctant to aggressively bet against mispriced securities in part because the managers' performance is measured over short periods of time and in relation to indices (such as the S&P 500). This being the case, the professionals tend not to deviate too greatly from their measuring yardsticks. HAUGEN, *supra* note 143, at 7, 17, 112-13; *see also* CUNNINGHAM, *supra* note 143, at 42.

¹⁴⁸ *See infra* Part V.A.2.b. It is enough here to note that the biases of professional managers arguably introduce distortions into the "efficient market."

Professional money managers are of course themselves people, and as such are subject to the same biases as individual investors. But they are also agents who manage other people's money, and this delegation introduces further distortions For example, professional managers may choose portfolios that are excessively close to the benchmark that they are evaluated against, such as the S&P 500 Index, so as to minimize the risk of underperforming this benchmark. They may also herd and select stocks that other managers select, again to avoid falling behind and looking bad They may artificially add to their portfolios stocks that have recently done well, and sell stocks that have recently done poorly, to look good to investors who are getting end-of-year reports on portfolio holdings.

SHLEIFER, *supra* note 133, at 12-13.

¹⁴⁹ The authors of the books referenced in *supra* note 143 are all academics. Professor Shleifer teaches economics at Harvard, Professor Shiller at Yale. Haugen is a former professor of finance at the University of California, Irvine. Professor Cunningham teaches law at the Boston College Law School.

1. *An Introduction to the Behavioral Challenge: Market Overreaction to Perceived Trends*

Some part of the scholarship challenging the efficient market hypothesis intertwines with “value investing” and a now-renowned study by Eugene Fama and Kenneth French.¹⁵⁰ A review of this study, related studies, and the behavioral interpretation of that body of work serves as a useful introduction to the arguments against the efficient market model.

Fama and French divided a sample set of firms into deciles, using the companies’ book value-to-market capitalization ratios at the end of 1962. Those firms sporting the highest 10% of those ratios fell into one decile, those with the next highest 10% of those ratios into the next decile, and so forth. Fama and French further divided the deciles with the highest and lowest ratios in half, so that they had twelve groups of companies—eight deciles and four vingtiles. The stocks of each of the twelve groups of companies became a notional portfolio on which Fama and French computed monthly equal-weighted returns from the middle of 1963 through the middle of 1964. Fama and French then reset the portfolios, this time using the book value-to-market capitalization ratios at the end of 1963, and computed monthly returns on each portfolio from the middle of 1964 through the middle of 1965. They continued this process, resetting portfolios on an annual basis and measuring returns through 1990, then they computed the time-series average of the monthly returns for each portfolio. The professors found that the average returns on these hypothetical portfolios almost uniformly decreased as the book-to-market ratios decreased.¹⁵¹

Their books, of course, build on a wealth of studies by others. This Article will not attempt a comprehensive survey of that behavioralist literature. The point is that challengers of the efficient market theory are well established, and the efficient market hypothesis no longer provides the exclusive paradigm for serious financial thought and research. Indeed, the Nobel committee in 2002 awarded its Memorial Prize in Economic Science to Daniel Kahneman, a professor of psychology and public affairs at Princeton, and Vernon L. Smith, a professor of economics and law at George Mason University. In reporting the award, the *New York Times* said that both of the professors “tested the limits of the standard economic theory of choice in predicting the actions of real people.” Daniel Altman, *A Nobel That Bridges Economics and Psychology*, N.Y. TIMES (Late ed.), Oct. 10, 2002, at C1. The article went on to say that “[b]ehavioral economics and experimental methods have become hot topics for graduate students in some of the nation’s top economics departments Universities in the United States, Europe, Israel and Japan have opened centers dedicated to behavioral and experimental economics in the last few years.” *Id.* at C6. Shleifer includes articles by both Kahneman and Smith in his bibliography. See SHLEIFER, *supra* note 133, at 204, 208.

¹⁵⁰ Eugene F. Fama & Kenneth R. French, *The Cross-Section of Expected Stock Returns*, 47 J. FIN. 427 (1992).

¹⁵¹ *Id.* at 442 tbl.4. The only exception was that, when the decile portfolio with the highest book-to-market ratio was split in two, the vingtile portfolio with the higher book-to-market ratios produced a slightly

While one possible analysis was that the stocks yielding the highest returns were simply riskier—so that their returns were not greater when risk adjusted—it was unclear that this was the case. For example, Fama and French found that the betas for the different portfolios—one possible measure of risk—were essentially flat.¹⁵² Although Fama and French developed a theory that book value-to-market ratios themselves measure risk, with high book-to-market ratios evidencing firm “distress,”¹⁵³ the efficient market debunkers respond that this new risk adjustment is a self-fulfilling explanation.¹⁵⁴

lower return than the vingtile portfolio with the lower ratios. But the returns for both of those vingtile portfolios exceeded the return for the decile portfolio with the next lowest book-to-market ratios. *Id.*

¹⁵² *Id.* While the size of a company influenced return, size did not fully explain the difference in returns between low book-to-market companies and high book-to-market companies. *Id.* at 445–46. The study found that even “controlling for size, book-to-market equity captures strong variation in average returns” and also found that “controlling for book-to-market equity leaves a size effect in average returns.” *Id.* at 446.

¹⁵³ See Eugene F. Fama & Kenneth R. French, *Value Versus Growth: The International Evidence*, 53 J. FIN. 1975 (1998). The authors examined data from the United States and twelve other countries from 1974 to 1995 and found that stocks with high book-to-market value, high earnings-to-price, high cash-flow-to-price, and high dividend-to-price ratios displayed a “pervasive” return premium. *Id.* at 1980–81. They concluded that the capital asset pricing model did not explain the returns but argued that an intertemporal capital asset pricing model explained the difference in returns by difference in risk. *Id.* at 1975, 1982–85. Fama and French used a book-to-market variable as a “distress” factor in this study. *Id.* at 1984. For a further exposition of their view that book-to-market is itself a risk factor, see Eugene F. Fama & Kenneth R. French, *Common Risk Factors in the Returns on Stocks and Bonds*, 33 J. FIN. ECON. 3 (1993) (asserting that size and book-to-market are risk factors and that these, plus an overall market risk factor equal to the value weighted one-month return on stocks minus the one-month Treasury bill rate, are powerful explanatory variables for average returns on cross-sections of stocks); Eugene F. Fama & Kenneth R. French, *Multifactor Explanations of Asset Pricing Anomalies*, 51 J. FIN. 55–56 (1996) (concluding that the expected return on a portfolio in excess of the risk-free return is explained by (1) “the excess return on a broad market portfolio,” (2) “the difference between the return on a portfolio of small stocks and the return on a portfolio of large stocks,” and (3) “the difference between the return on a portfolio of high-book-to-market stocks and the return on a portfolio of low book-to-market stocks.” They again label book-to-market equity as a proxy for distress.); Eugene F. Fama & Kenneth R. French, *Size and Book-to-Market Factors in Earnings and Returns*, 50 J. FIN. 131, 154 (1995) (documenting, among other things, that companies with high book-to-market ratios have low earnings-to-book equity ratios and tend “to be persistently distressed”); see also Lu Zhang, *The Value Premium*, 60 J. FIN. 67, 95 (2005) (arguing that “costly reversibility and the countercyclical price of risk deprive value firms of flexibility in cutting capital, causing them to be riskier than growth firms, especially in bad times when the price of risk is high”). And some efficient market defenders observe that the value premium may be time dependent. Burton G. Malkiel, *The Efficient Market Hypothesis and Its Critics*, 17 J. ECON. PERSP., Winter 2003, at 59, 70.

¹⁵⁴ HAUGEN, *supra* note 143, at 65–66; see also SHLEIFER, *supra* note 133, who comments that French and Fama

ingeniously interpret both a company’s market capitalization and its market to book ratio as measures of fundamental riskiness of a stock in a so-called three-factor model

It is not entirely obvious from the Fama and French analysis how either size or market to book ratio, whose economic interpretations are rather dubious in the first place, have emerged as heretofore unnoticed but critical indicators of fundamental risk, more important than the market risk itself. Fama and French speculate that perhaps the low size and market to book ratio proxy

If indeed high book-to-market stocks do yield predictably higher returns that cannot be explained by greater risk, this circumstance challenges the efficient market hypothesis even in its weakest form, suggesting the possibility of predicting future returns based on stale information, and the debate over whether high book-to-market stocks consistently yield higher returns unexplained by risk demonstrates that the efficient market hypothesis is no longer unchallenged. No matter how this debate is resolved—and this Article will not resolve it—the very existence of the dispute forces lawyers and courts to consider the possibility that the efficient market hypothesis may not hold. Scholarly opinion is no longer unanimous in its favor.¹⁵⁵

for different aspects of the “distress risk,” but up to now there has been no direct evidence in support of this interpretation

Id. at 19–20.

This Article does not offer any comprehensive review of the extensive finance literature that attempts to explain the “value premium.” It is enough for present purposes to note that the debate flourishes between the finance academicians who conclude that the premium can be explained in ways consistent with the efficient market theory and those who conclude that it cannot. Fama and French summarized this debate last year, concluding that the dispute was by then “at a timeworn impasse.” Eugene F. Fama & Kenneth R. French, *The Capital Asset Pricing Model: Theory and Evidence*, 18 J. ECON. PERSP., Summer 2004, at 40; *see also id.* at 25, 37–41 (reviewing the controversy); *id.* at 42–43 (showing that returns on portfolios of U.S. stocks for July 1963 to December 2003 (sorted into deciles by book-to-market ratios and reset annually) increased with book-to-market ratios; the differences in returns between the low book-to-market and high book-to-market portfolios were not explained by the proposition that beta should continuously increase with return).

¹⁵⁵ The challenge to the efficient market hypothesis rests on other data as well. First, some events that do not affect the fundamental value of a company affect its stock price. When the S&P 500 Index adds a company, the company’s stock rises—by one study 3.5% on average during 1976–96. America Online’s price jumped 18% when the S&P 500 Index added that company’s stock in December 1998. SHLEIFER, *supra* note 133, at 21–22; *see also* Honghui Chen et al., *The Price Response to S&P 500 Additions and Deletions: Evidence of Asymmetry and a New Explanation*, 59 J. FIN. 1901 (2004) (studying additions to and deletions from the index from July 1962 to December 2000). Chen and his coresearchers found that:

[d]uring the period from 1962 to 1976, the excess return [on the first trading day after the announcement that a stock was added to the S&P 500] [was] not significantly different from zero. For the 1976 to 1989 period however the average announcement day abnormal return [was] a significantly positive 3.2%, with 93% of added firms experiencing positive returns. The mean announcement day abnormal return increase[d] to over 5% for the 1989 to 2000 period, with 94% of sample firms experiencing positive returns.

Id. at 1907.

Second, very large market movements occur without significant news to explain them. Thus, it is hard to find new information entering the market that could have caused the 22.6% drop in the Dow Jones Industrial Average on October 19, 1987. SHLEIFER, *supra* note 133, at 20. More broadly, Shleifer cites a 1991 study of the fifty largest stock price movements in the United States since World War II, which found that many of those movements came on days with no major announcements. *Id.*

Third, closed-end mutual funds, in which the investor must sell to another investor in order to liquidate instead of redeeming shares with the fund for the net asset value per share, present a further apparent market anomaly. Although the funds simply hold other assets, “fund shares typically sell at prices not equal to the per

Now, assuming that the empirical evidence can be legitimately interpreted to suggest that stock prices move in a way that prior company history predicts and, therefore, in contravention of the weak form efficient market theory, how could that happen? Behavioral economists find the answer in investors' underreaction to company news in the short run and overreaction to company news in the longer run. This, of course, is a challenge to the efficient market theory in its semi-strong form, which assumes that markets react to new information fully, fast, and in an unbiased way.

Central to the behavioral explanation of why markets do not react fully, fast, and without bias is the circumstance that companies seldom experience sustained runs of outstanding performance—in terms for example of earnings growth—or, unless they go out of business or suffer some structural crisis in their industry, sustained runs of poor performance.¹⁵⁶ Instead, both the

share market value of assets the fund holds. Although funds sometimes sell at premia to their net asset values, in recent years discounts of 10 to 20 percent have been the norm." *Id.* at 53. Traditional explanations—agency costs, illiquidity of assets and capital gains tax liabilities—do not explain this phenomenon, in part because these explanatory factors do not account for the discounts and premia changing over time. *Id.* at 56–59.

Fourth, the apparently irrational pricing of joint business ventures that trade under two different names challenges market efficiency. Although now combining, Royal Dutch Petroleum and Shell Transport and Trading have in the past been separate companies that shared sixty-four in the same joint business. Both were publicly held but separately listed. If market values were equal to discounted future cash flows, the market value of Royal Dutch stock should have been 1.5 times the market value of Shell Transport. Yet, between September 1980 and September 1995, the stocks displayed large deviations from this ratio, with Royal Dutch sometimes underpriced (by as much as 35%) and sometimes overpriced (by as much as 10%). *Id.* at 30 (relying on a study by K.A. Froot and E. Dabora). Lawrence Cunningham gives Unilever N.V./Unilever PLC and SmithKline Beckman/Beecham Group as additional examples. CUNNINGHAM, *supra* note 143, at 52–54.

¹⁵⁶ Haugen goes into the studies in considerable detail. An older study by a British academic ranked American firms on the basis of the growth in their earnings per share. R.A. BREALEY, AN INTRODUCTION TO RISK AND RETURN FROM COMMON STOCKS (2nd ed. 1983), summarized in HAUGEN, *supra* note 143, at 47–49. Brealey then followed the firms, year by year, to record whether they were in the top half of growth rates or the bottom half. He categorized the runs (e.g., two years, three years, or four years of consecutive years in the top half of EPS growth rates), summed the total occurrences in each category, and compared the results to what would be expected if the odds of being in the top half or bottom half in any given year were fifty-fifty. Graphs of the actual numbers of each run versus the chance numbers are very close. *Id.* at 48; see also BREALEY, *supra*, at 87 (presenting results in tabular rather than graphic form). Similarly, Shiller referred to what was at the time an unpublished study, which he characterized as finding that "companies rarely show strings of consecutive above-average growth in sales and profits that extend for very many years." SHILLER, *supra* note 132, at 253. That study, which has also been described by Haugen in *New Finance*, was later published. See Louis K.C. Chan et al., *The Level and Persistence of Growth Rates*, 58 J. FIN. 643 (2003). Chan and his coresearchers ranked firms by growth rates at the end of each year from 1951 to 1998 and concluded that:

there is some persistence in sales revenue growth. The persistence in sales does not translate into persistence of earnings, however. Even though we measure consistency against a hurdle that is not particularly challenging (the median growth rate), there are few traces of persistence in

outstanding near-term performers and the poor near-term performers tend to revert to average performance in the longer term.¹⁵⁷ But because investors do not see this coming (for psychological reasons, this Article examines below), the stocks that have recently yielded poor returns to their investors tend to yield superior returns over the next three to five years, and the stocks that have recently yielded outstanding returns tend to provide poor returns over that same period.¹⁵⁸

The behavioral economists attempt to explain all this by psychological tendencies. In particular, behavioralists argue that psychological factors can explain why companies that have had a run of poor performance are undervalued and companies that have had a run of good performance are overvalued.

growth of operating income before depreciation, or in income before extraordinary items. For example, on average three percent of firms manage to have streaks in growth above the median for five years in a row. This matches what is expected by chance.

Id. at 682. The researchers found this to be true even in the "hot" pharmaceutical and technology sectors: "While there is persistence in sales growth, when it comes to growth in bottom-line income, over long horizons, the likelihood of achieving streaks is not much different from sheer luck." *Id.*

¹⁵⁷ A particularly eye-catching example focused on companies featured in the book T.J. PETERS & R.H. WATERMAN, *IN SEARCH OF EXCELLENCE: LESSONS FROM AMERICA'S BEST-RUN COMPANIES* (1982). That book selected the "excellent" companies it featured in part by those companies' performance from 1961 through 1980 on six variables: (1) compound asset growth; (2) compound equity growth; (3) average ratio of market value to book value; (4) average return on total capital (net income divided by total invested capital, including long-term debt, nonredeemable preferred stock, common equity, and minority interests); (5) average return on equity; and (6) average return on sales. *Id.* at 22–23; see also HAUGEN, *supra* note 143, at 55. About five years after *In Search of Excellence* appeared, a money manager published an article examining—for the period 1981 to 1985—the statistics for twenty-nine of the original "excellent" companies (with the twenty-nine being companies (1) that were publicly traded when determined to be excellent, (2) that were still in existence as separate publicly traded entities as of December 31, 1985, and (3) for which adequate accounting information, stock prices, and returns were available). See Michelle Clayman, *In Search of Excellence: The Investor's Viewpoint*, 43 FIN. ANALYSTS J., May–June 1987, at 54, summarized in HAUGEN, *supra* note 143, at 55–57. Interestingly, Clayman found that the rates of growth and rates of return for the excellent companies generally declined in the 1981 to 1985 period, compared with the 1976 to 1980 period. Clayman, *supra*, at 57–58.

¹⁵⁸ Shleifer reports:

In an early paper . . . De Bondt and Thaler (1985) discover from looking at U.S. data dating back to 1933 that portfolios of stocks with extremely poor returns over the previous three years dramatically outperform portfolios of stocks with extremely high returns, even after making the standard risk adjustments. De Bondt and Thaler's findings are corroborated by later work.

SHLEIFER, *supra* note 133, at 121 (citing Navin Chopra et al., *Measuring Abnormal Performance: Do Stocks Overreact?*, 31 J. FIN. ECON. 235 (1992) (using five-year periods); Werner F.M. De Bondt & Richard Thaler, *Does the Stock Market Overreact?*, 40 J. FIN. 793 (1985) (using three-year periods)).

When investors see a series of good or bad quarters (in terms, say, of earnings growth), they deduce a trend, even though the run may simply be a probabilistic artifact. Investors' inclination to see a trend where no trend exists is what psychologists call "representativeness, or the tendency of experimental subjects to view events as typical or representative . . . and to ignore the laws of probability in the process."¹⁵⁹ Once the good (or bad) times are rolling, investors project the good (or bad) times forward, without good reason, and overvalue (or undervalue) the stock. They overreact to what they perceive as a long-term trend.

When investors, on the other hand, see a change—a bad quarter (for example, of earnings growth) from a company with a series of good quarters or a good quarter from a company with a series of bad ones—they alter their expectations for the future of the company, but not very much. Investors thereby exhibit what the psychologists call "conservatism," a phenomenon by which individuals use a new piece of information "to update their [predictions] in the right direction, but by too little in magnitude"¹⁶⁰ They underreact to the short-term development.¹⁶¹

¹⁵⁹ SHLEIFER, *supra* note 133, at 113 (referencing Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124 (1974)). Shleifer ties the psychology and the economics together so:

An important manifestation of the representativeness heuristic, discussed in detail by Tversky and Kahneman, is that people think they see patterns in truly random sequences. This . . . is suggestive of the overreaction evidence When a company has a consistent history of earnings growth over several years, accompanied as it may be by salient and enthusiastic descriptions of its products and management, investors might conclude that the past history is representative of an underlying earnings growth potential. While a consistent history of high growth may be nothing more than a random draw for a few lucky firms, investors see "order in chaos" and infer from the in-sample growth path that the firm belongs to a small and distinct population of firms whose earnings just keep growing. As a consequence, investors . . . might disregard the reality that a history of high earnings growth is unlikely to repeat itself, overvalue the company, and become disappointed in the future when the forecasted earnings growth fails to materialize. This, of course, is what overreaction is all about.

SHLEIFER, *supra* note 133, at 128–29.

¹⁶⁰ *Id.* at 127–28 (emphasis omitted) (referencing Ward Edwards, *Conservatism in Human Information Processing*, in *FORMAL REPRESENTATION OF HUMAN JUDGMENT* 17–52 (Benjamin Kleinmuntz ed., 1968)). Shleifer integrates the psychology and the finance with this passage:

Conservatism is extremely suggestive of the underreaction evidence described above. Individuals subject to conservatism might disregard the full information content of an earnings (or some other public) announcement, perhaps because they believe that this number contains a large temporary component and still cling at least partially to their prior estimates of earnings. As a consequence, they might adjust their valuation of shares only partially in response to the announcement. Edwards would describe such behavior in Bayesian terms as a failure to properly

It is undervaluation resulting from representativeness that creates the “value” stocks, whose prices have been irrationally driven down relative to book value because they have had a series of bad quarters. These are stocks that will perform well in the future as their issuers revert towards their performance means. Representativeness also creates the “glamour” stocks, whose prices have been irrationally raised relative to book value because they have had a series of good quarters. These are stocks that will perform more modestly in the future as they, too, revert towards their performance means.¹⁶²

aggregate the information in the new earnings number with investors' own prior information to form a new posterior earnings estimate. In particular, individuals tend to underweight useful statistical evidence relative to the less useful evidence used to form their priors.

SHLEIFER, *supra* note 133, at 128.

¹⁶¹ Shleifer formalizes his description of this underreaction/overreaction behavior:

The investor in our model does not realize that earnings follow a random walk. He thinks that the world moves between two “states” or “regimes” and that there is a different model governing earnings in each regime. When the world is in regime 1, Model 1 determines earnings; in regime 2, Model 2 determines them. Neither of the two models is a random walk. Rather, under Model 1, earnings are mean-reverting; in Model 2, they trend Under Model 1, earnings shocks are likely to be reversed in the following period, so that a positive shock to earnings is more likely to be followed in the next period by a negative shock than by another positive shock. Under Model 2, shocks are more likely to be followed by another shock of the same sign.

. . . .
[The investor's] only task is to figure out which of the two regimes of his model is currently generating earnings. This is the only sense in which he is learning from the data.

A model of such an investor facing a random walk process for earnings can generate the empirical phenomena discussed earlier, including both underreaction to earnings announcements and long-run overreaction.

Id. at 131–33 (footnote omitted); see also *id.* at 134–43 (providing mathematical modeling).

¹⁶² HAUGEN, *supra* note 143, at 1. Shleifer reads the research this way:

In the case of earnings, Zarowin (1989) finds that firms that have had a sequence of bad earnings realizations subsequently outperform firms with a sequence of good earnings. This evidence suggests that stocks with a consistent record of good news, and hence extremely high past returns, are overvalued, and that an investor can therefore earn abnormal returns by betting against this overreaction to consistent patterns of news. Similarly, stocks with a consistent record of bad news become undervalued and subsequently earn superior returns.

SHLEIFER, *supra* note 133, at 121. But note that Zarowin also interpreted his data as showing that the “overreaction” disappeared when he controlled for firm size. Paul Zarowin, *Does the Stock Market Overreact to Corporate Earnings Information?*, 44 J. FIN. 1385 (1989). Zarowin studied firms during the period 1971 to 1981, grouping the firms into quintile portfolios based on change in earnings before extraordinary items and before discontinued operations, divided by the standard deviation of earnings changes over the just past five years. He found that the portfolio of poorest earners outperformed the portfolio of best earners over the next thirty-six months by a statistically significant cumulative excess return of 16.6%. *Id.* at 1391. He then sorted the companies by size and found no differential performance between size-matched portfolios of poorest

The “value” stocks remain value stocks for some time, and the “glamour” stocks remain glamour stocks for some time, because of conservatism—investor reluctance to see that good quarters for value stocks (or bad quarters for glamour stocks) signal a mean reversion.

All of this is interesting background on behavioral economics, because it provides an explanation for what appears to be a challenge to market efficiency—the arguable ability to predict future performance from past facts and the arguable failure of the market to react fast, fully, and without bias to new information. The empirical studies and psychological theories summarized in this Part V.A.1 are important because they alert us to the fact that academic debate over market efficiency now flourishes.

But none of this directly addresses The Bubble. And so, this Article next examines the behavioralists’ Bubble explanation.

2. *A Behavioral Explanation of The Bubble*

Behavioral theories for The Bubble divide into two parts: (1) psychological theories to explain why many market participants ran wild during The Bubble, and (2) practical constraints to explain why the market professionals did not rein in the stampede.

a. *A Behavioral Explanation for Why the Market Went Nuts*

At perhaps the highest level of generality, the behavioralists describe investor action in a bubble as a series of “feedback loops”:

In feedback loop theory, initial price increases . . . lead to more price increases as the effects of the initial price increases feed back into yet higher prices through increased investor demand. This second round of price increases feeds back again into a third round, and then into a fourth, and so on.¹⁶³

This says nothing much more than that once the market is booming, a lot of money will jump in and that money will keep the boom going, bringing in

earners and best earners. *Id.* at 1398. This Zarowin study is part of a body of work suggesting that long-term overreaction may be explained by risk, size, and the so-called “January effect.” See Ferrillo et al., *supra* note 58, at 109 & nn.127–29 (citing to several Zarowin articles and one article by K.C. Chan).

¹⁶³ SHILLER, *supra* note 132, at 60; see also SHLEIFER, *supra* note 133, at 154–55 (“A better description of noise trader behavior in such bubbles is positive feedback trading. Positive feedback investors buy securities after prices rise and sell after prices fall.”).

more money that will send prices to higher levels, attracting still more money that will push prices upward even farther. But behavioral economists say more, for they try to describe just what motivates individual investors during a bubble in ways that cause the feedback loops to recur:

In the most popular version of the feedback theory, one that relies on *adaptive expectations*, feedback takes place because past price increases generate expectations of further price increases. In another version of the feedback theory, feedback takes place because of increased *investor confidence* in response to past price increases. Usually, such feedback is thought to occur in response not so much to a sudden price increase as to a pattern of consistency in price increases.¹⁶⁴

The first notion—adaptive expectations—is a variation of a concept that this Article discussed in Part V.A.1: the tendency of investors to see a trend of significant length where none exists and to irrationally believe that the perceived trend will continue. Put simply, as investors saw stock prices (particularly Internet and telecom stock prices) continue to rise during The Bubble, they became more convinced that the increase would continue.

The second notion—investor confidence—includes both the idea that investors are more willing to put money into the market when they see it rising¹⁶⁵ and the idea that stock buyers attribute their investment success to their own abilities.¹⁶⁶ Investors decided to put more money into stocks (particularly Internet and telecom stocks) as the market (particularly in those two sectors) went up, because investors became increasingly confident that the market (and those sectors) would continue upward and that they could therefore make money through additional investments. Moreover, as investors saw the prices of stocks that *they* bought increase, investors attributed that

¹⁶⁴ SHILLER, *supra* note 132, at 60 (emphasis in original) (footnote omitted).

¹⁶⁵ *Id.* at 59 (citing an unpublished study by Meir Statman and Steven Thorley providing statistical evidence that high returns in the stock market are followed by high volume).

¹⁶⁶ Shiller argues that “[e]ven though a rising market ‘lifts all boats,’ there is still a tendency for investors to interpret their investing success as confirmation of their own abilities, and this reinforces their interest in trading stocks.” *Id.* Shiller cites a study by Brad Barber and Terrance Odean, which showed that investors who shifted from phone-based trading to online trading had on average outperformed the market before the switch but traded more frequently and underperformed the market after the change. See *infra* notes 215, 219. At least one interpretation is that the traders took their pre-switch success as evidence of their own investing prowess and that this belief caused them, after the switch, to increase trading and suffer as a result. See *infra* note 219; see also CUNNINGHAM, *supra* note 143, at 39 (“For investors, overconfidence bias is seen in the habit of construing investing success as confirmation of their abilities, even where the results are not due to any particular research, insight, or skill.”).

circumstance to their own acumen rather than to chance or other irrational investor action, and investors' conclusion that the stocks they bought had risen because they were astute stock pickers increased their confidence that they would profit from buying more stocks that *they* selected.¹⁶⁷

Aggravating these tendencies was the attention that the media lavished on Bubble stocks.¹⁶⁸ And even casual conversation often turned to stocks,¹⁶⁹ as

¹⁶⁷ In a look-back article on behavioral finance, Shiller points out that the notion of feedback trading is not new, having been offered as an explanation many years ago for tulipmania in Holland in the 1630s. Robert J. Shiller, *From Efficient Markets Theory to Behavioral Finance*, 17 J. ECON. PERSP., Winter 2003, at 83, 91–92 (citing an 1841 book and an anonymous observer publishing in 1637). Shiller's article also summarizes studies that he says support feedback theory:

Psychologists Andreassen and Kraus (1988) found that when people are shown real historical stock prices in sequence (and which they [know are] real stock prices) and invited to trade in a simulated market that displays these prices, they tend[] to behave as if they extrapolate past price changes when the prices appear to exhibit a trend relative to period-to-period variability. Smith, Suchanek and Williams (1988) were able to create experimental markets that generated bubbles that are consistent with feedback trading. Marimon, Spear and Sunder (1993) showed experiments in which repeating bubbles were generated if subjects were preconditioned by past experience to form expectations of bubbles.

Id. at 93 (citing Ramon Marimon et al., *Expectationally Driven Market Volatility: An Experimental Study*, 61 J. ECON. THEORY 74 (1993); Vernon L. Smith et al., *Bubbles, Crashes, and Endogenous Expectations in Experimental Spot Asset Markets*, 56 ECONOMETRICA 1119 (1988); unpublished paper, later appearing as P.B. Andreassen & S.J. Kraus, *Judgmental Extrapolation and the Salience of Change*, 9 J. FORECASTING 347, 357–67, 368 n.8 (1990) (reporting stock price experiments and discussing implications for explaining bubbles)). Shiller also refers to “biased self-attribution”—people's tendency to attribute success to their own abilities and their failure to bad luck or sabotage—which may contribute to feedback. Shiller, *supra*, at 94 (citing Kent Daniel et al., *Investor Psychology and Market Under- and Overreactions*, 53 J. FIN. 1839 (1998)).

¹⁶⁸ Shiller references a study by Richard Parker, documenting that newspapers, over two decades, converted dry business sections into, at least in part, sources of personal investing advice, with reports regularly including analyst opinions and implications of financial news for investors. SHILLER, *supra* note 132, at 29. That long perspective, however, does not do justice to the explosion of speculative media during The Bubble. In 1998, *The Industry Standard* and *Business 2.0* began publication. CASSIDAY, *supra* note 134, at 175–76. The former included an IPO tracker, which one professor later described as “the most widely followed index in Silicon Valley.” MALKIEL, *supra* note 143, at 96. The latter boasted that it was the “oracle of the New Economy.” CASSIDY, *supra* note 134, at 176. These and other magazines provided the coverage of Internet companies that readers wanted to have. *Id.* at 174–77.

Television did not lag behind:

Television supplied continuous air for floating the Internet bubble. Cable networks such as CNBC, CNNfn, and Bloomberg became cultural phenomena. They filled each day with programming about the stock market and amplified the boom. Across the world, health clubs, airports, bars, and restaurants were permanently tuned in to CNBC. The stock market was treated like a sports event with a pre-game show (what to expect before the market opened), a play-by-play during trading hours, and a post-game show to review the day's action and to prepare investors for the next Most guests interviewed during the day were bullish. CNBC's commentators like Maria (the money honey) Bartiromo particularly favored scheduling interviews with analysts who could say with confidence that some \$50 dot.com stock would soon

did other personal communications, including email and online chat rooms.¹⁷⁰ All of this may have been particularly important, as research shows that individual investors tend to buy stocks that come to their attention because of abnormally high trading volume or rapid price increase, or because they are otherwise in the news,¹⁷¹ and there is some thought that personal communications about stocks are important to bubble psychology.¹⁷²

Moreover, to some extent, people bought Internet and telecom stocks during The Bubble because others were doing so with considerable success. The behavioralists ascribe such buying to information cascades,¹⁷³ social

go to \$500.

MALKIEL, *supra* note 143, at 97–98; *see also* CASSIDY, *supra* note 134, at 169.

¹⁶⁹ Shiller, writing in 2000, described the atmosphere then:

Bringing up the stock market is seen as an accepted, even mildly exciting, conversational gambit Twenty years ago, bringing up the stock market . . . would have seemed like an intrusion The difference between now and then is subtle, but nevertheless revelatory of the fundamental change in investor enthusiasm for the market.

SHILLER, *supra* note 132, at 59–60.

¹⁷⁰ Shiller brings the end of the last century back again:

Today we are witnessing another explosion of technological innovations that facilitate interpersonal communication, consisting of e-mail, chat rooms and interactive Web sites. These new and effective media for interactive (if not face-to-face) communication may have the effect of expanding yet again the interpersonal contagion of ideas. They may have allowed enthusiasm for the market to spread much more widely in the 1990s than it would otherwise have.

Id. at 156–57.

¹⁷¹ A study by Barber and Odean reviewed trading records from more than 66,000 households with accounts at a large discount brokerage (time period January 1991 through December 1996), more than 14,000 accounts at a smaller discount brokerage (January 1996 through June 15, 1999), and nondiscretionary accounts of more than 665,000 investors at a large retail brokerage (January 1997 through June 1999). Brad M. Barber & Terrance Odean, *All that Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors* 8–9, 35 (Jan. 2005) (unpublished manuscript on file with author). Barber and Odean conclude that “individual investors display[ed] attention-based buying behavior.” *Id.* at 24. They were “net buyers” of (1) stocks experiencing abnormally high volume on the day the individuals traded, (2) stocks that experienced extremely positive or extremely negative returns the previous day, and (3) stocks in the news on the day the individuals traded. *Id.* at 24, 33–38.

¹⁷² Shiller suggests that personal contact about stocks is especially important in creating a bubble. SHILLER, *supra* note 132, at 162.

¹⁷³ The idea behind an information cascade is that one person may decide to take advantage of the information that another individual has acquired—without independently confirming that information. As more and more do so—for example, by purchasing speculative stocks without independently considering whether it is a good idea—it becomes more and more likely that others will follow.

According to such a theory, the popular notion that the level of market prices is the outcome of a sort of vote by all investors about the true value of the market is just plain wrong. Hardly anyone is really voting. Instead people are rationally choosing not to, as they see it, waste their time and effort exercising their judgment about the market, and thus choosing not to exert any independent

proof,¹⁷⁴ or social pressure.¹⁷⁵ Finally, to a certain degree, people simply took their opinions from “experts”¹⁷⁶ who, in the midst of The Bubble, abandoned traditional valuation methods for those that would justify the inflated prices dominating the market.¹⁷⁷

impact on the market. Ultimately, all such information cascade theories are theories of the *failure of information about true fundamental value to be disseminated and evaluated.*

Id. at 152 (emphasis in original); *id.* at 151–52 (citing articles in the *Journal of Political Economy*, *Quarterly Journal of Economics*, *American Economic Review*, and *The Review of Economic Studies*).

¹⁷⁴ CUNNINGHAM, *supra* note 143, at 40.

¹⁷⁵ Shiller refers to an experiment by psychologist Solomon Asch in which he placed each subject in a group of seven to nine others, all of whom, unbeknownst to the subject, were working with Asch. Each member of the group then had to answer twelve questions about the lengths of line segments on cards. The answers were obvious. All of Asch’s ringers deliberately provided wrong answers to seven of the questions. One-third of the time, the nonringer subjects gave in and provided the obviously wrong answer, too. Asch concluded that social pressure caused the errors. SHILLER, *supra* note 132, at 149. Two other psychologists repeated Asch’s experiment but told the subjects that they were being placed anonymously into a “group” of others whom they could not see and would never see and whose responses the subjects could only observe by an electronic signal. The subjects in this later study gave nearly as many wrong answers as those in Asch’s experiment, and the two psychologists conducting this later study concluded that the subjects were reacting to the fact that a group of others had reached a different judgment from theirs, rather than the social pressure against disagreeing with others face to face. *Id.* at 149–50.

¹⁷⁶ Shiller describes experiments by Stanley Milgram. Subjects were told that they were administering electric shocks to individuals who were working with Milgram and who were not in fact being shocked, but who feigned pain and asked that the experiment stop. When the experimenter told the subjects to continue to administer the electric shocks and that the shocks would not cause permanent damage, many of the subjects continued. *Id.* at 150. Shiller argues that such studies show that “people have learned that when experts tell them something is all right, it probably is, even if it does not seem so” and that “it is not at all surprising that many people are accepting of the perceived authority of others on such matters as stock market valuation.” *Id.* at 150–51.

¹⁷⁷ Burton Malkiel makes this point about Internet stocks:

In order to justify ever higher prices for Internet-related companies, security analysts began to use a variety of “new metrics” And so valuation criteria such as price to earnings, price to book value, or even price to sales were abandoned [A]nalytsts looked instead at “eyeballs”—the number of people viewing a Web page or “visiting” a Web site [M]easurements were made of “page views per user per month.” Particularly important were numbers of “engaged shoppers”—those who spent at least three minutes on a Web site. Mary Meeker [the Morgan Stanley analyst sometimes called “queen of the ‘net’”] gushed enthusiastically about Drugstore.com because 48 percent of the eyeballs viewing the site were “engaged shoppers.” No one seemed to care whether the engaged shopper forked over greenbacks and bought anything from the company.

MALKIEL, *supra* note 143, at 94.

Malkiel writes that a different, though also nontraditional, “metric”—capacity—dominated valuation of telecommunications companies:

According to one TV commercial for the Janus Fund, its security analysts clambered into tunnels to count the miles of fiber-optic cable in the ground rather than examining the tiny fraction that was actually lit up with voice, picture, or data traffic. Similarly, the “infrastructure build” was taken as a sign of strength, and telecom company overcapacity and brutal pricing pressures were,

At one level, much of this theory seems like pop psychology.¹⁷⁸ But at another level, these explanations capture in an organized way the madness of the time.¹⁷⁹ Remember too that these theories to explain The Bubble are not just barbershop talk, but considered thought by respected academics. These academics' understanding of The Bubble seems considerably closer to the mark than a notion that market professionals carefully considering fundamental values controlled stock price change.

b. A Behavioral Explanation for Why Market Professionals Did Not Stop the Madness

So where were those market pros? Why did they not apply the brakes? The behavioralists answer by pointing to the limits on arbitrage.

for a time, ignored. The philosophy was "If we build it, they will come." . . . [E]nough fiber was laid to circle the earth 1,500 times As the prices of telecom stocks continued to skyrocket well past any normal valuation standards, security analysts did what they often do—they just lowered their standards.

Id. at 95.

¹⁷⁸ These theories also somewhat disappoint by their imprecision in explaining why The Bubble started when it did, and why it popped when it did. But this is no great loss to this Article's subject, which concerns the application of efficient market theory to securities cases in which the fraud allegedly occurred *during* The Bubble.

¹⁷⁹ Introducing a chapter that covers late 1998 to early 1999, a book by a journalist paints this picture:

During the Internet bubble, . . . [m]ost people knew that Internet stocks were overvalued, but they couldn't resist joining the speculative horde, which, in many cases, included their friends, neighbors, and family members. All across the country, Americans who thought of themselves as sensible, upstanding citizens had watched their cousins and co-workers and even, in some cases, mothers-in-law making big profits on stocks like Excite, Yahoo!, and Amazon.com. "There is nothing so disturbing to one's well-being and judgment as to see a friend get rich," Charles Kindleberger, the MIT historian of financial manias, used to tell his pupils. Refusing to buy Internet stocks, which at first had seemed to be a matter of mere common sense, was turning out to be costly and embarrassing. At the local parents association or poker group the most respected voices belonged to people who had bought Internet stocks back in 1995 and 1996: the voices of caution were being laughed at. This social pressure had a big impact.

CASSIDY, *supra* note 134, at 192. Speaking of a short time later, the same journalist writes:

By the summer of 1999, millions of Americans were trapped in an informational cascade. If they had been confined to a quiet room and asked whether they really believed that Yahoo! was worth more than Texaco, or whether America Online was worth more than Time Warner, most of them would have said no. But they were not confined to a quiet room. They were living in an environment where their friends and neighbors were buying stocks; Wall Street analysts and journalists were constantly reminding them that stocks were the best of all possible investments; and respected commentators were arguing that the Dow was heading for 20,000, 30,000, or even 40,000.

Id. at 236.

Arbitrageurs are important to the idea that markets price securities rationally because, at least in theory, arbitrageurs spot mispriced securities and, through their purchases and sales, bring the prices of those securities back to appropriate levels.¹⁸⁰ In the classic fact pattern, the arbitrageur sells short¹⁸¹ a stock that is priced too high and, to reduce his or her risk, the arbitrageur buys an essentially similar stock that is more appropriately priced or priced too low.¹⁸²

Arbitrage may be ineffective in preventing or controlling a bubble for a number of reasons. First, assuming that the arbitrageur believes that the market overall is too high, he or she has no close substitute for the market.¹⁸³

¹⁸⁰ The idea is that, "to the extent that investors are irrational in similar ways, they are met in the market by rational arbitrageurs who eliminate [the irrational investors'] influence on prices." SHLEIFER, *supra* note 133, at 2.

¹⁸¹ A short seller sells a share of stock that he or she does not own. Usually, the short seller's broker borrows a share of the stock, and deposits an amount of money into the account from which the stock was borrowed that is equal to the market value of the share plus some small percentage—such as 2% for domestic stocks. The borrowing broker then delivers the share to the buyer in the short-sale transaction. As the market value of the share then fluctuates, the amount of money in the account from which the share was borrowed must also fluctuate. The short seller "closes" the short position by buying a share of the stock at a later time. That share then moves to the account that loaned a share to the short seller at the outset, and the money on deposit in the lending account is returned. See LOUIS LOSS & JOEL SELIGMAN, *FUNDAMENTALS OF SECURITIES REGULATION* 861–62 (2004) (quoting a 1934 congressional report); Darrell Duffie et al., *Securities Lending, Shorting, and Pricing*, 66 J. FIN. ECON. 307, 310–13 (2002) (containing a more recent description of short selling); Charles M. Jones & Owen A. Lamont, *Short-Sale Constraints and Stock Returns*, 66 J. FIN. ECON. 207, 211–13 (2002) (same).

¹⁸² SHLEIFER, *supra* note 133, at 3–4. To understand the risk reduction accomplished by the simultaneous sale of an overpriced security and the purchase of a more correctly priced substitute, consider this example, which ignores transaction costs in order to simplify. Suppose a trader believes that stock A, selling at \$12 a share, is overpriced by \$2 and that the trader shorts the stock. If the stock falls back to \$10, the trader closes out his or her short position and makes \$2. But if stock A goes up to \$14 (for example, because of a development favorable to A's industry) and the trader closes out at that point, the trader loses \$2.

Now suppose that the same trader shorts stock A at \$12 but at the same time buys a close substitute stock, issued by company B in the same industry and more correctly priced at \$10 a share. If A drops back to \$10 and B stays at \$10, the trader closes out his short position in A and makes \$2 there and sells the B stock for no gain and no loss. The trader is \$2 ahead. Now, if A goes up to \$14 because of some unexpected development that affects A's industry, B may also rise by \$2. In that case, the trader closes out the short position on A and loses \$2 in the process, but sells B for a \$2 gain and comes out even. Similarly, if an unfavorable development for the industry forces the price of both A and B down by \$2, the trader comes out even—by closing out the short position on A and making \$2 and closing out the long position on B and losing \$2. If the prices of A and B converge, with both for example moving to \$11, the trader makes \$2 (\$1 by closing out the short position on A and \$1 by selling B). Of course, if A goes up and B goes down, then the arbitrageur loses. But that might most likely happen because A and B were not the close substitutes that the arbitrageur thought they were.

¹⁸³ *Id.* at 13–14 (citations omitted) ("[A]rbitrage does not help to pin down price levels of, say, stocks and bonds as a whole. These broad classes of securities do not have substitute portfolios, and therefore if for some reason they are mispriced, there is no riskless hedge for the arbitrageur. An arbitrageur who thinks that stocks

The arbitrageur cannot short the stock market as a whole and reduce his or her risk by going long on a different but essentially similar investment. In particular, an arbitrageur who thought that the market as a whole was too high during The Bubble was unable to hedge a short bet against the overall market by buying a more correctly priced equivalent.

Second, many arbitrageurs have limited staying power. They may be hedge fund¹⁸⁴ managers who are making their arbitrage bets with the money of investors in the funds.¹⁸⁵ But a fund may permit its investors to withdraw their money,¹⁸⁶ and the investors may do so unless arbitrage bets pay off in the relatively short term.¹⁸⁷ If irrational behavior drives up prices over a sustained period, short bets may not pay off in time to please investors, and investors may pull their money out. This may happen even if the hedge fund manager is right in thinking that stock prices have gone too high. The knowledge that investors might take their money back, in turn, dampens each investor-financed arbitrageur's enthusiasm to bet against a bubble, where the overpricing may well increase over the period during which investors measure

as a whole are overpriced cannot sell short stocks and buy a substitute portfolio, since such a portfolio does not exist.”).

¹⁸⁴ The SEC published a report on hedge funds in September 2003. See *Implications of the Growth of Hedge Funds*, available at <http://www.sec.gov/news/studies/hedgefunds0903.pdf> (2003) [hereinafter SEC Hedge Fund Report]. The SEC said that:

Although there is no universally accepted definition of the term “hedge fund,” [it] generally is used to refer to an entity that holds a pool of securities and perhaps other assets, whose interests are not sold in a registered public offering and which is not registered as an investment company under the Investment Company Act.

Id. at 3. Some, but not all, hedge funds engage in arbitrage. *Id.* at 3–4.

¹⁸⁵ SHLEIFER, *supra* note 133, at 89 (“More commonly [than the arbitrageur simply risking his or her own wealth], arbitrage is conducted by relatively few professional, highly specialized investors who combine their knowledge with resources of outside investors to take large positions.”).

¹⁸⁶ The SEC provided these facts relevant to hedge fund staying power:

Hedge funds generally do not have limited time horizons, although a number of factors, including an inability to consistently achieve positive returns, often contribute to a relatively shorter life span than that of other investment vehicles. Hedge fund advisers typically receive, as compensation, a management fee based on the amount of hedge fund assets (commonly 1–2 percent), plus a share of the capital gains and capital appreciation (commonly 20 percent) or some other allocation based on the fund's investment performance. Hedge funds typically agree to repurchase their own interests from investors on a limited, periodic basis, such as quarterly, often following an initial “lock-up period” during which time investors are not permitted to liquidate their investments.

SEC Hedge Fund Report, *supra* note 184, at ix.

¹⁸⁷ Shleifer points out that, since investors in arbitrage pools can pull out their funds, they will do so based on poor performance by the arbitrageurs running the pool. SHLEIFER, *supra* note 133, at 89.

the arbitrageur's performance.¹⁸⁸ Indeed, if a hedge fund manager believes that the overpricing will increase in the time period relevant to his or her investors, the manager may well take long positions, adopting an "if you can't beat 'em, join 'em" strategy.¹⁸⁹ Such actions by significant numbers of arbitrageurs will aggravate a bubble rather than control it.

Arbitrageurs may have experienced just this pressure during The Bubble and may have been concerned that, if they bet on a market downturn, their investors would pull out as the market continued up. Arbitrageurs may have figured that they could make money in the short term—with which their investors were most concerned—by betting that the madness would escalate before it abated.¹⁹⁰

¹⁸⁸ *Id.* at 90 ("[W]hen arbitrage requires debt or equity capital, arbitrageurs can become most constrained precisely when they have the best opportunities, i.e., when the mispricing they have bet against widens. The fear of such a scenario would make arbitrageurs more cautious when they put on their initial trades, and hence less aggressive in betting against the mispricing."). Shleifer organizes his thoughts, on the limitations that dependency on outside capital imposes on arbitrage, in mathematical terms. *Id.* at 90–102. He also addresses arbitrage in a time of positive feedback trading—like The Bubble. *Id.* 154–74.

¹⁸⁹ If arbitrageurs believe that investor sentiment has not only driven a price too high but is likely to drive it even higher, they may exaggerate discrepancies by betting that the psychology of the market will increase the mispricing. See CUNNINGHAM, *supra* note 143, at 54. Shleifer says this in a more formal way:

If arbitrageurs can anticipate noise trader demand, the analysis changes drastically. Specifically, in the presence of positive feedback traders, arbitrage can be destabilizing. When arbitrageurs receive good news, they recognize that the initial price increase will stimulate buying by positive feedback traders tomorrow. In anticipation of these purchases, informed arbitrageurs buy more today, and so drive prices up today higher than fundamental news warrants. Tomorrow, positive feedback traders buy in response to today's price increase and so keep prices above fundamentals even as arbitrageurs are selling out and stabilizing prices. Although part of the price rise is rational, part of it results from arbitrageurs' anticipatory trades and from positive feedback traders' reaction to such trades. Trading by arbitrageurs destabilizes prices because it triggers positive feedback trading.

SHLEIFER, *supra* note 133, at 156. Thus, when there is a bubble with "positive feedback trading, rational arbitrage can destabilize security prices. Rather than bucking the trends, smart investors might rationally choose to jump on the bandwagon." *Id.* at 174.

¹⁹⁰ A recent study suggests that just this may have happened during The Bubble and concludes by saying that data from 1998 to 2000 establish "two main facts":

First, hedge funds were riding the technology bubble, not attacking it. On average, hedge fund stock portfolios were heavily tilted toward technology stocks

Second, on a stock-by-stock basis, hedge funds reduced their holdings before prices collapsed This suggests that hedge fund managers understood that prices of these stocks would eventually deflate. Our findings are consistent with the view that the investor sentiment driving the technology bubble was predictable to some extent, and that hedge funds were exploiting this opportunity. Under these conditions, riding a price bubble for a while can be the optimal strategy for rational investors

Third, while a classic strategy for an arbitrageur who finds an overpriced stock is to short that stock, market professionals may have failed to control The Bubble through that technique due to a number of limitations affecting short selling.

- To sell a stock short, the short seller must find shares of that stock that he or she can borrow in order to settle the short sale. Accordingly, one limit on short selling is the availability of shares to borrow.¹⁹¹ There is some evidence that a shortage of shares to borrow constrained short sales during The Bubble.¹⁹²

Markus K. Brunnermeier & Stefan Nagel, *Hedge Funds and the Technology Bubble*, 59 J. FIN. 2013, 2037–38 (2004). But note that this study is hampered by the limited public reporting that hedge funds provided.

¹⁹¹ See Shiller, *supra* note 167, at 97 (citing Edward M. Miller, *Risk, Uncertainty and Divergence of Opinion*, 32 J. FIN. 1151–68 (1977), as having pointed to this problem years ago):

Some stocks could be in a situation where zealots have bought into a stock so much that only zealots own shares, and trade is only among zealots, and so the zealots alone determine the price of the stock. The smart money who know that the stock is priced ridiculously high may well use up all the easily available shortable shares and then will be standing on the sidelines, unable to short more shares and profit from their knowledge.

Even if some shares are available to borrow, the market in the stock needs to be pretty liquid in order for the short seller to be confident of being able to close out his or her position if the party that loaned the short seller the shares needs them back. Here is a brief summary of the problem:

To sell short a security, an arbitrageur must borrow it from a broker or some other intermediary and then sell it on the market . . . [E]ven in the extremely developed markets where a security can be borrowed and sold short, such loans are only good as long as the broker retains a long position in the security in its own or in a customer's account. If the customer chooses to sell the security or withdraws it from the brokerage account, the broker recalls the loan and the arbitrageur must immediately buy back the security he is short in the market "to cover his short." If the market for a security is not perfectly liquid or if there are large holders of this security who try to "squeeze" the short-sellers, the premium that an arbitrageur might have to pay to buy back the security can be very large.

SHLEIFER, *supra* note 133, at 47.

¹⁹² Eli Ofek & Matthew Richardson, *DotCom Mania: The Rise and Fall of Internet Stock Prices*, 58 J. FIN. 1113 (2003). Among other things, the authors compare rebate rates for short sellers of Internet and non-Internet stocks in February 2000, before The Bubble burst. *Id.* at 1118–20. When the short seller deposits money into the account from which he or she borrowed the stock for the short sale, that money earns interest at the rebate rate.

When there is an ample supply of shares to short, the rebate closely reflects the prevailing interest rate. However, when the supply is tight, the rebate rate will be lower. This lower rate reflects compensation to the lender of the stock at the expense of the borrower, and thus can provide a mechanism for evening out demand and supply in the market.

Id. at 1118 n.4. The authors found that:

46 percent of the Internet stocks [in February 2000 lay] in the 10 percent tail of all rebate rates. In fact, the mean rebate rate on Internet stocks would represent the eighth percentile of the non-

- For whatever reason, a large number of institutional investors just do not sell short.¹⁹³ So, short selling was less of a constraint during The Bubble in reality than it was in theory.
- Since the amount of collateral deposited by the short seller when the shorter borrows a stock must increase if the price of the shorted stock rises, an increase in the price of a stock can run the short seller out of

Internet distribution. Thus, the evidence supports the proposition that relatively more Internet stocks had reached a limit in their short positions.

Id. at 1119–20.

Burton Malkiel explains an oft-cited deviation from market rationality by the shortage of stock available to borrow:

My favorite illustration [of mispricing that could be spotted when it occurred rather than only in retrospect] concerns the spinoff of Palm Pilot from its parent 3Com Corporation during the height of the Internet boom in early 2000. Initially, only 5 percent of the Palm Pilot shares were distributed to the public; the other 95 percent remained on 3Com's balance sheet. As Palm Pilot began trading, enthusiasm for the shares was so great that the 95 percent of its shares still owned by 3Com had a market value considerably more than the entire market capitalization of 3Com, implying that all the rest of its business had a negative value.

.....

The apparent arbitrage in the Palm Pilot case (sell Palm Pilot short and buy 3Com) could not be undertaken because not enough Palm stock was outstanding to make borrowing the stock possible to effectuate a short sale. The "anomaly" disappeared once 3Com spun off more of Palm stock.

Malkiel, *supra* note 153, at 76.

¹⁹³ For the six-month period ending April 30, 2003, about 3900 out of 9000 mutual funds disclosed that they were authorized to sell short, but only 236 actually engaged in short selling. SEC Hedge Fund Report, *supra* note 184, at 108 n.344. While these figures are post-Bubble, it is hard to believe that funds reluctant to short in the post-Bubble market would have been eager to do so when stock prices were exploding upward for months on end.

The SEC noted restrictions that short selling imposed on mutual funds but could not figure out whether those restrictions caused the meager use of short selling strategies:

The Investment Company Act does not prohibit a registered investment company from engaging in short selling. Registered investment companies are permitted to short sell provided that they cover any open short positions by setting aside or "segregating" cash or other liquid securities. Assets set aside to cover a short position are generally frozen and unavailable to the fund for any other purpose, including other short selling or leveraged transactions. By taking these assets "out of circulation," the asset set-aside (segregation) requirement serves as a de facto limit on the amount of short selling in which an investment company may engage. Nonetheless, even with these limits, registered investment companies still have the ability to engage in high levels of short selling.

Id. at 108 (emphasis omitted). Perhaps because few institutional investors engage in short selling, very few shares trade short. From 1977 to 2000 year-end, NYSE data show that short interest ranged from 0.14% to 1.91% of all shares. Shiller, *supra* note 167, at 101 (citing a study that found that less than 2% of all stocks had short interest greater than 5% of shares outstanding in the period 1976 to 1993); see Patricia M. Dechow et al., *Short-Sellers, Fundamental Analysis and Stock Returns*, 61 J. FIN. ECON. 77, 84, 87 (2001)).

capital before the shorter wants to close a short position.¹⁹⁴ The amount deposited for borrowed stock during The Bubble could have risen significantly as The Bubble expanded. Traders may have been reluctant to short because of concern about large and unpredictable increases in the collateral they would have to supply for borrowed shares.

- A short seller may be involuntarily forced to close a short position if the lender of the stock demands return of the stock and the shorter is unable to borrow shares from another stock lender.¹⁹⁵ Arbitrageurs may have been concerned that the owners of the scarce stock available for short borrowing during The Bubble might want that stock back so that the owners could sell and take their very substantial profits, leaving the short seller in what is known as a "short squeeze."¹⁹⁶
- There were during The Bubble, and are now, certain legal restrictions on short selling as well.¹⁹⁷

All of these factors may have combined to limit the restraining effect of short sales on stock prices during The Bubble.

¹⁹⁴ Jones & Lamont, *supra* note 181, at 210.

¹⁹⁵ *Id.* at 210–11.

¹⁹⁶ See Dechow et al., *supra* note 193. "A short squeeze occurs when the lender of the borrowed shares wants to sell the stock. If the short-seller is unable to find an alternative lender, the short-seller must repurchase the shares in the open market to repay the loan and close the position." *Id.* at 80. Dechow provides these facts from The Bubble:

An extreme example of a short squeeze is the case of Amazon.com. In June 1998, the number of shorted Amazon shares neared its entire float. The firm then announced a stock split, and the stock price rose significantly, with demand coming from both long investors and short-sellers who were squeezed due to the lack of shares to borrow. Fears of a short squeeze have been cited as an important reason why many short-sellers avoid heavily shorting "overpriced" Internet stock.

Id. at 81 n.2 (citing ST. LOUIS POST-DISPATCH, July 19, 1998, at E3) (emphasis omitted).

¹⁹⁷ Rule 10a-1 limits short sale pricing so that "after sales at 49.85 and 50, an indefinite number of short sales may be effected at 50; but, after sales at 49.85 and 49.80, the minimum price at which a short sale may be effected is 49.85." LOSS & SELIGMAN, *supra* note 181, at 865. SRO rules generally require that, before accomplishing a short sale, the short seller's broker must "locate" stock available for borrowing in order to settle the sale. SEC Hedge Fund Report, *supra* note 184, at 41.

The Commission revised certain short-sale rules in 2004. 69 Fed. Reg. 48,008 (Aug. 6, 2004). The new rules permit the SEC to conduct a pilot program by suspending, for securities and time periods that the Commission selects, the "tick test" restriction in Rule 10a-1 set out above. *Id.* at 48,008–09, 48,012–13; 17 C.F.R. § 242.202T (2004). The new rules also replace SRO "locate" rules with an SEC regulation. 69 Fed. Reg. at 48,008, 48,013–16; 17 C.F.R. § 242.203(b).

B. The Significance of the Behavioralist Explanation of The Bubble to the Use of Efficient Market Analysis in Securities Cases Arising Out of Bubble Facts

What does all this mean for the efficient market theory in securities litigation? It does not necessarily mean that event studies will be unable to identify statistically significant price movements chronologically linked to news. Event studies may still be able to perform that mechanical task, albeit with the caveat that some statistically significant price changes during The Bubble were not associated with company news.¹⁹⁸

The real significance of the behavioral work is its statement, in more formal terms, of an easy, intuitive conclusion. During The Bubble, the market was not controlled by flinty-eyed professionals who kept prices near fundamental values, as measured by something like a reasonably discounted cash return. Instead, irrational and overconfident expectations of ever-rising stock prices swept investors (most of whom did not independently analyze the sense of it all) into feedback loops that juiced the market. And the pros, due to practical limitations when confronted with such herd behavior, not only could not stop the stampede but may have decided—quite rationally—to try to make money off of the insanity and, in so doing, may have contributed to it.

All of this raises the most serious questions concerning the link between the efficient market theory and the normative aspects of the 10b-5 elements that the EMT may address. For example, was it *reasonable* for an investor to rely on market price as an indicator of value during this lunacy?

And sure, a false announcement may have been quickly followed during The Bubble by a price hike from \$X to \$Y per share; later revelation of the truth may have been followed by a price drop from \$A to \$B per share; and event studies may link the price rise to the falsity and the price decline to the revelation. But neither \$X nor \$Y, nor \$A nor \$B, may have been anywhere near rational. As a matter of the policy that is embedded in the notion of loss causation, do we really want to say that it was the false-saying defendant who legally caused loss to the buyer at \$Y?

¹⁹⁸ See Ferrillo et al., *supra* note 58, at 121 (examining movement in the price of Metro Global Media stock during the period September 13, 1996, through September 13, 1999; finding that there were days on which news appeared about the company (other than reports of prior stock price movement) and the stock price moved in a statistically significant way, but that there were also days on which no news about the company appeared and the stock price moved by a statistically significant amount).

In the same vein, when we compensate that buyer by, for example, paying him or her an amount equal to \$A minus \$B (after that drop is adjusted by an event study to eliminate any portion of the decline due to market fluctuation),¹⁹⁹ are we really converting damages into a form of investor insurance—in this case, insurance against the insanity of the time?

When the link between the efficient market and the normative notions in 10b-5 elements depends on rational market professionals controlling stock prices, and that control is displaced by the irrational actions of others whom the professionals cannot and do not counterbalance, it is time to rethink whether efficient market theory is really serving a sound *legal* purpose when we use it in securities litigation.

But before reaching conclusions on that issue, this Article must dig below the overall theories that may explain The Bubble and examine two sets of actors beyond the arbitrageurs: amateur traders and brokerage analysts. The market influence of the first group will help us decide whether courts should apply EMT to Bubble cases. So will the very real possibility that the second group was paying so much attention to how their stock recommendations affected investment banking business that the analysts were not the rational market leaders that courts and regulators previously thought them to be.

VI. AMATEUR TRADING DURING THE BUBBLE AND THE QUESTIONS THAT TRADING RAISES FOR THE USE OF EFFICIENT MARKET THEORY IN SECURITIES LITIGATION

Part II.A showed that one factor the courts employ in deciding whether a stock trades efficiently for purposes of FOTM analysis is the volume of trading in that stock, in comparison to total outstanding shares. Indeed, the percentage of outstanding shares traded per week is the very first factor that the influential *Cammer* decision identifies as important in analyzing market efficiency.²⁰⁰

¹⁹⁹ Remember that this compensation simply takes the market as it was at the time of a price drop and does not attempt to correct for fundamental mispricing. For example, if a price decline from \$85 to \$70 followed a corrective announcement and an event study showed that \$5 of the drop simply reflected an overall decline in comparable stocks at the time the price fell, the starting figure for computing damages would be \$10 per share bought. See *supra* note 97 for how that figure would be worked back in time through a class period. But the \$5 adjustment does not solve the problem that the stock may have been worth, by a reasonable calculation based on financial fundamentals, only \$4 before the announcement and only \$3 afterwards, so that the starting figure for damages should have been but \$1.

²⁰⁰ See *supra* text accompanying notes 43–44.

Trading volume boomed during The Bubble. But who were the traders, and should the price swings that their trading created drive court decisions in Bubble cases?

A. Day Traders and Other Trend Chasers Contributed to Increased Bubble Trading Volume

The Bubble saw the proliferation of "day trading," usefully defined as "placing multiple buy and sell orders for securities and holding positions for a very short period of time, usually minutes or a few hours, but rarely longer than a day."²⁰¹ Day traders often bought and sold to catch short swings in a stock's price, swings driven by market fluctuations unrelated to the business of an issuer. As a Senate report put it:

Day traders do not invest in a particular security based on the fundamental strengths or weaknesses of the company. Indeed, the trading decision may have nothing whatsoever to do with the merits of a particular stock. One trader was quoted as follows: "Wall Street's not about investing anymore, it's about the numbers. Who cares whether [the issuer] is a car company or a chemical company? Who cares what they're going to be doing in 2000?" In essence, each trade is little more than a bet on the short-term price fluctuation
²⁰²

²⁰¹ S. REP. NO. 106-364, at 5 (July 27, 2000) [hereinafter Senate Day Trading Report].

²⁰² *Id.* at 6. The SEC wrote:

In May 1999, Chairman Levitt defined a day trader as "an individual, not registered as a broker-dealer or as a registered representative, who trades stock at a firm that allow[s] the individual 'real time' access to the major stock exchanges and the Nasdaq market." The NASD also recently defined a day trader as "an individual who conducts intra-day trading in a focused and consistent manner, with the primary goal of earning a living through the profits derived from this trading strategy." Day traders generally attempt to derive a profit by executing many intra-day trades to take advantage of small price movements in stocks (e.g., 1/8 or 1/16 of a point per trade).

The principal characteristic that distinguishes day traders from other market participants is their mind-set. Day traders generally acknowledge that they are not investors, due to the short time they hold positions. Many day traders hold stocks for seconds or hours, seldom overnight, closing out positions for small profits.

U.S. Securities and Exchange Commission, *Special Study: Report of Examinations of Day-Trading Broker-Dealers* § III.C (Feb. 25, 2000), available at <http://www.sec.gov/news/studies/daytrading.htm> (footnotes omitted) [hereinafter SEC Day Trading Study].

The SEC also put a warning about day trading on its Web site, which included this description:

Day traders sit in front of computer screens and look for a stock that is either moving up or down in value. They want to ride the momentum of the stock and get out of the stock before it changes

Although professional traders had engaged in day trading for years, the late 1990s spawned a new breed—retail customers who day traded for their own accounts over the Internet.²⁰³ Some left their jobs to trade online.²⁰⁴ The new vocation was open to anyone with capital, and who could buy and sell through Internet brokerage firms that featured the ability to make trades almost instantaneously.²⁰⁵

Millions used the Internet for stock trades.²⁰⁶ And while only a few thousand were truly dedicated day traders,²⁰⁷ estimates during The Bubble

course. They do not know for certain how the stock will move, they are hoping that it will move in one direction, either up or down True day traders do not own any stocks overnight because of the extreme risk that prices will change radically from one day to the next, leading to large losses.

U.S. Securities and Exchange Commission, *Day Trading: Your Dollars at Risk* (Feb. 25, 2000), available at <http://www.sec.gov/investor/pubs/daytips.htm>.

²⁰³ SEC Day Trading Study, *supra* note 202, § III.A.

²⁰⁴ Senate Day Trading Report, *supra* note 201, at 22.

²⁰⁵ An SEC study of online trading briefly summarized the history:

Electronic brokerage actually predates individual investors' access to the Internet. In the mid-1980s, a number of broker-dealers offered customers software and direct dial-up access that permitted them to submit orders via their personal computers. In the early 1990s, several broker-dealers gave customers the ability to enter orders through private computer networks. In 1995, broker-dealers introduced the first systems that allowed customers to submit orders through the Internet. Approximately 160 broker-dealers now [late 1999] offer on-line trading. In less than five years, on-line brokerage has become an important channel for conducting retail brokerage transactions.

U.S. Securities and Exchange Commission, *On-Line Brokerage: Keeping Apace of Cyberspace* 11, available at <http://www.sec.gov/pdf/cybrtmd.pdf> (last visited Apr. 30, 2005) (footnotes omitted) [hereinafter SEC Online Brokerage Study]. Oddly, this study does not provide its date. But a copy of the executive summary found elsewhere on the Commission's Web site includes a "modified" date of November 22, 1999, <http://www.sec.gov/news/studies/cyberspace.htm> (last visited Apr. 20, 2005), and the study includes an Appendix 4 with survey findings as of November 15, 1999. SEC Online Brokerage Study, *supra*, at 113.

To speed order processing, some online firms had, by late 1999, permitted customers to direct orders through a connection to the broker's order routing system, and others offered fast connections through dedicated trading Web sites. *Id.* at 39. Firms catering particularly to day traders "generally provide[d customers] with direct access to market centers using high-speed computer linkages. The high-speed computer connections supplied, among other things, access to Nasdaq Level II and ECNs—services that were generally not available to most on-line customers." SEC Day Trading Study, *supra* note 202, § III.B. See Office of the New York Attorney General, *From Wall Street to Web Street: A Report on the Problems and Promise of the Online Brokerage Industry* 55–60 (Nov. 22, 1999) [hereinafter NYAG, *Online Brokerage Report*], for a more detailed description of how an online order moved from the client's computer to the market.

²⁰⁶ SEC Day Trading Study, *supra* note 202, § III.A ("[A]ccording to some estimates, there are . . . more than 5 million investors using the Internet for brokerage services.") (citing a fall 1999 publication); Brad M. Barber & Terrance Odean, *The Internet and the Investor*, 15 J. ECON. PERSP., Winter 2001, at 41 (stating that "[f]rom 1995 through mid-2000, investors opened 12.5 million on-line brokerage accounts"). The SEC also reported:

attributed up to 15% (or more) of NASDAQ volume to day traders.²⁰⁸ Many of the other retail online investors, while they held the stocks they bought longer than the day traders, also traded over relatively short periods of time.²⁰⁹ Including day traders and the rest of the online investors, and apparently considering not just NASDAQ, onliners accounted for about 16% of *all* equity trades in the first quarter of 1999.²¹⁰

U.S. Bancorp Piper Jaffray . . . estimates that by the end of the second quarter of 1999 there were 9.7 million on-line accounts, up from 3.7 million in 1997 and 7.3 million in 1998. Discounting for multiple accounts, Piper Jaffray estimates that there are now [Nov. 1999] approximately 5.8 million on-line traders.

SEC Online Brokerage Study, *supra* note 205, at 12 (footnote omitted).

²⁰⁷ Senate Day Trading Report, *supra* note 201, at 5–6 (saying that the president of the Electronic Traders Association told the Senate subcommittee preparing the report that about 4000–5000 individuals trade from 100 or more specialized day trading firms; but also saying that fifteen firms catering to day traders told the subcommittee in interrogatory responses that they opened 12,666 new accounts between January 1, 1998, and October 1, 1999); SEC Day Trading Study, *supra* note 202, § III.A (noting an estimate of less than 7000).

²⁰⁸ Senate Day Trading Report, *supra* note 201, at 6 (10%–15% of daily NASDAQ dollar volume, with estimate attributed to Electronic Traders Association via an August 1999 interview); SEC Day Trading Study, *supra* note 202, § III.A (approximately 15% of daily NASDAQ trading volume, with figure taken from *Securities Week*, May 24, 1999); *see also* Barber & Odean, *supra* note 206, at 51 (citing a working paper and stating that “in spring 2000, new orders originating from firms that cater to day traders made up approximately 20 percent of the new orders flowing into Nasdaq stocks”).

²⁰⁹ Senate Day Trading Report, *supra* note 201, at 6:

A close relative to the day trader is the “swing” trader. This type of trading differs from day trading in that swing traders hold positions open for longer intervals of time. Henry Fahman, President of Providential [Securities, Inc., a firm providing services to online traders], described a swing trader as one who finds positions and then holds them for a number of days or sometimes weeks, depending on the projected frequency of price movements.

A well-regarded book by a financial journalist said—in a description apparently of 1999—that a group of investors,

which numbered perhaps 200,000, comprised the most active traders, who bought and sold stocks every day, or almost every day. Many of them had turned investing into a first or second job. Unlike the day traders, they tended to hold on to stocks for days and weeks, sometimes even months.

CASSIDY, *supra* note 134, at 232; *see also* SEC Chairman Arthur Levitt, Plain Talk About On-line Investing, Remarks at the National Press Club 3 (May 4, 1999), available at <http://www.sec.gov/news/speech/speecharchive/1999/spch274.htm> (“Somewhere in the middle of this spectrum—with long-term investors on one side and day traders on the other—[are] an increasing number of Americans who use their on-line accounts both to invest longer term and to trade short term on momentum or small changes in the price of a stock. Call this mixed strategy day trading ‘light.’”).

²¹⁰ SEC Online Brokerage Study, *supra* note 205, at 14 (“CS First Boston reported that in the first quarter of 1999, almost one in six equity trades (15.91 percent) took place on-line.”). The SEC did not qualify this figure by limiting it to NASDAQ.

Day traders, and other online investors who bought and sold stocks over the short term, got their information in all kinds of ways. Their sources included online bulletin boards or electronic chat rooms, where investors sometimes used pseudonyms to hide their true identities. The information from such sources had, at least in some instances, real impact on stock prices.²¹¹ Trades in response to more responsible but still unconventional Internet sources, like The Motley Fool (which encouraged investors to eschew the advice of the Wall Street "wise")²¹² and MSN Central, also affected prices.²¹³

²¹¹ The *Wall Street Journal* recounted one example in 1999:

The blizzard of cyber-messages started early in the morning of Monday, March 1. Most were brief and to the point, like one dispatched at precisely 41 seconds after 10:18 a.m. EST.

"WINNER ALERT: CNET 123."

To cognoscenti of trading-places.net, an Internet chat room for day traders, the message was unmistakable: Keep buying shares in CNET Inc., then trading in the low \$120s and already up more than \$7 a share on the day.

Three minutes later came another message: CNET "IS A MONSTER CALL!!!" Then, six minutes after that, "TRADE ALERT: CNET volume picking up, you chart watchers, when you see the volume go up bigger this thing gonna explode."

Explode it did. For the next hour and a half, more than 200 messages, sometimes several a minute, poured forth extolling CNET, a San Francisco company that operates a computer-information network on the Web. "Its gonna fly soon," said one at 11:01, from "skibum." Minutes later, he added, "sorry about the hype, but when I find easy monstas, i [sic] like us to be in." At 11:38, CNET hit \$139 a share—up more than \$23 for the day . . .

But two minutes later, the day traders riveted to trading-places.net read a very different message: "PULLBACK ALERT: CNET I WOULD TAKE PROFITS HERE," wrote "Merlin"—not once but five times in seven seconds. In short order, trading volume in CNET on the Nasdaq Stock Market jumped, and the price fell. By day's end, the stock had racked up tremendous volume equal to more than twice the number of freely tradable shares and posted a 15-point gain. All this on a day when CNET announced no news.

Susan Pulliam & Rebecca Buckman, 'Winner Alert: CNET'; 'Its Gonna Fly Soon' 'CNET Is a Monster!!!', *WALL ST. J.* (Eastern ed.), Mar. 18, 1999, at A1.

Somewhat similarly, an electronic bulletin board affiliated with The Motley Fool was credited with influencing the price of stock in Zip drive manufacturer Iomega. Joseph Nocera, *Investing in a Fool's Paradise*, *FORTUNE*, Apr. 15, 1996, at 86. Contributors to the board called themselves Iomegans. *Id.* at 86. The market capitalization of the company reached \$1 billion, even though its P/E was 160. *Id.* at 88. Iomega believers attacked a financial columnist who wrote skeptically about the company and transformed bad news—for example, that Compaq announced a deal with an Iomega competitor—into good news. *Id.* at 93–94. For another discussion regarding the role of the message board in Iomega's stock price history, see CASSIDY, *supra* note 134, at 128.

²¹² One study concluded that a buy announcement for a small cap stock in the nightly performance recap of The Motley Fool's Rule Breaker Portfolio—during the period August 5, 1994, through December 31, 1998—increased the trading in, and the price of, the stock. Mark Hirschey et al., *How "Foolish" Are Internet Investors?*, 56 *FIN. ANALYSTS J.*, Jan.–Feb. 2000, at 62.

[The study] found that, on average, [The Motley Fool's ("TMF")] small-cap buy announcements had statistically significant positive wealth effects over the announcement day [which was

Aside from these outside sources, online traders could perform their own analyses of stocks, for they had immediate and unprecedented access to market data, historical price charts, earnings estimates, industry reports, and news stories.²¹⁴ Advertisements encouraged online investors to take control of their savings, and decide for themselves where, and for how long, those savings should be invested.²¹⁵ The ability to review data on the Internet, and immediate control over purchases and sales provided by online trading, arguably gave investors overconfidence in their prospects for making money through stock transactions that they personally directed.²¹⁶

apparently the first trading day after the relevant nightly recap] of, depending on estimation method, 3.36–3.72 [percentage points]. [Cumulative average abnormal returns] over the entire three-day period [from one day before the announcement day through one day after] averaged a surprisingly high 6.08–6.87 [percentage points] The investigation of abnormal trading volume provided strong corroboration of the influence of TMF announcements. Following the buy announcements for small-cap growth stocks, average abnormal trading volume was 126.53 percent above the normal volume predicted by the market model on [the announcement day] and 568.12 percent above normal for the entire [three-day] period.

Id. at 68. The three professors deduced that the “abnormal trading volume following TMF buy announcements probably reflects the activity of momentum-motivated day traders who are attracted to actively traded stocks. In any event, these results are consistent with the hypothesis that TMF buy announcements are closely followed and acted upon by Internet investors.” *Id.* The researchers also noted that the Rule Breaker Portfolio had produced market-beating returns. *Id.* at 65.

²¹³ Susan Pulliam, *Day Traders Power Fuel-Cell Stock Rise*, WALL ST. J. (Eastern ed.), Feb. 16, 2000, at C1. Pulliam references an article on Microsoft’s MSN Money Central, which predicted a 10,000%, 10-year return on Plug Power, a company that made hydrogen-based alternative fuel systems but which had not yet produced a commercially viable product. *See id.* Plug’s stock price rocketed from about \$25 on January 4, 2000 to an intraday high of \$156 twenty days later. *Id.* Day traders also drove up the price of at least four other somewhat similar stocks by, respectively, more than 66%, more than 100%, more than 70%, and more than 300%. *Id.* at C2. Pulliam quoted a research director at a New York investment firm as saying, “Once one stock in a particular segment starts moving, you begin to get the domino effect as profit-hungry day traders start buying.” *Id.* at C1.

²¹⁴ SEC Online Brokerage Study, *supra* note 205, at 16. “By one account, every on-line investor has access to over three billion pieces of financial data; those who are willing to pay have access to over 280 billion.” Barber & Odean, *supra* note 206, at 46.

²¹⁵ Brad M. Barber & Terrance Odean, *Online Investors: Do the Slow Die First?*, 15 REV. FIN. STUD. 455, 455 (2002) (noting an E*TRADE ad that asked: “If your broker’s so great, how come he still has to work?”; a Datek Online ad in which a middle-aged woman claims that “I’m managing my portfolio better than my broker ever did”; and Ameritrade’s “Momma’s Gotta Trade” ad in which one mom accomplishes a sale with a few clicks on her computer and exclaims, “I think I just made about \$1,700!” while another mother ruefully observes that “I have mutual funds”); NYAG, *Online Brokerage Report*, *supra* note 205, at 39 (quoting an investor testimonial appearing in an Ameritrade advertisement: “After trying several brokers, I finally found a stock market whiz. Me.” and the ad copy that said: “You can pick stocks with the best of them. All you need is a computer and Ameritrade. We give you the same research tools that many professionals use. So it’s easy to gain the knowledge you need to make the right picks.”).

²¹⁶ Barber and Odean offer a behavioral analysis, saying that “additional information can lead to an illusion of knowledge” and that “investors are likely to confuse the control they have—over which investments

Behavioral finance suggests that, as a result, investors were “likely to trade too often and too speculatively.”²¹⁷ Empirical research provides some support. A study of 66,465 households with accounts at a large discount brokerage from January 1991 through December 1996 found that the 20% with the highest portfolio turnover underperformed the 20% with the lowest turnover; increased trading decreased performance.²¹⁸ Looking at a subset of the same accounts—1607 investors who switched from phone-based trading to online trading—a further study found that a change to online trading brought higher portfolio turnover, more speculative trading, and worse performance.²¹⁹

they make—with the control they lack—over the return those investments realize.” Barber & Odean, *supra* note 206, at 46–48 (emphasis in original).

²¹⁷ *Id.* at 48. In addition, the “Internet especially facilitates comparisons of real time data, and thus has changed investors’ focus by emphasizing the importance of speed and immediacy Since information that captures attention tends to influence decisions unduly, short-term trends may increasingly influence individual investor trading.” *Id.* Barber and Odean also argue that online investors “concentrated their trading in e-commerce and other high-tech firms. Many e-commerce firms have novel, untested business plans. Many have little or no earnings. Values are based on distant projections” *Id.* at 50. But the illusions of knowledge and control—and consequent overconfidence—nevertheless influenced investment in these uncertain enterprises. *Id.*

²¹⁸ Brad M. Barber & Terrance Odean, *Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors*, 55 J. FIN. 773 (2000). The authors sorted the households into quintiles based on monthly turnover (the average of sales and purchase turnover). For each quintile, they calculated several types of returns—including raw, own-benchmark, and market-adjusted. They defined “raw return” as “the average monthly return for the average household” in a quintile; defined “own-benchmark abnormal return” as “the return on the household portfolio minus the return on the portfolio the household held at the end of the previous January,” in other words the return earned minus the return that would have been earned had the household not traded at all; and defined the “market-adjusted return” as “the return on the household portfolio less the return on a value-weighted NYSE/AMEX/Nasdaq index.” *Id.* at 783–84, 793. The researchers found that the 20% of households with the highest portfolio turnover underperformed the 20% with the lowest turnover by 46 basis points per month—5.5% per year—on raw return and market-adjusted return (with figures net of transaction costs) and underperformed by 57 basis points per month—or 6.8% per year—on own-benchmark figures. *Id.* at 792–94. The high-turnover quintile underperformed the value-weighted market index by 5.5% a year, and by 10.3% after accounting for the fact that their investments tilted toward small value stocks with high market risk. *Id.* at 800. The turnover rate for the most active 20% in this sample was more than two times a year. *Id.*

²¹⁹ Barber & Odean, *supra* note 215. Before switching, those who made the change had on average outperformed both the market and the average size-matched investor who did not switch. *Id.* at 472. Relying in part on psychological studies showing that people tend to attribute their successes to their personal abilities, the authors argue that this success fostered overconfidence. *Id.* at 459, 472–73. After the switch, the illusion of knowledge and the illusion of control kicked in. The first illusion is generally illustrated by studies showing that “[w]hen people are given more information on which to base a forecast or assessment, the accuracy of their forecasts tends to improve much more slowly than their confidence in the forecasts.” *Id.* at 460. Barber and Odean postulated that Internet traders “may [have been] tempted to believe that . . . data confer[] knowledge.” *Id.* The second illusion is generally illustrated by studies documenting that “overconfidence occurs when factors ordinarily associated with improved performance in skilled situations are present in situations at least partly governed by chance.” *Id.* at 461. The professors suggest that, since online traders

Day traders, who in a sense simply engaged in "an extreme form of online trading,"²²⁰ overwhelmingly lost money. A 1999 study by the Securities Division of the Washington State Department of Financial Institutions examined accounts at seven day-trading brokerage firms in that state.²²¹ Net of commissions, 77% of the traders lost money, and the profits of the remaining

could immediately control their orders without intercession by a broker, the onliners "may [have felt] that such active involvement improve[d] their chances of favorable outcomes" *Id.*

Whatever the reason, investors increased their trading after going online:

After switching online, investors trade[d] much more actively than before. Their average annual turnover increase[d] from 73.7% to 95.5% While online investors trade[d] more actively than their size-matched counterparts both before and after the switch, the difference in average turnover is much greater after the switch In the postswitch period, the average turnover of online investors is nearly double that of their size-matched counterparts (95.5% versus 48.2% . . .).

Id. at 475.

Barber and Odean considered speculative trading to consist of selling one stock in a portfolio and buying another in order to improve portfolio performance. *Id.* at 476. They accordingly parsed their sample to eliminate sales to meet liquidity needs, to rebalance, and to produce tax losses in order to "consider all profitable sales of complete positions that are followed by a purchase within three weeks as speculative and all purchases made within three weeks of a speculative sale as speculative." *Id.* Using this definition, they found that "speculative turnover nearly double[d] when investors [went] on-line (from 16.4% to 30.2%)" *Id.* They also found that:

Before going online, the stocks [the] investors [bought] speculatively outperform[ed] those that they [sold] speculatively by 59 basis points per month After going online, the stocks online investors [bought] speculatively underperform[ed] those that they [sold] speculatively by 27 basis points per month, though the underperformance is not reliably different from zero [by a test of statistical significance]. The difference in the relative performance of purchases and sales before and after going online is significant

Id. at 477. As to performance (using the same terms identified *supra* note 218):

Using any of our return measures, the gross and net returns of online investors who have already switched to online trading are less than those who have not yet made the switch. For example, the average net raw return of online investors who have commenced trading online is 36 basis points a month lower than that of online investors who have not yet made the switch (4.3% annually . . .). After going online net own-benchmark returns are 15 basis points a month lower Without equivocation, we can conclude that there is a dramatic erosion in the performance of online investors after they switch to online trading.

Id. at 477-78.

²²⁰ CASSIDY, *supra* note 134, at 232.

²²¹ See Senate Day Trading Report, *supra* note 201, at 31-32 (summarizing the study, which is reprinted in the form in which the Division presented it to Congress, at *Day Trading: Everyone Gambles But the House: Hearing Before the Permanent Subcomm. on Investigations of the Senate Comm. on Gov't Affairs*, 106th Cong. 365-94 (2000) [hereinafter *Senate Hearings on Day Trading*]). The Division conducted the study in September-November 1999 and reviewed a total of 124 open and active accounts. *Senate Hearings on Day Trading*, *supra*, at 368, 370. The accounts included ones open for only a month to accounts traded as long as twenty-five months. *Id.* at 370.

23% were small in comparison with the losses suffered by the majority.²²² These findings were not surprising, in part because of the high transaction costs that day trading occasioned.²²³

The rise of online trading was associated with an explosion in the percentage of outstanding shares traded. The turnover rate, defined as the total number of shares sold in a year, divided by the total number of shares, increased on the New York Stock Exchange from 42% in 1982 to 78% in 1999. On the NASDAQ, the rate increased from 88% in 1990 to 221% in 1999.²²⁴ Moreover, trading volumes were concentrated, with turnover rates particularly high for certain stocks.²²⁵ With turnover up, the average length of time that investors held stocks dropped.²²⁶

Indeed, the huge volume of trading by individual investors prompted the financial press to remark on a reversal of roles. Instead of retail investors following the pros, professional money managers in at least some instances jumped into momentum stocks driven upward by online traders so that the managers' funds would not be left behind.²²⁷

²²² Senate Day Trading Report, *supra* note 201, at 32. The accounts that were ahead showed aggregate gains of \$660,700, while the accounts that had lost money showed aggregate losses of \$4,462,604. Senate Hearings on Day Trading, *supra* note 221, at 374.

²²³ See SEC Day Trading Study, *supra* note 202, § IV.B (footnote omitted):

Day-trading firms generally charge commissions of between \$15–\$25 per trade and charge a substantial amount for additional services such as RealTick III data feeds, news, and exchange fees, which range between \$50–\$675 per month. Day traders must factor in these fees and costs in determining the point at which they are able to make a profit For example, a day trader who makes 50 trades per day at a firm with moderate fees (\$16.70 per trade, \$150 per month), must generate \$16,850 each month in trading profits to recoup the costs of the trades.

²²⁴ SHILLER, *supra* note 132, at 39.

²²⁵ Barber & Odean, *supra* note 206, at 50 (comparing the difference in the turnover rates of the 10% most actively traded stocks and the 10% least actively traded stocks from 1962 to 1999 and concluding that "[t]rading volume is more concentrated in high-turnover stocks in the late 1990s than at any time in the last four decades").

²²⁶ Gretchen Morgenson, *Investing's Longtime Best Bet Is Being Trampled by the Bulls*, N.Y. TIMES (Late ed.), Jan. 15, 2000, at A1 (saying that, in 1999, investors held stocks for an average of eight months rather than the two years typical a decade before, and that the average holding time for NASDAQ stocks was just five months).

²²⁷ Susan Pulliam, *Qualcomm Back Draft: Day Traders Bet on Look-Alikes*, WALL ST. J. (Eastern ed.), Jan. 10, 2000, at C1.

During the past several weeks, day traders have been scanning the message boards and stock Web sites looking for wireless technology stocks that could benefit from Wall Street's torrid love affair with Qualcomm

So, where have the day traders turned their sights? Interdigital Communications, which nearly quadrupled between Dec. 28 and Dec. 30 when it hit \$82. Sawtek, another favorite

B. What the Prominence of Amateur Traders During The Bubble Means for Court Use of the Efficient Market Theory

The advent of day traders and, more broadly, online retail traders making their own stock selections, challenges the fraud-on-the-market theory as applied by the courts in three ways. First, if the large volume in a company's stock derives from the frenetic transactions of money-losing day traders who are buying or selling simply to ride, and by their transactions amplify, a short-term price trend, then the fact that 1% or 2% of outstanding shares trade in a week does *not* suggest that seasoned market professionals are controlling price change through mature judgments on an ongoing basis about the fundamental value of the company in light of unexpected news. Put another way, large trading volume does not—if significantly including day trading and other online retail brokerage transactions—signal that the *mechanism* for efficient market pricing is actively working on the stock price. It may signal just the opposite. Accordingly, it may be inappropriate to consider percentage trading volume—the first *Cammer* factor—as an indicator of market efficiency during The Bubble.

Second, the power of day traders and other online brokerage customers to move stock prices throws into doubt the connection between mechanically efficient markets and the legitimacy of legal consequences from price movements. That legitimacy rides in significant part on the notion that mechanically efficient price movements are rational. And their rationality is supposedly assured by the controlling influence of market professionals who keep a sharp eye on (or at least pay some attention to) such matters as discounted cash flow valuations. When stock prices are driven by chatter on

Qualcom wanna-be of day traders, has jumped from \$41.25 Dec. 1 to \$62.3125 on the Nasdaq

Through it all has been a role reversal taking shape at times between big investors and day traders. Not long ago, institutional investors uniformly scoffed at the stocks being chased by day traders. These days, however, they increasingly are likely to jump on board a stock being favored by these frenetic individual investors rather than risk being left behind on another Internet stock's rapid ascent. . . .

Is the tail wagging the dog? "There is no question in the current environment day traders are having a significant impact in day-to-day price movements. To the extent that there is some room for hedge funds to follow along in that, why not?" says Henry Blodget, Merrill Lynch's Internet analyst.

It is all part of the trend among big investors to join the "momentum" party. The development also shows how profoundly the growing legion of day traders is influencing behavior in the broader market.

Id. The Senate Day Trading Report, *supra* note 201, at 34–35 cited to and quoted from this Pulliam article.

Internet message boards, decisions by retail investors who believe that they can pick the winners by looking at a few statistics on a Web page, or the recommendations of some Internet-popular guru, that rationality cannot be presumed. Stock prices will still move. Event studies may still show that the prices move in response to information. But the movement may well be so irrational in its origins that the legal system should not transfer money from one party to another as a result.

Third, and in the same vein, the significance of day traders and online retail traders to price movement raises questions about the connection between price movements and the normative aspects of 10b-5 elements. The reliance element requires reasonable reliance by the plaintiff on a market price as one reached by price changes reflecting news relevant to a stock's value. But is it arguably *unreasonable* for a plaintiff to rely on a price that is changing because of purchases and sales by trend-chasing novice traders who are unconcerned with issuers' businesses? A material fact is one that would likely be important to a reasonable investor. But is a misleading statement material because an anonymous chat room participant seizes upon the statement and successfully urges other chat room participants to buy or sell as a result? The loss causation element incorporates ideas of proximate cause and, in particular, public policy questions of who should pay for a loss. And damages in a 10b-5 case are limited to those that the defendant caused and are not intended as a form of investment insurance. But should a defendant be exposed to enormous damages if false news that it publishes is irrationally converted by frenzied amateurs into some huge price rise, or decline? Should the answer to that question be left to an event study that links the rise or decline to the news but is blind to whose trading caused the price change, or even whether the traders knew the product that the traded company produced?

The rhetorical nature of these questions suggests that the answer is "no" to all of them. But there is one more matter to consider before reaching a conclusion as to whether EMT provides a normatively satisfying compass in Bubble securities cases. Recall again the importance, to the theoretical link between mechanical and value efficiency, of the professionals who produce unbiased price changes.²²⁸ Those professionals include stock analysts. But analysts very arguably were behaviorally biased during The Bubble and

²²⁸ See *supra* Parts I.C, II.D.

accordingly may have encouraged price changes that were statistically biased upwards as The Bubble inflated.²²⁹

VII. WHETHER ANALYSTS WERE BIASED DURING THE BUBBLE: A SERIOUS QUESTION THAT, EVEN IF LEFT UNRESOLVED, SHOULD AFFECT THE APPLICATION OF EFFICIENT MARKET ANALYSIS TO BUBBLE CASES

Courts consider stock analysts to be agents of efficiency. Caselaw says that a stock is more likely to trade efficiently if more analysts follow the stock.²³⁰ In the past, the courts and the SEC have gone out of their way to praise the role of the analyst, especially emphasizing that an analyst can unearth new information and provide objective interpretation of new information, helping the market in both ways to incorporate information into stock prices. It is useful, however, to compare idealistic descriptions of analyst performance with the reality of analyst actions during The Bubble.

A. Court and Regulator Praise for Analysts

The Supreme Court commented in 1983 on "the role of market analysts, which the SEC itself recognizes is necessary to the preservation of a healthy market."²³¹ The Justices said that "analysts . . . can play" a "central role" in

²²⁹ This Article uses the word "bias" in two different senses: (1) statistical "bias," meaning systematic error consistently producing results that are over or under the estimated value; and (2) behavioral "bias," meaning a tendency, based on self-interest, to reach a certain outcome. The proponents of the efficient market theory argue that changes in market prices reflect changes in the values of securities without statistical bias because the changes in market prices do not systematically overestimate or underestimate the changes in values. See *supra* quote in text accompanying note 20. In Part VII, this Article argues that there are significant indications that sell-side analysts were behaviorally biased because they had economic incentives to publish overly optimistic reports on the issuers they covered. While conceptually different, the two types of biases are related in the sense that behavioral bias can lead to statistical bias. Thus, the behavioral bias of analysts to issue "buy" recommendations in their reports on issuers giving the analysts' employers investment banking business could lead to a statistical bias in consistently recommending stocks that would not perform as well as stocks that the analysts would recommend if they had no behavioral bias. See the Michaely & Womack study cited *infra* note 272. And, if analysts as a whole were too bullish during The Bubble because they were behaviorally biased, then, to the extent that analyst recommendations influenced stock prices, those prices may have been statistically biased toward overvaluation. Moreover, price changes may have been statistically biased upward—with good news given enthusiastic interpretations by analysts and reflected in overly optimistic "buy" recommendations and overly optimistic increases in price targets, which in turn may have contributed to inflated price reaction to the news itself.

²³⁰ See *supra* note 45 and accompanying text.

²³¹ *Dirks v. SEC*, 463 U.S. 646, 658 (1983) (citing the SEC's administrative decision in the *Dirks* case). Raymond Dirks was an analyst at a broker-dealer who had investigated Equity Funding of America, a company primarily engaged in selling life insurance and mutual funds. *Id.* at 648–49, 659 n.18. Ronald Secrist, a former Equity Funding officer, told Dirks that Equity Funding had overstated its assets. *Id.* at 649.

“revealing information that corporations may have reason to withhold from the public”²³² The Court observed that “[i]t is commonplace for analysts to ‘ferret out and analyze information’” and that “information that the analysts obtain normally may be the basis for judgments as to the market worth of a corporation’s securities. The analyst’s judgment in this respect is made available in market letters or otherwise to clients of the [analyst’s] firm.”²³³ The justices quoted with approval the SEC’s statement that “market efficiency in pricing is significantly enhanced” by analyst work.²³⁴

The Commission described analysts’ roles in 1998, using similarly complimentary language:

Investors acquire useful information regarding companies from sources other than Commission-mandated disclosure. One such source is analysts’ research reports. As the Commission has long acknowledged . . . analysts fulfill an important function by keeping investors informed. They digest information from Exchange Act reports and other sources, actively pursue new company information, put all of it into context, and act as conduits in the flow of information by publishing reports explaining the effect of this information to investors. They also express opinions and recommendations about investment in issuers’ securities

Investors benefit from being informed on an ongoing basis via analysts about particular securities and issuers.²³⁵

Dirks confirmed that charge by talking to Equity Funding employees. *Id.* As he conducted his investigation, Dirks talked about it with clients and investors, who sold more than \$16 million of Equity Funding stock. *Id.* at 649. While Dirks was investigating and spreading word of the scandal to these few, the price of the stock fell from \$26 to less than \$15. *Id.* at 650. After that trading and price decline, the SEC filed a complaint against Equity Funding, and the *Wall Street Journal* published an article based largely on the information that Dirks had assembled. *Id.* The SEC pursued Dirks and found in an administrative proceeding that he had aided and abetted trading by tippees (those he told about the scandal and who traded before the *Journal* article appeared). *Id.* at 650–51. Dirks sought review by the D.C. Circuit Court of Appeals, which entered judgment against him. The Supreme Court reversed the D.C. Circuit. Dirks was not himself an Equity Funding insider and “took no action, directly or indirectly, that induced the shareholders of Equity Funding to repose trust or confidence in him. There was no expectation by Dirks’ sources that he would keep their information in confidence. Nor did Dirks misappropriate or illegally obtain the information” *Id.* at 665. Accordingly, Dirks could not be liable unless the Equity Funding employees who talked to him had, by doing so, breached their duties. *Id.* But they had not because they “received no monetary or personal benefit for revealing Equity Funding’s secrets, nor was their purpose to make a gift of valuable information to Dirks [T]he tippees were motivated by a desire to expose the fraud.” *Id.* at 666–67.

²³² *Id.* at 658 n.18.

²³³ *Id.* at 658–59 (quoting from 21 S.E.C. Docket 1401, 1406 (1981)).

²³⁴ *Id.* at 658 n.17 (quoting from 21 S.E.C. Docket at 1406).

²³⁵ The Regulation of Securities Offerings, 63 Fed. Reg. 67,174, 67,216–17 & n.333 (Dec. 4, 1998). The SEC added that “[a]nalyt reports, however, also potentially can be misused to hype a company’s securities.

One lower court went further, concluding in 1992 that professional analysts are probably in a better position to “make the predictions about a corporation’s future which are relevant to the valuation of corporate securities” than company management in part “because the analyst’s reputation and livelihood depend solely on the analyst’s ability to be correct.”²³⁶ And at least some courts have recognized that an analyst’s report can be, itself, a new piece of information. That is, the analysis in the report can draw out unseen implications of information that is already public so that the market can then react to those implications.²³⁷

B. Evidence That Analysts May Have Been Biased During The Bubble

Sell-side analysts work for brokerage houses that sell securities to their customers.²³⁸ They provide express ratings on stocks, labeling some to “buy,”

Because they could do so under the guise of providing objective, independent analysis, they could unduly influence investors.” *Id.* at 67,217.

Note as well that Regulation FD has limited the role of the analyst as a conduit for company information by requiring companies to reveal material information to the public generally if they reveal it to any analyst. See 17 C.F.R. § 243.100 (2004).

²³⁶ *In re VeriFone Sec. Litig.*, 784 F. Supp. 1471, 1481 (N.D. Cal. 1992), *aff’d*, 11 F.3d 865 (9th Cir. 1993) (footnote omitted); *see also In re Res. Am. Sec. Litig.*, 202 F.R.D. 177, 190 (E.D. Penn. 2001):

An efficient market requires an analyst to make it efficient in many cases An analyst must take the information that is available in the public domain and assemble it in a way that makes sense. It is only at that point that the price of the security can truly reflect the available information.

²³⁷ In *Resource America*, plaintiffs alleged that a large drop in the price of the issuer’s stock occurred after an analyst named Roberts published a report stating his conclusion, based on information in the public domain, that Resource America’s accounting neither reflected the true economics of the business nor compliance with generally accepted accounting principles. 202 F.R.D. at 180.

It was not until Mark Roberts analyzed the information that the market was able to determine the existence of potential wrongdoing on the part of the defendants, and react to it. When information is made public, but presented in such a way as to render it incomprehensible without specific analysis, later analysis must be considered new information.

The Court concludes the Roberts’ Report was new information, to which the market responded.

Id. at 190. The opinion adds that “an efficient market is one in which analysts’ opinions contribute to the market price of a security, thus becoming novel pieces of information.” *Id.*

²³⁸ Here is one helpful taxonomy:

There are three types of analysts who evaluate stocks: sell-side analysts, buy-side analysts, and independent analysts. Sell-side analysts work for broker-dealers that offer brokerage services, usually to both institutional and retail clients. Buy-side analysts work for institutional money managers, including mutual funds or hedge funds, counseling them on what securities to buy or sell. Some independent analysts work for a broker-dealer that does not offer any client services, such as investment banking services, but which instead makes commissions from the sale of

some to “sell,” and some to “hold.” Sell-side analysts also frequently translate information into expected or “target” stock prices, thereby encouraging market participants to continue buying stocks in hopes that their prices will rise to the target levels. And the analysts provide summaries of the businesses operated by the companies issuing the stocks the analysts cover, highlight what the analysts believe to be key financial numbers for those companies, report on the industries in which the companies participate, and interpret, in the text of their reports, what new information about the companies or their industries portend for future stock price performance.

For analyst actions to fulfill the promises of the court and the SEC passages quoted above and for analyst actions to fit comfortably into the efficient market theory, however, the analysts must translate information into trading recommendations, target prices, and textual interpretation of new events in an unbiased way. Alas, it may not have been so during The Bubble.

1. The Overwhelming Number of “Buy” Recommendations and the Very Few “Sell” Recommendations During The Bubble

Sell-side analyst recommendations were so unbalanced in Bubble years, and even pre-Bubble years, that it is very difficult to maintain that they were unbiased. While different studies of recommendations use different data and therefore produce figures that are not necessarily comparable, the studies uniformly show that analysts overwhelmingly favored saying “buy” over saying “sell.”

One study of 361,620 analyst recommendations during the years 1985–1996 found that “[o]f all the recommendations in the database, 47.1 percent [were] buys whereas only 5.7 percent [were] sells.”²³⁹ A research paper by the

securities through a third-party brokerage. Other independent analysts sell their research through a retainer or subscription agreement to clients

STAFF OF SENATE COMMITTEE ON GOVERNMENTAL AFFAIRS, 107TH CONG., 2D SESS., FINANCIAL OVERSIGHT OF ENRON: THE SEC AND PRIVATE-SECTOR WATCHDOGS 71 (Oct. 8, 2002) [hereinafter SENATE GOV. AFFS. STAFF REP. ON WATCHDOGS].

²³⁹ Brad Barber et al., *Can Investors Profit from the Prophets? Security Analyst Recommendations and Stock Returns*, 56 J. FIN. 531, 536, 538 (2001). The researchers used data supplied by Zacks Investment Research. The academics noted that “the Zacks database [for 1986] includes the recommendations of 12 of the 20 largest brokerage houses, in terms of capital employed” and the database for 1996 “includes the recommendations of 12 of the 19 largest brokerage houses” *Id.* at 536 n.4. Some recommendations were unavailable to the researchers because certain brokerages had agreements with Zacks not to distribute their ratings to anyone other than those brokerages’ clients. *Id.* at 536. The data protocols converted each recommendation into a rating between 1 and 5, with 1 being a “strong buy,” 2 a “buy,” 3 a “hold,” 4 a “sell,”

same authors disclosed even more lopsided recommendations in later years. Using a different database and reviewing 228,039 recommendations during 1996 to 2001, the researchers found that the percentage of “buy” or “strong buy” recommendations stood at 65.2% in 1996 and climbed to 70.1% in 1999 and 72.1% in 2000—then decreased to 62.1% in 2001.²⁴⁰ “Sell” or “strong sell” recommendations constituted only 3.5% in 1996 and fell to only 2.8% in 1999 and 1.6% in 2000—then increased, but only to 3.6% in 2001.²⁴¹ With the understatement that characterizes academic writing, the researchers found that “[a]nalysts became more positive during 1999 and 2000” and “clearly reluctant to issue sell recommendations” in those Bubble years.²⁴²

Interestingly, the overwhelming tendency to recommend security purchases and the studied aversion to counseling “sell” continued after The Bubble burst. One report found that, even in June of 2001, out of 26,451 buy, sell, and hold recommendations reviewed, a mere 213 were sells.²⁴³ This is particularly striking because, as graphically displayed in Figures 1 and 2, the year 2000 and the succeeding year saw sharp stock price declines. It is difficult to believe that, without considerable bias at work, only a tiny percentage of covered stocks deserved any kind of a “sell” rating at any time in 2000 and 2001.²⁴⁴

and 5 a “strong sell.” For purposes of the statistics quoted in the text, the authors classified any 1 or 2 as a “buy” and any 4 or 5 as a “sell.” *Id.* at 538.

²⁴⁰ Brad Barber et al., *Reassessing the Returns to Analysts’ Stock Recommendations*, 59 FIN. ANALYSTS J., Mar.–Apr. 2003, at 88, 90 & tbl.2. In this study, the authors used data from First Call. *Id.* at 89.

²⁴¹ *Id.* at 90 & tbl.2.

²⁴² *Id.* at 90.

²⁴³ David Rynecki, *In Search of the Last Honest Analyst*, FORTUNE, June 10, 2002, at 68, 70; see also *id.* at 69–70 (“Last June, during the height of the recession—when even the most optimistic CEOs were unable to hide the bad news—investment analysts couldn’t find a stock they couldn’t tout.”). For a 2002 count, see John Kimelman, *Can Computers Do a Better Job Rating Stocks?*, N.Y. TIMES (Late ed.), Aug. 25, 2002, at C6:

As of Aug. 9, major analysts issued buys or strong buys . . . on 59 percent of the stocks they follow. They issued sells or strong sells . . . on 3 percent according to figures compiled by Zacks Investment Research. (The remainder were all holds.) A year ago, only one percent of the ratings were sells or strong sells.

²⁴⁴ Although the percentages varied somewhat depending on who was speaking, all showed that the so-called “sell-side” analysts employed by brokerage firms almost never recommended selling.

The Acting SEC Chairwoman referred, in April 2002, to “[o]ne survey show[ing] that in 2000, 99.1% of brokerage-house analysts’ recommendations were ‘strong buy,’ ‘buy’ or ‘hold’ recommendations.” Laura S. Unger, *How Can Analysts Maintain Their Independence?*, Remarks at the Ray Garrett Jr. Corporate and Securities Law Institute at Northwestern University School of Law (Apr. 19, 2002), available at <http://www.sec.gov/news/speech/spch477.htm>.

The director of research at Thomson/First Call testified in February 2002:

For at least the last several years, roughly one-third of all broker analyst recommendations were strong buys—or whatever their equivalent terminology was for the top category; similarly,

one-third were buys and one-third were holds. The total of both sells and strong sells was always less than 2 percent.

....

The above normal positive bias persisted until early 2001, even though the stock market indices were in decline from the spring 2000 highs. The shift that did occur was fairly minimal, roughly 6 percentage points shifted from strong buy to buy, and [about] 5 percent from buy to hold, and about 1 percent from hold to sell.

The Watchdogs Didn't Bark: Enron and The Wall Street Analysts: Hearing Before the Senate Comm. on Governmental Affairs, 170th Cong. 54 (2002) (Testimony of Charles L. Hill) [hereinafter Sen. Gov. Affairs Comm. Hrg. on Enron Analysts]; see also *id.* at 109 (Hill's prepared statement). As an example and looking at the period July 1, 1999, to June 30, 2001, the SEC alleged that "there was a sharp downturn in the stock market and stocks in selected sectors performed poorly [but] Bear Stearns did not issue ratings of 'Unattractive' or 'Sell' [its bottom two out of five rankings] in connection with any covered companies in the selected sectors." Compl. ¶¶ 2, 43, SEC v. Bear, Stearns & Co., Inc., (S.D.N.Y., filed Apr. 28, 2003) (No. 03 CV 2937 (WHP)) [hereinafter SEC Bear Stearns Compl.].

This complaint against Bear Stearns was filed as part of the settlement that ten major brokerage houses/investment banks reached with multiple regulators at the end of the investigation of research analysts described *infra* note 285. The SEC filed complaints—which this Article frequently cites in the following notes—against all ten firms in U.S. district court in April 2003 and simultaneously settled with those firms, with the settlements embodied in proposed judgments provided to the U.S. district court. The settlements were subject to court approval. The federal court approved the settlements with the ten firms in October 2003, after modifications to the originally proposed judgments that are not germane to the Article. U.S. SEC, Litigation Release No. 18438, Federal Court Approves Global Analyst Research Settlement (Oct. 31, 2003), available at <http://www.sec.gov/litigation/litreleases/lr18438.htm> [hereinafter Global Analyst Research Settlement Litigation Release].

The New York Attorney General's office—which led the investigation of some of the ten firms—also signed Assurances of Discontinuance ("AODs") in April 2003 as to two of the ten firms, Citigroup Global Markets (which had operated as Salomon Smith Barney during The Bubble) and Morgan Stanley. The two firms agreed in the AODs to make the same payments and to implement essentially the same reforms that the firms agreed to make and to implement in the federal settlement. The New York Attorney General agreed in the AODs that his office would not otherwise proceed against the firms for the conduct uncovered in the investigations.

Each of the complaints filed by the SEC in April 2003 contained detailed factual allegations that the defendant firm neither admitted nor denied. Each AOD contained "findings" that the settling firm neither admitted nor denied. The "findings" in the AOD for Citigroup Global Markets and the "findings" in the AOD for Morgan Stanley were, respectively, in many instances virtually identical to the factual allegations in the SEC complaints against Citigroup Global Markets and Morgan Stanley. As to each of those firms, this Article cites only to the AODs and does not provide parallel citations to the SEC complaints. All of the complaints are available on the SEC's Web site, and the AODs are available on the New York Attorney General's Web site.

Note that, as set out *infra* note 285, the early stages of the analyst investigation generated a lawsuit in state court that the New York Attorney General brought against Merrill Lynch, then settled through an agreement with Merrill. The Attorney General's office filed in that lawsuit an affidavit filled with details. See *infra* note 259. But Merrill Lynch also later participated as one of the ten firms in the overall analyst settlement and, at the time of that settlement, the SEC filed a complaint against Merrill in U.S. district court. Accordingly, the notes that follow cite two different sources for facts about Merrill Lynch—the affidavit filed in the state court action and the complaint later filed by the SEC. Merrill Lynch did not admit any wrongdoing charged against it in either the affidavit that the NYAG filed in state case or the complaint that the SEC filed in the federal action.

The continued inclination to counsel “buy” instead of “sell” (indeed, as Part VII.B.2 discusses, even when the bottom dropped out of stocks and companies headed toward Chapter 11 proceedings) suggests an organizationally embedded bias that existed during The Bubble and continued thereafter.

Statistics from major individual brokerages confirm the huge percentage of “buy” recommendations and the extremely low percentage of “sell” recommendations, at least as alleged by the SEC in complaints that it filed against the brokerages in the spring of 2003. From 1999 to 2001, analysts at Salomon Smith Barney (now Citigroup Global Markets Inc.) used five ratings: buy, outperform, neutral, underperform, and sell. On January 29, 2001, out of a total of 1179 stock ratings, there were *no* sell ratings and only one underperform; as of the end of 2001, Salomon analysts covered over 1000 U.S. stocks but still had *no* sell ratings and only fifteen underperforms.²⁴⁵ From July 1999 through June 2001, analysts at Goldman Sachs used a four-tier rating system—recommended list, market outperformer, market performer, and market underperformer—but they never during that time assigned the lowest ranking (market underperformer) to more than 1.1% of the companies they covered.²⁴⁶ Morgan Stanley employed a four-category system—strong buy, outperform, neutral, and underperform—but

[n]o more than three of the 1033 stocks covered over the course of 1999 were given an Underperform rating; no more than five of the 1058 stocks covered over the course of 2000 received that rating; and no more than six of the 1030 stocks covered over the course of 2001 were rated Underperform.²⁴⁷

Lehman used five ratings, with the lowest being a “sell,” yet it apparently did not issue a single sell rating to a domestic company during the period reviewed by the regulators.²⁴⁸ During most of the period from June 1999 through 2001,

²⁴⁵ Attorney General of the State of New York Bureau of Investment Protection, Assurance of Discontinuance, Findings ¶¶ 3, 22, 25–26, *In re Citigroup Global Markets Inc.* (Apr. 21, 2003) [hereinafter NY Salomon AOD].

²⁴⁶ Compl. ¶¶ 2, 12–13, SEC v. Goldman, Sachs & Co. (S.D.N.Y., filed April 28, 2003) (No. 03 CV 2944 (WHP)) [hereinafter SEC Goldman Compl.]. On the other hand, Goldman only gave its top two ratings—Recommended List and Market Outperformer—to 72% of the issuers it covered in the first quarter of 1999 and to 50% in the last quarter of 2001. *Id.* ¶ 13.

²⁴⁷ Attorney General of the State of New York Bureau of Investment Protection, Assurance of Discontinuance, Findings ¶¶ 54–55, *In re Morgan Stanley & Co.* (Apr. 21, 2003) [hereinafter NY Morgan Stanley AOD].

²⁴⁸ Compl. ¶¶ 15–16, SEC v. Lehman Brothers Inc. (S.D.N.Y., filed Apr. 28, 2003) (No. 03 CV 2940 (WHP)) [hereinafter SEC Lehman Compl.]. The first paragraph of the complaint suggests that the regulators’

Piper Jaffray used four ratings: strong buy, buy, neutral, and sell. More than 80% of its analyst research reports included “buy” or “strong buy” recommendations; on average less than 20% of covered companies received a “neutral” rating; and, throughout the period, less than 1% of the companies were rated “sell.”²⁴⁹

2. “Buy” Ratings Maintained on Stocks as They Dropped

After The Bubble burst and stocks began to tumble, analysts in a disturbing number of instances kept their “buy” or “hold” recommendations in place even as companies headed towards bankruptcy. Salomon Smith Barney (“SSB”) analyst Jack Grubman gave WorldCom SSB’s top rating—“buy”—and a “medium” risk assessment in early April 1998, when WorldCom was trading at \$42.75 per share.²⁵⁰ He set \$60 as his “target price.” By early October of that year, the stock traded in the mid-\$40s and Grubman raised his target price to \$90 in two years. When the stock rose to \$85 by late February 1999, the SSB analyst lifted his target to \$100, and raised it again to \$130 in late May 1999, when the stock was still in the mid-\$80s.

But when the share price began to tumble, Grubman lowered his target price at a reluctant pace and, until close to the company’s bankruptcy, did not change either his recommendation or risk rating. Thus, by late June 2000, the stock had fallen to \$37.50, and SSB now showed a target price of \$87. Grubman kept the \$87 target in reports issued through the time the stock fell to \$25.25. He lowered the target to \$45 at the beginning of November 2000 when the stock traded at about \$19 and continued to issue reports with that target through a day the stock traded at \$14.47. In late July 2001, when the shares were going for \$13.35, Grubman brought his target down to \$35. The target remained there until SSB lowered it first (in October 2001) to \$22 and then (in January 2002) to \$20 when the market prices were, respectively, \$12.45 and \$13.15. The target fell to \$12 on February 7, 2002, when the stock was down to \$7.52.

review covered July 1999 through June 2001.

²⁴⁹ Compl. ¶¶ 2, 45, SEC v. U.S. Bancorp Piper Jaffray Inc. (S.D.N.Y., filed Apr. 28, 2003) (No. 03 CV 2942 (WHP)) [hereinafter SEC Piper Compl.].

²⁵⁰ The first report of the Examiner appointed by the court in the WorldCom bankruptcy contains tables at pages 91–97 that set out the ratings and target prices in SSB analyst reports on WorldCom, as well as the prices of WorldCom stock at the times SSB issued those reports. First Interim Report of Dick Thornburgh, Bankruptcy Court Examiner, Chapter 11, *In re WorldCom, Inc.* (Bankr. S.D.N.Y., report dated Nov. 4, 2002) (Case No. 02-15533 (AJG)) [hereinafter First WorldCom Examiner Report]. The numbers in this narrative are taken from those tables, which do not retroactively adjust for a three-for-two stock split in November 1999.

During all this time—as the stock fell from the mid-\$80s to less than \$10 a share—SSB maintained its “buy” recommendation and its “medium” risk rating. It was not until mid-March 2002 that SSB raised the risk assessment to “high,” and not until early May that it raised that assessment to “speculative.” Grubman rated WorldCom a “buy” until he downgraded it to a “neutral” on April 21, 2002. SSB finally lowered the WorldCom rating to “underperform” on June 21, 2002—just one month before WorldCom filed what was at that time the largest bankruptcy in United States history on July 21.²⁵¹

The buoyant WorldCom ratings that SSB continued to issue as the stock headed south were not an isolated example. The NASD filed a disciplinary complaint against Grubman and another SSB analyst alleging that SSB maintained a \$50 target price for Winstar as its stock price fell from \$17 on January 25, 2001 to \$9.218 on March 9, 2001, and issued reports with “buy” recommendations through March 21, when the stock had declined to \$2.513. The analysts only reduced the rating to “underperform” on April 17, after Winstar had announced that: (1) it had not made an interest payment on senior debt; (2) Lucent had declared Winstar in default on a credit facility; (3) the company had hired a firm to advise it on restructuring; and (4) Winstar was considering a Chapter 11 filing. Winstar filed a bankruptcy petition on April 18.²⁵² In regulatory proceedings settled in 2003, the SEC and New York Attorney General alleged more cases in which analysts at Credit Suisse First Boston (“CSFB”),²⁵³ Morgan Stanley,²⁵⁴ Merrill Lynch,²⁵⁵ and Piper Jaffray²⁵⁶ maintained similarly lofty ratings for decaying stocks.

²⁵¹ Simon Romero & Riva D. Atlas, *WorldCom Files for Bankruptcy; Largest U.S. Case*, N.Y. TIMES (Late ed.), July 22, 2002, at A1.

²⁵² Compl. ¶¶ 14, 25, 35, Dept. of Enforcement v. Jack Benjamin Grubman, (NASD Office of Hearing Officers, dated Sept. 23, 2002) (Disciplinary Proceeding No. CAF 020042) [hereinafter NASD Grubman Compl.]. The NASD resolved its disciplinary case against Grubman in April 2003. Offer of Settlement, Dept. of Enforcement v. Jack Benjamin Grubman (NASD Office of Hearing Officers, dated Apr. 21, 2003) (Disciplinary Proceeding No. CAF 020042) and Order Accepting Offer of Settlement (dated Apr. 24, 2003). Grubman neither admitted nor denied the allegations in the NASD proceeding. As part of an overall settlement with regulators, Grubman agreed to pay \$15 million and agreed to a bar from the securities industry. See *infra* note 289.

²⁵³ CSFB analysts retained a “strong buy” rating and a \$79 price target on Winstar from January 5, 2001 through April 3 of that year as the stock sank from \$17 to \$.31; rated Razorfish a “strong buy” from January 12, 2000 until October 27, 2000, as the shares fell from \$39 to \$4, then rated the stock a “buy” from October 27 to May 4, 2001, as the stock descended from \$4 to \$1.14 when the rating went to “hold”; and initiated coverage on Digital Impact with a “buy” when the stock was just under \$50, rating those shares as either a “buy” or a “strong buy” as the price slumped to less than \$2. Compl. ¶¶ 45 (Razorfish), 50 (Digital Impact), 64–66 (Winstar), SEC v. Credit Suisse First Boston LLC, F/K/A Credit Suisse First Boston Corp. (S.D.N.Y., filed Apr. 28, 2003) (No. 03 CV 2946 (WHP)) [hereinafter SEC Credit Suisse Compl.].

²⁵⁴ Morgan Stanley analysts left its second-highest rating—outperform—unchanged on thirteen stocks in

One or several such individual cases might be explained by the special circumstances surrounding the companies. For example, it is possible for a company whose stock has experienced even a many-month decline to be a good investment. It might be an attractive merger target for another company that could be willing to pay a premium.²⁵⁷ Some other extraordinary event might be possible that could turn the company around. Or the price might become ever more attractive as it declined, provided that the business remained sound. But there were multiple instances in which, in 2002, analysts failed to warn investors to get out of companies that were headed for bankruptcy court.²⁵⁸ In other cases, analysts simply dropped coverage to avoid a

2000 and 2001 while the price of each of them dropped by more than 74%. NY Morgan Stanley AOD, *supra* note 247, ¶ 52.

²⁵⁵ Merrill Lynch rated Internet Capital Group 2-1 (an intermediate term “accumulate” and a long-term “buy”) from the time Merrill commenced covering the stock (then at \$53.50) through the time the goose hung high (when the stock reached \$212 in early 2000) and long into the subsequent dive, leaving the 2-1 rating still in place in early November 2000 when the stock was at \$11. Compl. ¶¶ 12–13, 90, SEC v. Merrill, Lynch, Pierce, Fenner & Smith Inc. (S.D.N.Y., filed Apr. 28, 2003) (No. 03 CV 2941 (WHP)) [hereinafter SEC Merrill Compl.].

²⁵⁶ Piper Jaffray rated Triton Network Systems a “buy” from the time Piper published its first report, past the time the stock peaked at \$47.75 and while the shares cratered to \$1.8125. SEC Piper Compl., *supra* note 249, ¶ 49. About two months after Piper had dropped Triton to “Neutral,” a “research analyst told the head of Piper Jaffray’s equity research department that since the company was in bankruptcy proceedings, ‘we can drop now if banking says ok.’ Piper Jaffray discontinued coverage of Triton with a last published rating of ‘Neutral.’” *Id.* ¶ 50.

For another example, see Geraldine Fabrikant & Simon Romero, *When Wall Street Advice Turns Costly*, N.Y. TIMES (Late ed.), Mar. 11, 2002, at C1 (reporting analysts’ continued favorable recommendations for Global Crossing stock as its price declined).

²⁵⁷ This is part of what makes the Enron case somewhat hard to judge. A Senate committee staff report criticized sell-side analysts from fifteen large firms covering Enron (a) because the majority of them continued to maintain buy recommendations on Enron stock even after (1) the company announced some \$1 billion in nonrecurring charges, (2) the *Wall Street Journal* reported on related-party transactions between Enron and its CFO, (3) the CFO resigned, (4) the company disclosed a formal investigation by the SEC, and (5) Enron said that it would restate financials going back more than four years; and (b) because only two analysts rated Enron a sell when the company went into bankruptcy on December 2, 2001 (with seven firms rating Enron a hold at that time, one still saying buy and the rest of the fifteen presumably no longer covering Enron). SENATE GOV. AFFS. STAFF REP. ON WATCHDOGS, *supra* note 238, at 72–73. The possibility that Enron would be “saved by the bell” through a merger with Dynegy, however, persisted until shortly before Enron went into the tank. See Alex Berenson, *Debt Rankings Finally Fizzle, but the Deal Fizzled First*, N.Y. TIMES (Late ed.), Nov. 29, 2001, at C7.

The analysts—like others—also explained their support of Enron as based on misinformation distributed by the company’s management. Sen. Gov. Affairs Comm. Hrg. on Enron Analysts, *supra* note 244, at 22 (testimony of Raymond C. Niles, Senior Analyst, Citigroup Salomon Smith Barney, Feb. 27, 2002).

²⁵⁸ One survey of the publicly available ratings on publicly traded companies that filed for bankruptcy protection during 2002 found that most brokerages maintained a “buy” or “hold” rating on at least one covered company as the company entered its chapter proceeding.

downgrade.²⁵⁹ Particularly when combined with the overwhelming tendency to pass out “buy” ratings and shun “sell” ratings, these facts suggest that

Date of Failures	No. of Brokerage Firms in Study	No. of Brokerage Firms with Buy or Hold Recommendations for at Least One Company on the Date of the Company's Chapter 11 Filing	Percentage of Brokerage Firms with Buy or Hold Recommendations for at Least One Company on the Date of the Company's Chapter 11 Filing
1/1-4/30 2002	50	47	94
5/1-8/31 2002	62	46	74
9/1-12/31 2002	30	20	66

Weiss Ratings Inc., Research Analyst Reforms and the Settlement, at 31 (May 2, 2003), *available at* <http://www.weissratings.com/settlement/settlement.pdf>. Moreover, a surprising percentage of the companies that went under had, at that time, exclusively buy or hold recommendations on their stock from publicly available sell-side research reports.

Date of Failures	No. of Failed Companies	Failed Companies Rated Exclusively Buy or Hold on the Date of the Chapter 11 Filing	Percentage of Companies Rated Exclusively Buy or Hold on the Date of the Chapter 11 Filing
1/1-4/30 2002	19	12	63.2
5/1-8/31 2002	19	9	47.4
9/1-12/31 2002	18	7	38.9

Id. at 32. Consider this study with some skepticism. First, the company that prepared it appears to be an independent research provider, which may have an interest in encouraging disbelief in the wisdom of brokerage research reports. Second, the number of bankrupt companies in each of the three-month time periods seems small for purposes of statistical analysis. Third, there could have been special circumstances in one or more cases, such as the possibility or probability of a last-second, company-saving transaction. Fourth, some analysts may have simply failed to update their reports frequently enough as the companies went downhill. This last would be a particular problem in a case where the company's problems surfaced very shortly before bankruptcy. Even with all these caveats, however, the findings are still disturbing, particularly when combined with all of the other evidence that analysts favored buy and hold recommendations over sell recommendations.

²⁵⁹ An affidavit filed by the New York Attorney General's office made this point:

Although Merrill Lynch's published rating system provided for 4s (reduce) and 5s (sell), the internet group never used 4s or 5s. The list of covered internet stocks for the second quarter of 2000, for instance, lists 24 stocks, none of which was rated less favorably than a 2 [for "accumulate"]. From the spring of 1999 to the fall of 2001, Merrill Lynch never published a single reduce or sell rating on any stock covered by the internet group. In their sworn testimony, both Blodget and his subordinate . . . confirmed that the group never rated a stock 4 or 5. Thus, although represented to be a five-point system, internally it became a three-point system. In lieu of assigning reduce or sell recommendations to stocks they no longer favored, the internet group instead merely quietly stopped covering the stock, without any announcement or meaningful explanation to the retail public.

Aff. in Support of Application for an Order Pursuant to General Business Law Section 354, at 9 (Aff. dated Apr. 8, 2002), In the Matter of an Inquiry by Eliot Spitzer, Attorney General of the State of New York, Pursuant to Article 23-A of the General Business Law of the State of New York with Regard to the Acts and Practices of Merrill Lynch & Co. (Sup. Ct. N.Y.) (Index No. 02/401522) [hereinafter NY Merrill Aff.] (references to transcripts and documents omitted).

analysts may have kept or left a biased “buy” on at least some stocks as the companies came apart.

3. *Regulator Allegations of Instances in Which Analysts Did Not Believe the “Buy” Ratings They Assigned*

The investigation of research analysts begun by the New York State Attorney General and then continued by that office and other regulators (of which more will be said later) turned up what appeared to be startling instances in which analysts or research management privately denigrated stocks they were telling the public to buy. The regulators’ allegations involved whole lists of stocks,²⁶⁰ as well as some pretty graphic tales about particular securities.²⁶¹

The New York Attorney General similarly found that, at Salomon Smith Barney, Mr. Grubman and his group [covering telecom companies], with only one exception, did not rate a stock a 4 [“underperform”] during the relevant period [1999–2001] and never rated a stock a 5 [“sell”] Rather, he and the research personnel who reported to him would drop coverage altogether rather than rate a stock at less than a Neutral.

NY Salomon AOD, *supra* note 245, ¶ 31; see also Gretchen Morgenson, *At Lehman, the Case of the Buried Stock Ratings*, N.Y. TIMES (Late ed.), Feb. 16, 2003, § 3, at 1 (referring to “the Wall Street practice of quietly dropping coverage on companies, instead of officially downgrading them . . .”).

²⁶⁰ The New York Attorney General and the SEC alleged that, when the head of Smith Barney’s Global Equity Research made a presentation about Smith Barney’s stock recommendations on January 29, 2001—when the 1179 ratings included only one Underperform and no Sell rankings—his handwritten notes described these as “ridiculous on face.” NY Salomon AOD, *supra* note 245, ¶ 25. The SEC complaint against Goldman Sachs recited this exchange:

In August 2000, the Business Unit Leader for European Telecommunications research e-mailed his U.S. counterpart about the “anomalous situation where our sector has been tanking for 3–4 months and we globally still have a majority of stocks as R[ecommended] L[ist] as that is all the salesmen and clients care about.” He suggested that his U.S. counterpart consider the approach taken by him: “In Europe, we have found that honour is preserved if we have a stock as an M[arket] O[utperformer] and the companies can’t complain because its [sic] better than an M[arket] P[erformer].” In his response, the Business Unit Leader for U.S. Telecommunications research agreed, saying:

The plan we have in place now is that in early September we are going to re-rate most of the CLECs [competitive local exchange carriers], which is where the problem is the most egregious. The ratings were a residual from [a former research analyst], and I never changed them, not wanting to disrupt things too much. But it’s ridiculous. I’ve already met with the bankers, and plan to move most of the companies down to M[arket] O[utperformer], from R[ecommended] L[ist] before [another analyst] takes over completely in September. For the other segments the situation is not as bad, and where there is a problem, investment banking considerations have prevented me from making a change (i.e. AT&T, WCOM [Worldcom]). I don’t think I would end up leaving only 7.5% as R[ecommended] L[ist], but the present 68% is ridiculous

SEC Goldman Compl., *supra* note 246, ¶ 60 (emphasis added).

²⁶¹ Goldman Sachs included WorldCom on its Recommended List—thereby giving the stock Goldman’s

While most of the allegedly misleading reports appeared on the back side of The Bubble as stock prices were falling, misleadingly optimistic reports at that time at least suggest the possibility that a bias was present in the preceding months during which The Bubble enjoyed its enormous inflation.

4. *Regulator Allegations That Investment Banking Considerations Influenced Analysts To Publish "Buy" Ratings*

Regulators alleged in 2003 that one principal reason for analyst bias towards "buy" recommendations was that most of the major brokerage houses had profitable investment banking divisions that were closely linked with research departments. Inflated research ratings and target prices were part and

highest rating—between July 1999 and July 2001. But when a hedge fund customer asked the Business Unit Leader of Goldman's U.S. Telecommunications research in April 2001 whether to "buy sell or hold" the stock, the Goldman Leader allegedly responded, "sell." *Id.* ¶ 64.

Three weeks before Lehman initiated coverage of Razorfish in May 1999, an institutional investor told the Lehman analyst that he (the investor) would rate the company "neutral [which would be a '3' in Lehman's system] with a price target of \$20." The analyst assertedly responded that "they are a banking client, so I expect a 2 rating with a price target just a shade above the trading price;" said that "ratings and price targets are fairly meaningless . . . commentary is what matters and I'll be a 3-Neutral in my comments;" and noted that the "buy-side generally ignores" ratings and targets but that "the 'little guy' who isn't smart about the nuances may get misled, such is the nature of my business." Lehman then assigned a 2-Buy rating to Razorfish and a price target of \$48, when that stock traded at \$36. SEC Lehman Compl., *supra* note 248, ¶¶ 15, 65–67. On another company, a Lehman analyst supposedly advised an institutional investor on July 18, 2000, that the stock "has to be a short big time" even though the analyst issued a report the next day rating the stock a 1-Buy. *Id.* ¶¶ 83–84. In January 2001, "that same analyst wrote to an institutional investor, 'if it's in my group it's a short' despite the fact that the analyst maintained 1-Strong Buy ratings on all of his stocks." *Id.* ¶ 87.

The regulators alleged similar incidents at other firms. SEC Merrill Compl., *supra* note 255, ¶¶ 12–13, 57, 64 (asserting that Merrill's top Internet analyst called the \$100 share price target for InfoSpace "stupid" and referred to the stock as a "piece of junk" in October 2000 when Merrill rated the stock an intermediate and long-term buy and InfoSpace traded at around \$20); *id.* ¶¶ 79–81 (alleging that the same analyst called LifeMinders a "POS" for "piece of shit" in December 2000 when Merrill rated the stock 2-1, for accumulate-buy); NY Salomon AOD, *supra* note 244, ¶¶ 41, 48 (charging that Salomon's top telecommunications analyst wrote after Winstar declared bankruptcy on April 18, 2001, that six stocks "must not remain buys" but that Salomon maintained buy ratings on one of those stocks until mid-June, another until August 2, two others until mid-August, and the last two until November 1); *id.* ¶¶ 53–55 (charging that the same analyst referred to one of the six stocks as a "pig" at a time when Salomon rated it a buy, with another analyst telling an institutional investor that this stock was one of the "pigs" and "definitely" a short); SEC Bear Stearns Compl., *supra* note 244, ¶ 72 (alleging that an analyst said in an April 2002 email that he felt "compromised" because he had been telling clients in phone calls to avoid or short Digital River even though he had an "artificial Buy" on the stock); Compl. ¶¶ 82–91, SEC v. UBS Warburg LLC (S.D.N.Y., filed Apr. 28, 2003) (No. 03 CV 2943 (WHP)) [hereinafter SEC Warburg Compl.] (asserting that, during the first half of 2000, an analyst cautioned members of his firm's sales force against putting customers into Interspeed, and advised at least one member of the sales force as well as two institutional customers that Interspeed was a "short"—all while maintaining a "buy" rating on the stock).

parcel, the regulators concluded, of efforts to win investment banking business, and analysts were compensated for helping to land that work by producing research reports that overpraised companies that did, or might, send investment banking business to the firms for which the analysts worked.¹ Here is a summary of those charges.

Research reports on a company—or the prospect of research reports—could contribute to an effort to win a lucrative investment banking assignment.²⁶² In part for this reason, analysts participated with investment bankers in “pitching” for investment banking business.²⁶³ Some pitches included stories suggesting that the analysts at a firm could, by their reports and recommendations, move a company’s stock price up;²⁶⁴ some included

²⁶² NY Morgan Stanley AOD, *supra* note 247, ¶ 13 (“In selecting the lead underwriters [who would make the most money from an offering], issuers assessed a host of factors, including the strength and quality of the bankers’ research coverage. Issuers sought research coverage of their stocks, believing such coverage would enhance the credibility of their businesses, potentially lead to higher stock prices, and increase their exposure to the investing public.”); *id.* ¶ 24 (alleging that internal firm documents identified specific instances in which the firm won investment banking business because, or in part because, it promised analyst coverage); SEC Bear Stearns Compl., *supra* note 244, ¶ 21 (“The analyst’s reputation played a role in pitching Bear Stearns’ [investment banking] services to potential clients. Issuers often chose an investment bank because of the reputation of the analyst that would cover the company’s stock.”); *see also* SEC Warburg Compl., *supra* note 261, ¶ 23 (“In the 1990’s the importance of research issued by analysts increased as a result of the dramatic growth in the number of individual investors and the availability of online trading. Research coverage became a marketing tool, and issuers sometimes chose an investment bank based upon the expectation that a certain analyst would cover the company’s stock favorably.”).

²⁶³ At Morgan Stanley, during 1999 to 2001, “[a]nalytsts drafted portions of the pitchbook and almost always attended the presentations for IPO business.” NY Morgan Stanley AOD, *supra* note 247, ¶ 15; *see also* NY Salomon AOD, *supra* note 245, ¶ 15 (“SSB’s research analysts were expected to support investment bankers by pitching business to prospective clients.”); SEC Bear Stearns Compl., *supra* note 244, ¶ 18 (“In competing for an IB mandate, Bear Stearns typically sent bankers and the analyst to meet with company management to persuade the company to select Bear Stearns as one of the investment bankers in a contemplated transaction.”); *id.* ¶ 19 (“In preparation for each ‘pitch’ the bankers, with the analyst’s input, prepared a ‘pitch book’ which was distributed at the meeting”); SEC Credit Suisse Compl., *supra* note 253, ¶ 31 (“The Director of Research for the Technology Group described the technology research analyst as the ‘star of the show’ at pitches. CSFB pitch books to potential clients included representations about the role the . . . analyst would play if CSFB obtained the business.”); SEC Goldman Compl., *supra* note 246, ¶ 38 (alleging that an internal firm document from 2000 said “research analysts, on 429 occasions, solicited 328 transactions in the first 5½ months of this fiscal year”).

²⁶⁴ NY Morgan Stanley AOD, *supra* note 247, ¶ 19 (asserting that the pitchbook produced to a chip maker in July 2000 emphasized that one of its analyst’s “support” of eight semiconductor IPOs since 1997 had “resulted in unparalleled performance in the public market” and included a line graph showing the increase in the prices of those stocks from 1998 through March 2000); SEC Lehman Compl., *supra* note 248, ¶ 57 (alleging that pitchbooks described an analyst “as the ‘axe’ in the industry and provided numerous examples of how the analyst’s positive coverage had positively impacted a company’s stock price.”); SEC Warburg Compl., *supra* note 261, ¶ 63 (“[T]he pitch book presented to JDS Uniphase by PaineWebber discussed the impact that PaineWebber research had on covered stocks by including a graphic depicting the performance of stocks on PaineWebber’s ‘Buy List’ as opposed to stocks on PaineWebber’s ‘Attractive List’ or ‘Neutral List.’

favorably phrased "mock" research reports on the company whose investment banking work was being sought.²⁶⁵

Investment banking considerations affected which companies research analysts covered.²⁶⁶ And pressures from the investment banking side of the

At the top of the graphic, PaineWebber quoted a report from Reuters which stated, 'Shares of semiconductor companies specializing in chips for the communications market rose on Thursday after PaineWebber published a report citing the sector's growth prospects.'"); Compl. ¶ 64, SEC v. J.P. Morgan Sec. Inc. (S.D.N.Y., filed Apr. 28, 2003) (No. 03 CV 2939 (WHP)) [hereinafter SEC J.P. Morgan Compl.] ("Defendant utilized 'case studies' [in pitch materials] of companies under coverage that included charts comparing the dates of positive published research to the company's stock price."); *id.* ¶ 65 (providing examples of such "case studies" used in a specific pitch); *see also* SEC Goldman Compl., *supra* note 246, ¶ 44 (alleging that some pitchbooks juxtaposed analysts' positive comments about companies with positive performance by those companies' stock prices).

²⁶⁵ NY Morgan Stanley AOD, *supra* note 247, ¶ 21 ("In addition to pitchbooks, Morgan Stanley occasionally provided draft or 'mock' research reports to issuers to provide an example of how analysts might describe the issuer to investors. The draft or mock reports described the issuers in favorable terms without including ratings or price targets."); *id.* ¶ 28 (describing one instance in which, as part of "marketing efforts," Morgan Stanley provided a potential banking client with a draft research report and the analyst advised the potential client that, if coverage were initiated at that time, the analyst tentatively would issue a "strong buy" up to a certain valuation); SEC Lehman Compl., *supra* note 248, ¶¶ 77-79 (alleging that a pitchbook included a mock research report with a graphic of the report's cover page showing a 1-Buy rating; but after Lehman won a spot on the deal and by the time he could publish a report, the analyst was worried because the stock had already gone up; after the analyst emailed the Director of U.S. Equity Research on June 28, 2000, that "given the current expectations, the shares could sell off after the quarter is reported in July and could easily drop to \$20 [and that the bankers are not really satisfied with a 2," the analyst initiated coverage on June 30 with a "1-Buy" rating and a price target of \$36; the stock, which closed at \$28.50 on the day of the report, sank to \$22 by the end of July); SEC Piper Compl., *supra* note 249, ¶ 28 (asserting that a mock research report used in an August 2000 pitch noted in several places a proposed rating of 'Strong Buy' and called the company's initial sales "nothing short of breathtaking"; Piper Jaffray won the role of lead managing underwriter, which generated underwriting fees of \$3,785,512 for the firm when the offering went effective in October 2001; Piper initiated coverage of the issuer with a "Strong Buy" recommendation shortly after the offering); Landon Thomas, Jr., *Who Wins from an Analyst's Rich Deal*, N.Y. TIMES (Late ed.), Apr. 8, 2003, at C1, C9 (reporting that those who had worked with a prominent investment banker specializing in the health care industry said that the banker had sometimes presented mock research reports with "Buy" ratings to companies that he wanted to take public).

²⁶⁶ NY Morgan Stanley AOD, *supra* note 247, ¶ 14 ("Between 1999 and 2001, as part of the package of services it offered . . . to win investment banking business from certain issuers, Morgan Stanley typically committed that its analysts would initiate (or continue) research coverage of the issuer if Morgan Stanley won the banking competition."); *id.* ¶ 17 (specific examples). Sometimes, a Morgan Stanley analyst would decline to commence coverage precisely because the issuer was not providing investment banking business. *Id.* ¶ 27 ("One senior analyst wrote in a 2000 self-evaluation that the analyst had declined [one company's] requests for research coverage for four years and that the analyst had 'insisted that we first be mandated on a large investment banking transaction.' . . . When [that company] provided Morgan Stanley with banking business . . . the analyst initiated coverage . . . with an Outperform rating . . .").

The regulators charged that other firms also allocated research resources in ways designed to enhance investment banking revenues. NY Salomon AOD, *supra* note 245, ¶ 15 ("Investment banking concerns sometimes affected research analysts' decisions to initiate coverage, rate companies, and drop coverage. SSB's research analysts were generally expected to initiate coverage of SSB's investment banking clients with

business sometimes worked directly against lower ratings for covered companies.²⁶⁷

An analyst's contribution to investment banking often directly affected the analyst's evaluation and compensation.²⁶⁸ The overall profitability of the

favorable ratings."); SEC Bear Stearns Compl., *supra* note 244, ¶ 41 (alleging that firm "generally initiated coverage on companies that engaged Bear Stearns in an IB transaction"); *id.* ¶ 48 (quoting an email from an investment banking group head that said the analyst and banker working with an issuer should "stress to the company that if we initiate coverage we expect our position in the company's future financing and strategy actions to be materially improved"); *id.* ¶ 53 (alleging that a supervisory analyst at Bear Stearns told others that investment banking had to approve before research coverage could be dropped); SEC Lehman Compl., *supra* note 248, ¶ 61 ("[I]n February 2000, the Director of U.S. Equity Research advised a Lehman employee in an email: 'the proper process is to introduce the principals to someone in investment banking. If we have the resources and there appears to be significant revenue potential, banking will request research.'"); *id.* ¶ 63 (asserting that an analyst initiated coverage of a company he acknowledged to be of "little interest to our US institutional salesforce," saying: "The reason for coverage is there is a potential banking deal (big \$\$\$) we're trying to get later this year."); SEC Warburg Compl., *supra* note 261, ¶¶ 50–51 (alleging that a lead investment banker in the technology group said that clients "generally expect an IPO fee to justify coverage for three years," and, when one analyst informed his banking counterpart that he wanted to drop coverage of four biotechnology companies, an investment banking manager emailed the analyst, saying that he wanted "to have the opportunity to discuss future potential revenue opportunities from these clients" before coverage ended); SEC J.P. Morgan Compl., *supra* note 264, ¶ 45 (Director of U.S. Equity Research allegedly distributed by email a memorandum saying that "[o]ne of the important duties of the Director of Research is to work closely with Investment Banking to ensure that research resources are appropriately aligned with identified investment banking opportunities"); *id.* ¶¶ 51, 58–59 (providing additional detailed allegations of how investment banking considerations may have influenced research coverage).

²⁶⁷ After Jack Grubman evidenced an inclination to downgrade six stocks because they "must not remain buys," the head of SSB's investment banking allegedly told Grubman not to do so because downgrades would anger the companies and hurt investment banking business. Salomon did not downgrade the stocks for months, and analyst Grubman observed along the way that "[i]f anything the record shows we support our banking clients too well and for too long" and lamented that "most of our banking clients are going to zero and you know I wanted to downgrade them months ago but got huge pushback from banking." NY Salomon AOD, *supra* note 245, ¶¶ 41–43, 47–48.

Regulator complaints charged that bankers exerted similar pressures at other firms. SEC Lehman Compl., *supra* note 248, ¶¶ 68–75 (describing an analyst's efforts to lower projections and reduce the price target for RSL Communications and successful resistance by the firm's investment bankers); SEC Warburg Compl., *supra* note 261, ¶ 69 ("[A] member of Equity Sales Management, sent an e-mail to one of UBS Warburg's telecom analysts stating 'The salesforce is extremely frustrated with your research, price targets, ratings They feel that you're being somewhat flippant and not taking responsibility for your recommendations and for having lost hundreds of millions of dollars for people.' The analyst responded, that he would never utilize a Hold rating on a stock unless one of two conditions occurred: '1) if I believe the company is about to go bankrupt; 2) if there is no investment banking business to be had there.'").

²⁶⁸ Regulators alleged that each Morgan Stanley analyst's ranking in nine weighted categories contributed to recommended compensation in 1999 and 2000, with one category being the amount of investment banking revenue attributed to the analyst and that category being the most heavily weighted (carrying a full one-third of the weight for all categories). Thus, the analyst with the highest ranking in that single category was the highest paid Morgan Stanley analyst in 1999. The same analyst received the highest pay again in 2000 (with an \$8.7 million increase over 1999) when the analyst was again ranked highest in investment banking revenue even though that analyst was ranked seventieth out of 111 analysts in stock

picking and had suffered (according to the analyst's self-evaluation) the analyst's worst stock-picking year in fifteen years. NY Morgan Stanley AOD, *supra* note 247, ¶¶ 44–47.

Regulators charged that other firms also kept track of investment banking revenues that analysts helped to land and often compensated analysts based on those amounts. SEC Bear Stearns Compl., *supra* note 244, ¶ 29 (alleging that the head of research told analysts that “being a partner with banking is part of the analyst job description” and that “[w]orking on transactions is not incremental to your compensation, it is an expected part of it”); *id.* ¶ 33 (charging that analysts were sometimes “requested to inform research management of fees generated by the [investment banking] transactions on which they worked”); *id.* ¶ 34 (asserting that the Head of Research praised an analyst for including, in a list of fiscal year 2000 accomplishments, a spreadsheet showing revenue to the firm from investment banking deals on which the analyst worked); SEC Lehman Compl., *supra* note 248, ¶¶ 22–24 (quoting an August 1999 memo from the Managing Director of Lehman Brothers Global Equity Research that said “the analyst is THE key driver of the firm relationship with its corporate client base” and that “to ensure we have proper recognition of analysts’ impact on banking, we have to closely track every dollar of [investment banking division] revenue (equity, M&A, and debt) by analyst.”); *id.* ¶¶ 25–28 (quoting a September 1999 document that said Lehman analysts would be evaluated on, among other things, “the extent to which the analyst places origination as [a] priority” and “adds value in building banking business,” and the analyst’s “effectiveness in [the] pitching process;” and adding that analyst compensation would be “impacted by contribution to banking” and “reviewed with the appropriate banking group heads”); *id.* ¶¶ 35–38, 40, 42 (describing consideration of investment banking in compensation of Lehman analysts, including instances in which the amount of money paid was directly linked to investment banking revenues generated by companies that analysts covered and companies whose business the analysts helped to win); SEC Warburg Compl., *supra* note 261, ¶¶ 33–43 (alleging that six PaineWebber analysts were guaranteed “investment banking bonuses,” with two promised compensation equal to 15% of the underwriting fees earned in their respective sectors; while UBS Warburg removed that direct link when it purchased PaineWebber in November 2000, Warburg performance evaluations considered analyst contributions to investment banking); SEC Merrill Compl., *supra* note 255, ¶ 35 (“In November 2000, Merrill Lynch’s research management requested that all equity analysts submit a report detailing their contributions to investment banking during the year and highlighting instances where their research coverage played a role in originating and securing an underwriting mandate or advisory work on mergers and acquisitions. [Internet analyst Henry] Blodget’s [email response] estimated that, from December 1999 to November 2000, the Internet research group was involved in activities relating to investment banking deals that produced approximately \$115 million of revenue for Merrill Lynch.”); SEC Piper Compl., *supra* note 249, ¶¶ 31–32 (alleging that Piper Jaffray had written agreements with at least sixteen analysts to pay them a percentage of revenues from investment banking business generated by the companies they covered); *id.* ¶ 32 (charging that bonuses given to other Piper analysts were partly dependent on their contribution to investment banking business); SEC Credit Suisse Compl., *supra* note 253, ¶¶ 20–21 (asserting that nontechnology analysts at Credit Suisse First Boston received up to 3% of the net revenues generated by specific banking deals, with the amount determined by the analyst’s contribution as decided with input from investment bankers and a cap of \$250,000 per deal); *id.* ¶ 24 (alleging that analysts in CSFB’s Technology Group received salaries plus much larger bonuses, with revenues generated by the companies an analyst covered, including banking revenues, factored into the amount of the bonus); SEC J.P. Morgan Compl., *supra* note 264, ¶¶ 37–41 (asserting that the Head of Research in certain cases gathered information on banking contributions in preparing overall evaluations and considered those contributions as one factor in determining analyst bonuses); *id.* ¶ 38 (detailing an instance in which the Head of Research complimented an analyst for “enormous” contribution to “corporate underwriting business”); SEC Goldman Compl., *supra* note 246, ¶ 26 (alleging that Goldman analysts were told in 2000 that the “performance review process included ‘Formal Investment Banking Division recognition of Research contribution to business we win and relationships we improve’”).

investment banking business at the analyst's firm also affected how much he or she was paid.²⁶⁹ And investment bankers evaluated the analysts.²⁷⁰

Repeatedly, investment bankers and the analysts themselves described the analyst's role as "supporting" a covered company or used words suggesting some similar office.²⁷¹ Aside from the allegations made by the regulators,

²⁶⁹ NY Morgan Stanley AOD, *supra* note 247, ¶ 36 ("The total compensation paid to analysts was based in part on Morgan Stanley's total revenues for a particular year, including the investment banking fees that Morgan Stanley received. Thus, the success or failure of the investment banking division determined, in part, the total amount of funds available to pay employee compensation in any given year, including analyst compensation.").

²⁷⁰ At Salomon Smith Barney "[i]nvestment bankers reviewed the performance of the principal research analysts in their sector as part of the analysts' annual review." NY Salomon AOD, *supra* note 245, ¶ 15. Those reviews, together with the hard banking dollars analysts brought in, evidently affected analyst pay, as the regulators charged: During 1999, the telecommunications companies that Jack Grubman covered brought in some \$359 million in gross investment banking fees to Salomon Smith Barney; in 2000, \$331 million; and in 2001, \$101 million. *Id.* ¶ 32. In 2000, the investment bankers' ratings put Grubman at the top of all Salomon analysts, while they put him twenty-third out of ninety-eight in 2001. *Id.* ¶ 34. Salomon paid Grubman (including deferred compensation) over \$22 million in 1999; over \$20.2 million in 2000; and over \$6.5 million in 2001. *Id.* ¶ 33.

Bankers also evaluated analysts at other firms. See SEC Lehman Compl., *supra* note 248, ¶ 45 ("Investment bankers participated in analyst evaluations by providing written comments on a form titled 'Year End Performance Review for Analysts (to be completed by Bankers)' to the heads of Research. Bankers were asked to evaluate [among other things]: Whether the analyst places origination as a priority [and t]he analyst's effectiveness in the pitching process . . ."); SEC J.P. Morgan Compl., *supra* note 264, ¶ 32 ("In some circumstances, research analysts requested that individual investment bankers complete a written 'team review' of the analyst, which was then submitted to the Head of Research."); see also NY Morgan Stanley AOD, *supra* note 247, ¶ 42 ("[I]nvestment bankers submitted written opinions of analysts with whom they worked."); SEC Piper Compl., *supra* note 249, ¶¶ 35–36 (describing "Banker Peer Review" submitted for certain analysts in 2000 and 2001); SEC Credit Suisse Compl., *supra* note 253, ¶ 26 ("From July 1998 through 2001, investment bankers who worked with equity research analysts on investment banking deals . . . participated in the analysts' annual performance evaluations, which in turn affected analysts' bonuses.").

²⁷¹ NY Morgan Stanley AOD, *supra* note 247, ¶ 16 (alleging that a 1999 pitchbook "referred to two senior analysts as a 'dream team' who would 'articulate' [the issuer's] story to investors in a way that no other investment bank can match"); *id.* ¶ 20 (an email to the same company (which had identified research coverage as a key factor in its selection of a book-running manager) referred to "enthusiastic sponsorship" by the two analysts); *id.* ¶ 18 (a second pitchbook, for another deal, "described the analyst as the 'voice of the issuing company,' who would work 'in tandem' with [the issuer's] management to position its story with investors"); *id.* ¶ 19 (a third pitchbook described how the "support" by one of its analysts had improved the performance of other companies' stock in the same sector as the issuer); NY Salomon AOD, *supra* note 245, ¶ 43 (alleging that Grubman once said that "[i]f anything the record shows we support our banking clients too well and for too long"); SEC Lehman Compl., *supra* note 248, ¶ 56 (referencing a pitchbook that said "'Lehman's Equity Analysts . . . have been strong supporters of the [issuer's] stock,' adding that since the analysts published their research report the stock had increased twenty percent"); SEC Piper Compl., *supra* note 249, ¶¶ 20, 22 (alleging that a "Lead Manager Protocol" at Piper Jaffray in August 2000 said that, once Piper won a lead role in an IPO, the "[s]enior analyst will coordinate with Capital Markets [institutional sales and trading] to communicate a consistent message regarding the progress of the transaction, acting as a supporter of Capital Markets' message and not as an independent filter . . ."); *id.* ¶ 24 (saying that an analyst wrote to a potential banking client, in a "final appeal to be a part of the underwriting team," that "it is less important to have [a]

some scholarly work (albeit further removed in time from The Bubble years) suggests that analysts have been biased in favor of investment banking clients.²⁷²

5. *A Host of Other Factors That May Have Influenced Analysts in Favor of "Buy" Recommendations*

Aside from investment bankers, the covered companies themselves reportedly pressured analysts to write favorable reports and recommend the companies' stocks.²⁷³ They linked investment banking business to analyst reports.²⁷⁴

bulge bracket firm as a hood ornament than it is to have a quality analyst who will provide you with the support and coverage your company needs"); SEC Credit Suisse Compl., *supra* note 253, ¶ 32 (alleging that a pitchbook "stated that the particular . . . analyst who would cover the company '[g]ets it,' would 'pound the table' for the company, and would be the company's 'strongest advocate'"); *id.* ¶ 23 (charging that one analyst was praised by an investment banker as "a supporter of [an investment banking client's] stock despite [the] difficult Internet environment"); *id.* ¶ 34 (pitchbook allegedly highlighted CSFB analysts as having maintained a "strong buy" rating on a company whose IPO CSFB led even though the company announced results below estimates and other analysts lowered their ratings); SEC J.P. Morgan Stanley Compl., *supra* note 264, ¶ 53 (quoting a November 2, 2000 analyst email that said "[w]e picked up coverage [of one company as part of an unsuccessful attempt to win banking business] when they needed us most at the bottom of the semiconductor cycle and supported the stock enormously").

²⁷² One study of analyst recommendations for companies conducting IPOs in 1990 and 1991, found that (1) in the month after the quiet period (ending twenty-five days after the offering), analysts affiliated with lead underwriters issued 50% more buy recommendations on the companies than analysts from other brokerage firms; (2) stock prices of firms recommended by analysts for lead underwriters fell on average in the thirty days before the buy recommendations, while the prices of those recommended by other analysts rose; and (3) the mean (median) two-year buy-and-hold, size-adjusted excess return for IPO stocks recommended for purchase only by analysts for lead underwriters was -18.1% (-51.9%) while the mean (median) excess return for IPO stocks recommended only by analysts not affiliated with leads was +45% (+23.1%). Roni Michaely & Kent L. Womack, *Conflict of Interest and the Credibility of Underwriter Analyst Recommendations*, 12 REV. FIN. STUD. 653, 657, 674-76 (1999).

²⁷³ SEC Bear Stearns Compl., *supra* note 244, ¶ 65 (noting one analyst's November 2000 comments in the section of a self-evaluation identifying areas in which the analyst might improve: "We want our banking clients to know that our research is objective and independent but always sensitive to their best interests. There have been instances in my career where certain banking clients felt that our research and public comments weren't sensitive to their interests. This is a very important issue for us and we take it most seriously. We will continue to make every effort to be sensitive to our clients and our banking partners.").

The practice many analysts followed of giving notice to covered companies before publishing a rating change facilitated pressure by the companies on the analysts. For example, Acting Chairwoman Laura Unger testified that, when the SEC examined nine broker-dealer firms in 1999 and 2000 (selected because they underwrote significant numbers of IPOs, particularly Internet and technology-related IPOs), six out of the nine firms "stated that at times analysts provide investment bankers and client management with advance notice of a pending change in the analyst's recommendations." *Analyzing the Analysts: Hearing Before the Subcomm. on Capital Markets, Insurance and Government Sponsored Enterprises of the House Comm. on Financial Services*, 107th Cong. 232-33 (2001) [hereinafter Unger Analyst House Testimony]; *id.* at 71, 73, 231 (describing the examinations).

They simply cut off contact with analysts who were unfavorable, or threatened to do so.²⁷⁵

See also SEC Merrill Compl., *supra* note 255, ¶ 37–38 (alleging an instance in which investment bankers argued against an analyst's proposed downgrade and urged a meeting with the issuer's management, at which the management also argued against the downgrade; the analyst then maintained a 1-1 rating on the stock); SEC Credit Suisse Compl., *supra* note 253, ¶¶ 43–45 (alleging that an analyst reinitiating coverage on a company in October and November 1999 wrote the company's CEO, asking for the CEO's opinion on whether the rating should be a "strong buy," or whether it would "make sense for us to now keep the upgrade in our back pocket in case we need it"; the CEO supposedly responded that "we should reinitiate with a buy and a higher price target and keep the upgrade for a little while"; but the analyst reinitiated with a strong buy nevertheless).

When analysts failed to provide companies with prepublication warnings of negative reports, companies sometimes complained. A banking client allegedly contacted Goldman after a report included negative comments about the client's industry sector, asking: "Are you trying to kill our offering? Or just issuing these reports blindly with no regard to consequences"—prompting the Goldman analysts, and the relevant bankers, to apologize to the company for not providing advance warning of the report and the senior analyst to express contrition to the company's management for "not giving you a heads up on these calls." SEC Goldman Compl., *supra* note 246, ¶ 56.

Company comments, at least as the regulators alleged, sometimes influenced analyst reports in a very direct way. One company's protests against inclusion of funding issues in a forthcoming report apparently succeeded in reducing the prominence of that discussion in a Goldman report. *Id.* ¶ 57. Officials at a second company supposedly provided "extensive comments" on a draft report, which prompted the analyst to advise her supervisor that the analyst had told the company that Goldman had "slightly smoothed the negative edge" and would send the company a final report so that the company could see the changes. *Id.* ¶ 58.

²⁷⁴ An April 1998 internal Merrill Lynch memo by two investment bankers to the firm's president said that Enron's CFO Andrew Fastow had called to say that Merrill would not be included in a contemplated \$750 million common stock underwriting because of Enron's dissatisfaction with research coverage provided by Merrill analyst John Olson. *The Role of the Financial Institutions in Enron's Collapse—Hearing Before the Subcomm. of Investigations of the Sen. Comm. on Governmental Affairs*, 107th Cong. 2206–07 (2002). Olson rated Enron "neutral" from at least July 1997 through August 1998, when he left Merrill Lynch. *Id.* at 176 (testimony of G. Kelly Martin, a senior vice president at Merrill). Martin also testified that, as a result of the April 1998 memo, a call was made (apparently by Merrill's president) to Enron and that Merrill eventually participated in the stock offering as a comanager. *Id.* at 176, 208. Another internal Merrill memo said, in January 1999, that the "responsive message" in the call "was appreciated" by Enron, that "any animosity" over the research relationship "seems to have dissipated" and that "[t]o that end," Merrill had been awarded spots in two Enron offerings that should bring in \$45–50 million in fees. *Id.* at 209.

Handwritten notes of the Qwest CFO from the summer of 2001 show that, after Morgan Stanley published an uncomplimentary analysis of that company, a discussion of senior executives led to a "strategy to handle this issue" that included "quietly clos[ing] Morgan Stanley out of co[mpany]" with a specific reference to "[investment banking] opportunities." While the CFO testified that she did not have the authority to freeze out Morgan Stanley, "Morgan Stanley was no longer employed after the [analyst's] notes came out by [Qwest] to do significant banking transactions." *Capacity Swaps by Global Crossing and Qwest: Sham Transactions Designed to Boost Revenues?: Hearing Before the Subcomm. on Oversight and Investigations of the House Comm. On Energy and Commerce*, 107th Cong. 20 (2002) (identifying witness); *id.* at 34 (witness testimony on notes); *id.* at 347–50 (handwritten notes); *id.* at 355–64 (the apparently offending Morgan Stanley report).

²⁷⁵ Gretchen Morgenson, *An Analyst Lowers a Rating and a Company Clams Up*, N.Y. TIMES (Late ed.), Oct. 20, 2002, § 3, at 1 (writing that, after an analyst lowered a rating from outperform to neutral, the issuer canceled a meeting with the analyst's fund manager clients and one of the analyst's colleagues in institutional sales; the issuer's investor relations chief reportedly indicated to the analyst that the company did not

Reports and allegations suggested that analysts became too close to the companies that they covered. Analysts participated in "roadshows" that took place before registration statements become effective and were a primary means of selling a new offering.²⁷⁶ Some analysts made recommendations to the companies they covered. For example, Jack Grubman attended WorldCom board meetings²⁷⁷ and even suggested how the CEO should handle a

accommodate analysts who did not rate the company a buy or outperform); Gretchen Morgenson, *Accord Highlights Wall St. Failures*, N.Y. TIMES (Late ed.), Dec. 20, 2002, at C1, C5 (quoting a former Merrill analyst as saying that "[t]he most critical conflict a research analyst has is not wanting people to be mad at you. If you put a negative rating on a company, its executives will not return your phone call.").

²⁷⁶ Section 5(a) of the Securities Act prohibits the sale of a security (not encompassed in the Act's exemptions) until a registration statement for that sale is effective. 15 U.S.C. § 77e(a) (2000). But after the issuer files the registration statement and before it becomes effective, underwriters and issuers often go on "roadshows," which are meetings with large potential investors such as institutions. The presentations at such events may be justified on the theory that the only offer being made is an oral one permitted at this point in the registration process by § 5(b) of the Securities Act. LOSS & SELIGMAN, *supra* note 181, at 109–10; *see also* 1 HAZEN, *supra* note 37, § 2.4[2][A], at 201–02.

Analysts at many firms participated in roadshows. *See* NY Salomon AOD, *supra* note 245, ¶ 30 ("Once he determined he could support a proposed transaction, [Grubman] and other telecom analysts who reported to him often participated in . . . roadshows that marketed offerings to investors."); SEC Warburg Compl., *supra* note 261, ¶¶ 27–28 (asserting that some Warburg analysts participated in roadshows and arranged meetings between issuers' executives and managers of institutional clients); SEC Merrill Compl., *supra* note 255, ¶ 21 (alleging that Merrill's Internet sector analysts sometimes attended roadshows); SEC Piper Compl., *supra* note 249, ¶¶ 20–21 (pleading that the "Lead Manager Protocol" drafted by the head of the syndicate department in August 2000 called for research and sales to "set up a roadshow schedule to ensure a targeted and efficient roadshow," for senior analysts to "provide aggressive pre-meeting preparation and post-meeting follow-up on each 1-on-1 appointment," and for senior analysts to be "available during critical parts of roadshow"); *id.* ¶ 29 ("Investment bankers, research analysts and company representatives generally traveled to the offices of institutional investor clients, to meet with them and describe the offering and determine their interest in purchasing the stock. At times, research analysts attended and provided significant assistance at these 'roadshow' meetings."); SEC Credit Suisse Compl., *supra* note 253, ¶¶ 32, 33 (asserting pitchbook passages said that an analyst would engage in "pre-marketing one-on-one meetings [with potential investors] prior to launch," and that the research department's role would include "active involvement on roadshow"); SEC J.P. Morgan Compl., *supra* note 264, ¶¶ 18–19 (alleging that certain analysts played a role in roadshows).

²⁷⁷ The examiner appointed by the Bankruptcy Court in the WorldCom case found

at least four instances in which Mr. Grubman attended WorldCom Board meetings to discuss major transactions, such as the proposed merger between WorldCom and MCI in late 1997 and the proposed merger between WorldCom and Sprint in October 1999. Minutes from these meetings indicate that Mr. Grubman and other SSB representatives were invited to make extensive presentations to the Board analyzing the financial impacts of these mergers on WorldCom's operations as well as other transactions involving the merger parties.

These minutes indicate that Mr. Grubman attended the Board meetings as a "financial advisor" to the Company and performed roles that seemed inconsistent with that of an independent securities analyst. For example, the minutes of the October 4, 1999 Board meeting, when WorldCom was considering its merger with Sprint, indicate that Mr. Grubman described the possible impact of that merger on WorldCom's growth metrics and pro forma earnings.

conference call in which the CEO would address questions from other analysts.²⁷⁸ Pushing to one side the criticism that such involvement with companies that he covered created conflicts of interest and robbed him of objectivity, Grubman notoriously proclaimed, "Objective? The other word for it is uninformed."²⁷⁹ Grubman and other analysts sometimes formulated "softball" questions for company-to-analyst conference calls, giving issuers a chance to look better in front of that portion of the investment community that participated in the calls.²⁸⁰ Being in all these different ways so involved with covered companies and those companies' efforts to succeed, the analysts may have found it easy to say "buy," and hard to say "sell," in their research reports.

Moreover, some investment banking firms allegedly paid others to produce research on banking clients, without disclosing the payments to the readers of the resulting research reports.²⁸¹ Some analysts allegedly owned stock in the

First WorldCom Examiner Report, *supra* note 250, at 98.

WorldCom's boardroom was not the only one Mr. Grubman reportedly graced. Patrick McGeehan, *Grubman Attended 10 Board Meetings*, N.Y. TIMES (Late ed.), Aug. 10, 2002, at C2 (reporting that a letter from Salomon said that Grubman participated in the board meetings of five other companies, including a Global Crossing meeting to discuss the planned acquisition of Frontier Corporation and a Cincinnati Bell meeting to discuss that company buying IXC). Grubman also reportedly helped recruit Qwest's chief executive in 1997. Steven Rosenbush et al., *Inside the Telecom Game*, BUS. WK., Aug. 5, 2002, at 34.

²⁷⁸ First WorldCom Examiner Report, *supra* note 250, at 98 ("[T]here is evidence that Mr. Grubman consulted with WorldCom's management in advance of analyst calls to suggest how they should handle certain topics during those calls . . ."); Gretchen Morgenson, *Analyst Coached WorldCom Chief on His Script*, N.Y. TIMES (Late ed.), Feb. 27, 2003, at A1.

Grubman was not the only analyst to advise covered companies on their communications with the investment community and their businesses. Mary Meeker, the Morgan Stanley analyst coronated by *Barron's* as "Queen of the Net," reportedly coached Priceline.com presenters for pre-IPO appearances and was said by eBay's chief executive to have been a "terrific adviser in many ways" who had "great ideas for the company." CASSIDY, *supra* note 134, at 2, 215.

²⁷⁹ Peter Elstrom, *The Power Broker*, BUS. WK., May 15, 2000, 70, at 74. The article opens by reporting that SBC Communications asked Grubman to attend a corporate meeting considering whether SBC should buy Ameritech. *Id.* at 70. It quotes Grubman as saying, "I'm sculpting the industry . . . I get feedback from institutions and CEOs. It feeds on itself. It's a virtuous circle." *Id.* at 72. And, "What used to be a conflict is now a synergy . . . Someone like me who is banking-intensive would have been looked at disdainfully by the buy side 15 years ago. Now they know that I'm in the flow of what's going on." *Id.* at 74.

²⁸⁰ First WorldCom Examiner Report, *supra* note 250, at 98 (referring to "evidence that Mr. Grubman even suggested a question he might ask during an analyst conference call that might elicit a favorable response"); SEC Bear Stearns Compl., *supra* note 244, ¶ 69 ("Bear Stearns lead managed the IPO and secondary offerings for SonicWall in November 1999 and March 2000 . . . An analyst rated the stock a 'Buy' from the IPO until April 2002. [On] January 25, 2001 while they were participating in a SonicWall conference call the analyst stated to his associate: 'I am trying to make them look good . . . on the [days sales outstanding] and the growth etc.'").

²⁸¹ For example, regulators charged that, as part of an offering, Bear Stearns paid \$102,750 to another broker-dealer for research on the issuer but "did not take steps to ensure that this broker-dealer disclosed in its

companies they covered but did not specifically disclose that fact.²⁸² Analysts whose firms were paid to cover companies may have understood that they were to provide favorable coverage. Analysts who owned stock in companies on which they reported had a very personal interest in presenting the companies in a way that would send the companies' stock prices higher.

Still other factors may have inflated analyst ratings. Institutional clients providing brokerage business to the analysts' firms opposed rating downgrades that could leave the institutions holding lower-priced shares.²⁸³ In one case, an

research reports that it had been paid to issue research on [the company] . . . [and] did not disclose or cause to be disclosed the details of this payment." SEC Bear Stearns Compl., *supra* note 244, ¶¶ 73–74. Regulators alleged that Warburg received \$100,000 as a "special research check" in connection with one offering and \$113,000 as "guaranteed economics for research" in connection with another offering without disclosing these payments in research reports on either issuer. SEC Warburg Compl., *supra* note 261, ¶¶ 93–94. The SEC asserted that, in two other underwriting transactions, Warburg made payments of \$150,000 and \$283,000, respectively, for research to be performed by other broker-dealers on two of Warburg's investment banking clients, without taking steps to ensure that those broker-dealers made appropriate disclosures of those payments and without making such disclosure itself. *Id.* ¶¶ 95–96. The SEC similarly contended that:

From 1999 through 2001, Piper Jaffray received payments out of the proceeds of certain underwritings to compensate the firm for services that included publishing research on the issuer. These payments were made in the form of "research guarantees" or "research checks." During this period, Piper Jaffray accepted more than \$1.8 million in exchange for, among other services, issuing research reports. Despite having an obligation to do so, the firm failed to disclose in research reports or elsewhere that it received the payments, in part, as compensation for issuing the reports.

SEC Piper Compl., *supra* note 249, ¶ 52; *id.* ¶¶ 53–55 (citing examples); *id.* ¶¶ 56–58 (alleging payments by Piper to other brokerage firms to initiate or continue coverage of companies for whose offerings Piper was a lead or comanager); *see also* SEC J.P. Morgan Compl., *supra* note 264, ¶¶ 76–77 (alleging payments for research that were not disclosed as such).

²⁸² CSFB took NPW public with an IPO in October 2000 and from that time to November 2001 issued eighteen research reports on the company with "buy" or "strong buy" recommendations. The SEC charged that:

The senior analyst invested approximately \$21,000 of his own money, which was leveraged 5:1 by CSFB, in NPW through DLJ partnerships that owned NPW shares. In addition, an associate research analyst who assisted in preparing the reports, and whose name appeared on the reports, held 200 shares of NPW from November 7, 2000 to June 14, 2001. From October 2000 to November 2001, CSFB did not disclose either of the research analysts' financial interests in the 18 NPW research reports . . .

SEC Credit Suisse Compl., *supra* note 253, ¶¶ 78–80.

One particular fact pattern found analysts making pre-IPO investments in companies that they covered after the public offerings later occurred. *See* Unger Analyst House Testimony, *supra* note 273, at 233 ("The staff found [in examinations of a number of nine full-service broker-dealers in 1999 and 2000] that 16 of 57 analysts reviewed had made pre-IPO investments in a company they later covered. Subsequently, the analysts' firms took the company public and the analyst initiated research coverage with a 'buy' recommendation.").

²⁸³ A March 30, 2001, email from a director who provided research management support explained why Salomon never used 4 (underperform) or 5 (sell) ratings in part by observing that "[i]f we were to use 4 or 5

analyst may even have raised a rating as part of an effort to gain admission for the analyst's children into an exclusive preschool.²⁸⁴

6. *Multiple Regulators Conducted a Massive Investigation of Analyst Bias, Which Led to a \$1.4 Billion Settlement by Major Brokerage Houses and Institutionalized Changes To Curtail Bias*

Most of the recent information about investment banking's influence on sell-side research derives from the investigation into conflicts between investment banking and research that the New York Attorney General started and that other regulatory agencies then joined.²⁸⁵ That investigation

ratings that approach would be perceived as highly antagonistic to buy side accounts" NY Salomon AOD, *supra* note 245, ¶ 23.

As SEC Acting Chairwoman Unger testified: "It's not just the investment banking client that applies the pressure . . . it's also the institutional investors who don't want their investments downgraded." Unger Analyst House Testimony, *supra* note 273, at 84; *id.* at 239-40 ("Institutional investors, such as mutual funds, that are clients of the analyst's firm may have a significant position in the security of a company covered by an analyst. An analyst may be inhibited from issuing a rating downgrade that would adversely affect the performance of an institutional client's portfolio for fear that the client would take its brokerage business elsewhere.").

²⁸⁴ Here are the bare-boned allegations: From 1995 through November 1999, Jack Grubman rated AT&T stock "neutral." In late 1998 or early 1999, Sanford I. Weill (who was the chairman of Citigroup, which was Salomon's parent) asked Grubman to "take a fresh look" at AT&T. In late October 1999, Grubman told Weill that he (Grubman) was trying to get his twin girls into the 92nd Street Y preschool. On November 5, Grubman sent a memo to Weill entitled "AT&T and 92nd Street Y" in which Grubman reported on his AT&T review and sought Weill's assistance in getting the twins into the preschool. On November 30, Grubman issued a research report that upgraded AT&T to "buy." Within three months, Salomon was named as one of the three book-running managers for the AT&T Wireless IPO, which was the largest equity offering in the country's history and which brought \$63 million in fees to Salomon. Meanwhile, Weill had called a member of the Y's board in mid-December 17, 1999, and told her that he would be "very appreciative" if she could help Grubman gain admission for his children. In March 2000, the Y preschool program admitted the Grubman twins. Citigroup subsequently approved a \$1 million contribution to the Y. In May 2000, Grubman lowered his price target for AT&T. In October he downgraded the stock to "outperform" and then to "neutral." In mid-January 2001, Grubman emailed a friend, saying that "everyone thinks I upgraded [AT&T] to get lead for [the wireless offering.]. Nope. I used Sandy [Weill] to get my kids in 92nd St. Y pre-school (which is harder than Harvard)" He sent a second email in which he said that he "always viewed [AT&T] as a business deal between me and Sandy." NY Salomon AOD, *supra* note 245, ¶¶ 89-115.

The truth may never be known. When the explanation to his friend became public, Grubman said that he had told a tale to his acquaintance, "nothing more than an extended invented story." Gretchen Morgenson & Patrick McGeehan, *Wall St. and the Nursery School: A New York Story*, N.Y. TIMES (Late ed.), Nov. 14, 2002, at A1. And Salomon had enjoyed investment banking fees from AT&T even before Grubman raised his rating, and after he lowered it again. Seth Schiesel & Gretchen Morgenson, *AT&T Is Asked for Information on Dealings with Salomon*, N.Y. TIMES (Late ed.), Aug. 24, 2002, at C1, C4.

²⁸⁵ In June 2001, the New York Attorney General's office began an investigation into stock recommendations by research analysts, which involved collecting and reviewing thousands of documents—including email messages. NY Merrill Aff., *supra* note 259, at 2. On April 8, 2002, the Attorney General filed an action against Merrill Lynch in New York state court pursuant to that state's Martin Act and obtained a court order which, among other things, temporarily enjoined Merrill from issuing research reports or ratings

without specifically disclosing investment banking relationships between Merrill and covered companies. Order Pursuant to General Business Law Section 354, at 4. In the Matter of an Inquiry by Eliot Spitzer, Attorney General of the State of New York Pursuant to Article 23-A of the General Business Law of the State of New York with Regard to the Acts and Practices of Merrill Lynch & Co., Inc., (Sup. Ct. N.Y., filed Apr. 9, 2002) (Index No. 02/401522). The affidavit that the New York Attorney General filed to support the application for the order included detailed evidence suggesting that research was tainted by investment banking considerations. NY Merrill Aff., *supra* note 259. On May 21, 2002, the Attorney General signed an agreement with Merrill under which that firm agreed to pay \$100 million to settle the case and further agreed to make additional disclosures of investment banking relationships with companies covered in research reports and to take a raft of internal steps to decrease investment banking influence over research. Agreement Between the Attorney General of the State of New York and Merrill Lynch, Fenner & Smith (May 21, 2002), available at http://www.oag.state.ny.us/investors/Merrill_agreement.pdf.

But by that time, the investigation had widened. On April 23, the New York Attorney General and the North American Securities Administrators Association ("NASAA") announced a multistate task force that would focus on Wall Street firms. Press Release, Office of New York State Attorney General Eliot Spitzer, Spitzer to Co-Chair National Task Force Investigating Securities Law Violations (Apr. 23, 2002), available at http://www.oag.state.ny.us/press/2002/apr/apr23a_02.html. And the SEC announced its own inquiry, which it said would be coordinated with state efforts as well as with investigations by the New York Stock Exchange and the NASD. Patrick McGeehan, *S.E.C. Begins Investigations Into Analysts*, N.Y. TIMES (Late ed.), Apr. 26, 2002, at C1. The press soon reported that the Commission had sent letters to about a dozen Wall Street firms asking for information on a voluntary basis. Stephen Labaton & Patrick McGeehan, *S.E.C. Queries Large Brokers On Research*, N.Y. TIMES (Late ed.), May 1, 2002, at C1. Some brokerages announced structural changes designed to address investment banking/analyst conflicts. Patrick McGeehan, *Goldman Sachs Moves To Tighten Stock Analysts' Independence*, N.Y. TIMES (Late ed.), Feb. 20, 2002, at C15; Gretchen Morgenson, *Salomon To Alter Research Unit Along Lines of Merrill Settlement*, N.Y. TIMES (Late ed.), May 23, 2002, at C1. There were reports by September that at least Salomon was trying to negotiate a settlement. Stephen Labaton & Riva Atlas, *Salomon Talks to the S.E.C. About Settling Conflict Cases*, N.Y. TIMES (Late ed.), Sept. 28, 2002, at C1.

Since the task of investigating multiple firms was so large, the NASAA parceled out the targets to different state regulators and each firm was also assigned to one of three national regulators—the SEC, the NASD, or the New York Stock Exchange. Patrick McGeehan, *States Talk Tough. Wall Street Sweats.*, N.Y. TIMES (Late ed.), Oct. 20, 2002, § 3, at 1, 12. One state—Massachusetts—even filed its own enforcement action. Patrick McGeehan & Norm Alster, *Massachusetts Charges Fraud in Complaint on First Boston*, N.Y. TIMES (Late ed.), Oct. 22, 2002, at C1; see also Patrick McGeehan, *Credit Suisse First Boston Denies Fraud Charges Made by Massachusetts*, N.Y. TIMES (Late ed.), Nov. 26, 2002, at C11 (discussing the firm's response).

By late October 2002, the press reported serious negotiations underway between the regulators and ten major Wall Street firms over organizational changes to separate analysts from banking. Bloomberg, *Regulators to Meet With Wall Street Firms*, N.Y. TIMES (Late ed.), Oct. 23, 2002, at C2. The negotiations also addressed how much each firm would pay to end the investigations and what facts the regulators would release in connection with the settlement, which would then be readily available for use in private lawsuits and customer arbitrations. Gretchen Morgenson, *Crucial Terms Unresolved in Settlement for Wall St.*, N.Y. TIMES (Late ed.), Dec. 13, 2002, at C1. By mid-December, the major firms and the regulators had agreed on the outlines of a settlement, including huge payments and structural changes. Gretchen Morgenson & Patrick McGeehan, *Wall Street Firms Are Ready To Pay \$1 Billion in Fines*, N.Y. TIMES (Late ed.), Dec. 20, 2002, at A1. For an interesting chronicle of the final negotiations leading to this general agreement, see Alex Berenson & Andrew Ross Sorkin, *How Wall Street Was Tamed*, N.Y. TIMES (Late ed.), Dec. 22, 2002, § 3, at 1. A somewhat helpful timeline to this point appears under the heading *How the Deal Was Won*, N.Y. TIMES (Late ed.), Dec. 22, 2002, § 3, at 11. The regulators and banks, however, continued to argue over such matters as whether the brokerage houses could seek reimbursement for settlement payments from their insurance carriers

culminated in a settlement with the major brokerage houses in the spring of 2003. As part of the settlement, the SEC filed a series of complaints in federal court. For two brokerages, the New York Attorney General also released Assurances of Discontinuance (“AODs”). Those complaints and the AODs—which focused on events during The Bubble years—provide the fine-grained particulars set out in the footnotes to the immediately preceding sections.

a. The Settlement Between Industry and Regulators Suggests That Charges of Analyst Bias Were Not Frivolous

None of the settled regulatory actions concerning analyst research ended with litigated factual findings. The regulators’ charges remain unproven allegations (even though portions of the AODs were styled “findings”). Nevertheless, it seems likely that the facts recited in the complaints and AODs were not without basis.

First, reports said that, to some extent, the brokerage houses negotiated the statements of facts in the complaints.²⁸⁶ To that extent, the investment banking and research firms should have been able to dissuade the regulators from including in the complaints and AODs completely false, specific factual statements, although this check may not have effectively operated to reduce false conclusions. Second, the brokerages agreed as part of the settlements that, while they would be free to contest customer arbitrations and lawsuits and were not admitting the alleged facts, they would not otherwise publicly deny the allegations.²⁸⁷ It seems unlikely that the brokerages would have forgone

and write payments off on their tax returns. Landon Thomas, Jr., *Regulators Near Final Deal with Big Investment Banks*, N.Y. TIMES (Late ed.), Apr. 4, 2003, at C2.

Documents finalizing a settlement with the ten major firms that had become the center of the investigation were filed on April 28, 2003. Stephen Labaton, *10 Wall St. Firms Reach Settlement in Analyst Inquiry*, N.Y. TIMES (Late ed.), Apr. 29, 2003, at A1. Negotiations with two other investment bank/brokerages did not yield an agreement by that date. Jeff Chorney, *Settlement with Analysts Could Fuel Litigation*, RECORDER, Apr. 29, 2003, 1, at 10. Those two banks settled in August 2004. Reuters, *2 Firms Pay \$100 Million To Settle with the S.E.C.*, N.Y. TIMES (Late ed.), Aug. 27, 2004, at C5.

The United States District Court for the Southern District of New York gave final approval to the settlements with the ten firms in late October, 2003. Global Analyst Research Settlement Litigation Release, *supra* note 244. The court approved the settlements with Grubman and Blodget at the same time. *Id.*

²⁸⁶ The *New York Times* reported in December 2002 that regulators and the firms were trying “to reach agreement on two major sticking points: how much in fines each firm will pay under the settlement and which facts will be released by investigators to the public” Morgenson, *supra* note 285, at C1.

²⁸⁷ For examples of the language in which these agreements were cast, see NY Salomon AOD, *supra* note 245, at 66, stating:

public denials if specific factual allegations had been flat out wrong. Again, this factor does not suggest that factual conclusions in the complaints or AODs were correct. Third, multiple regulatory agencies cooperated in conducting the investigation and reaching the settlement—including the SEC and the North American Securities Administrators Association (“NASAA”).²⁸⁸ That multilateral effort reduces the probability that the factual statements in the complaints and AODs were crafted simply to promote a political ambition—as might have been the case if the entire effort had been kept to the New York Attorney General’s office.

Fourth, ten brokerage houses agreed in April 2003 to pay a large amount to end the investigations—a total of almost \$1.4 billion in a combination of fines, disgorgement, and funding for independent research.²⁸⁹ They also agreed to internal organizational changes, many of which were designed to reduce the influence of investment banking on research analysts.

Citigroup Global [the new name for Salomon Smith Barney] agrees not to take any action or to make or permit to be made any public statement denying, directly or indirectly, any finding in this Assurance of Discontinuance or creating the impression that this [AOD] is without factual basis. Nothing in this Paragraph affects Citigroup Global’s . . . right to take legal or factual positions in defense of litigation or in defense of other legal proceedings in which the [NY] Attorney General is not a party.

See also Consent ¶ 18, SEC v. Citigroup Global Markets Inc. F/K/A Salomon Smith Barney Inc. (S.D.N.Y., filed Apr. 28, 2003) (No. 03 CV 2945 (WHP)) (including essentially the same promise but also adding that: (1) “Defendant understands and agrees to comply with the Commission’s policy ‘not to permit a defendant . . . to consent to a judgment . . . that imposes a sanction while denying the allegation in the complaint . . .’ 17 C.F.R. § 202.5”; and (2) “If Defendant breaches this agreement [not to make a public denial], the Commission may petition the Court to vacate the Final Judgment and restore this action to its active docket.”). When the head of Morgan Stanley told a conference of institutional investors that he did not see anything in the settlement that would raise retail investor concern about Morgan, SEC Chairman Donaldson warned Morgan Stanley to honor the “no denial” clause, prompting a letter from Morgan saying that the firm would not deny the allegations. Floyd Norris, *Morgan Stanley Draws S.E.C.’s Ire*, N.Y. TIMES (Late ed.), May 2, 2003, at A1; *Excerpts from Exchange of Letters*, N.Y. TIMES (Late ed.), May 2, 2003, at C4.

²⁸⁸ See the history set out *supra* note 285.

²⁸⁹ Joint Press Release, U.S. Securities and Exchange Commission, New York Attorney General, NASD, New York Stock Exchange, & North American Securities Administrators Association, Ten of Nation’s Top Investment Firms Settle Enforcement Actions Involving Conflicts of Interest Between Research and Investment Banking (Apr. 28, 2003) (reporting that the settlement included \$487.5 million in penalties (including Merrill Lynch’s \$100 million payment in the New York state case, as discussed *supra* note 285), \$387.5 million in disgorgement, \$432.5 million to fund independent research and \$80 million for investor education), available at <http://www.sec.gov/news/press/2003-54.htm>.

Jack Grubman and Henry Blodget also agreed to make individual payments, and each also agreed to a ban from the securities industry. SEC, Litigation Release No. 18111 (Apr. 28, 2003) (Grubman), available at <http://www.sec.gov/litigation/litreleases/lr18111.htm>; SEC, Litigation Release No. 18115 (Apr. 28, 2003) (Blodget), available at <http://www.sec.gov/litigation/litreleases/lr18115.htm>.

Addenda to the consent judgments set out those structural changes.²⁹⁰ The changes included the physical separation of research from investment banking,²⁹¹ an end to investment banking input into analyst compensation decisions,²⁹² a prohibition against basing analysts' compensation directly or indirectly on investment banking revenues,²⁹³ a requirement that a "significant portion" of the compensation for "anyone principally engaged in the preparation of research reports that he or she is required to certify pursuant to Regulation AC" be "based on quantifiable measures of the quality and accuracy of the . . . analyst's research and analysis,"²⁹⁴ an end to investment banking influence over which companies analysts cover,²⁹⁵ a prohibition against taking investment banking revenues or potential revenues into account in making coverage decisions,²⁹⁶ a requirement that firms dropping coverage issue a final report "comparable to prior reports" and explaining why the coverage is ending,²⁹⁷ a prohibition against research participation in soliciting investment banking business,²⁹⁸ "firewalls" between research and investment banking prohibiting communication between the two except in specified circumstances or for specified purposes and subject to safeguards protecting analyst independence,²⁹⁹ and prohibitions against analyst participation in "roadshows."³⁰⁰ The firms also agreed to include a prominent warning on their research reports saying that they do, and seek to do, investment banking

²⁹⁰ The citations that follow are from the Addendum A to the Final Judgment as to Defendant Bear Stearns & Co. Inc., *SEC v. Bear, Stearns & Co., Inc.*, No. 03 CV 2937 (WHP) (S.D.N.Y. 2003) (dated Oct. 31, 2004) [hereinafter *Bear, Stearns Judgment Addendum*]. But each of the judgments included and incorporated such an addendum. The internal changes required by the court-approved final settlement in October 2003 were the same as in the settlement to which the firms agreed in April, as were the amounts paid by the firms. See *Global Analyst Research Settlement Litigation Release*, *supra* note 244. This Article does not exhaustively summarize the structural and organizational changes required by the settlement, but instead highlights some of the key provisions.

²⁹¹ *Bear, Stearns Judgment Addendum*, *supra* note 290, ¶ 1.4.

²⁹² *Id.* ¶ 1.5.a.

²⁹³ *Id.* ¶ 1.5.b (reserving that overall firm revenue, presumably including investment banking revenue, might affect compensation).

²⁹⁴ *Id.* ¶ 1.5.c; see *infra* notes 333–35 and accompanying text (describing Regulation AC).

²⁹⁵ *Id.* ¶ 1.7 (but with the prohibition not extending to "category-by-category coverage (e.g. . . . all issuers underwritten by the firm . . .)").

²⁹⁶ *Id.*

²⁹⁷ *Id.* ¶ 1.8 (with the proviso that the final report need not be "comparable" to prior ones if that is "impracticable" because, for example, of a change in research staff).

²⁹⁸ *Id.* ¶ 1.9.

²⁹⁹ *Id.* ¶ 1.10.

³⁰⁰ *Id.* ¶ 1.11.

business with companies that they cover and that they may consequently have a conflict of interest that could affect the objectivity of their reports.³⁰¹

The firms agreed to make available on their websites, after each quarter, information about any research report prepared and furnished during the quarter. They agreed to include in this information: the name of the subject company, the date of the report, the name(s) of the analyst(s) responsible for the report, the rating for the stock, the price target (and period within which the analyst(s) expected the price to reach the target), and the earnings-per-share forecasts.³⁰² Each firm also agreed to create one or more oversight and monitoring committees comprised of research management (and possibly others, but not including investment bankers) to (1) review (before publication if practicable) all changes in ratings and material changes in price targets, (2) periodically review research reports to determine if changes in ratings or price targets should be considered, and (3) monitor the overall quality and accuracy of research reports.³⁰³

As part of the settlement, the firms also agreed to fund, for a five-year period, independent third-party research on the exchange-traded or NASDAQ companies they cover and to make that research available to their brokerage clients,³⁰⁴ and each firm agreed to the appointment of an independent consultant to procure the independent research.³⁰⁵ Each firm further promised to hire an independent monitor acceptable to the SEC staff, the NYSE, the NASD, the New York Attorney General's office, and the NASAA.³⁰⁶ The monitor was to review the firm's compliance with settlement terms and make a written report to the regulators by the end of two years following entry of the judgments implementing the settlement.³⁰⁷ To the extent that the monitor makes recommendations in the report, each firm committed to adopt them, with a proviso that the firm can argue that recommendations are unduly burdensome or impractical but with any dispute that the firm cannot resolve with the monitor ultimately decided by the SEC staff.³⁰⁸

³⁰¹ *Id.* ¶ II.1.a.

³⁰² *Id.* ¶ II.2. The idea was apparently that the public could then compare the analysts' projections and recommendations with how the stocks had done.

³⁰³ *Id.* ¶ I.12.

³⁰⁴ *Id.* ¶ III.1.

³⁰⁵ *Id.* ¶ III.2.

³⁰⁶ *Id.* ¶ II.6.

³⁰⁷ *Id.* The judgments were entered on October 31, 2003. Global Analyst Research Settlement Litigation Release, *supra* note 244.

³⁰⁸ *Id.* ¶ II.6.c.

It is always touchy to conclude that any defendant committed alleged wrongdoing just because the defendant paid something in settlement and agreed to prophylactic measures to prevent the future occurrence of an alleged wrong.³⁰⁹ But the size of the payment here and the settling firms' agreement to intrusive reform—when taken with all the other factors—suggest that the regulators' accusations had some significant foundation.

b. The Circumstance That Congress Demanded New Rules To Curtail Bias, as well as the Circumstance that the NYSE, NASD, and the SEC Adopted Extensive Rules to Curtail Bias, Suggest That Charges of Analyst Bias Were Not Frivolous

In addition to the settlements, regulators promulgated new rules to reduce analyst bias. In May 2002, the SEC approved analyst rule changes proposed by the NYSE and NASD.³¹⁰ The Sarbanes-Oxley Act then required further

³⁰⁹ The firms undoubtedly would have contended, had the analyst conflicts been litigated with the regulators, that the facts supplied by the agencies did not tell the whole story. The firms might have argued, among other things, that:

- Analysts were appropriately involved in screening potential investment banking clients as part of the firms' efforts to avoid banking companies unlikely to succeed.
- Precisely because analysts were involved at an early, screening stage, banking clients tended to be companies that the analysts thought likely to do well. Accordingly, it was no surprise that the analysts usually initiated coverage with a "buy" recommendation.
- When analysts chose companies to cover that were not already banking clients, the analysts were likely to select ones they admired—with the result that the analysts would naturally recommend buying the companies' stocks.
- There was no harm if, when choosing among attractive companies, the analysts also bore in mind the possibility of an investment banking relationship with the companies.
- Investors understood that brokerages almost never rated a stock as a "sell" but used the "neutral" rating as a code for "sell."
- There was nothing wrong with analysts awarding "buy" recommendations to the great majority of stocks they covered during the first part of The Bubble, as most stocks were going up at that time. As for the part of The Bubble during which stock prices dropped, only hindsight makes clear that the declines were more than temporary.
- Quite aside from looking at contributions to investment banking, the firms took into account all kinds of factors in analyst reviews and compensation, and the regulators' complaints oversimplified compensation systems.
- More generally, the regulators cherry-picked snippets from email and other documents and took those snippets out of a larger and more benign context.

Analysts and their firms may raise all of these points in private arbitrations and in private litigation spawned by the analyst investigations—as well as the issue of whether allegedly tainted analyst reports caused any recoverable damages and whether the analysts, whatever the pressures on them, actually believed what they wrote. See, e.g., *infra* notes 347, 350 (citing to some of the decisions in the private litigation).

³¹⁰ In March 2002, the Commission published new analyst rules that the NYSE and NASD proposed. Self-Regulatory Organizations: Notice of Filing of Proposed Rule Changes by the National Association of

rulemaking.³¹¹ The NYSE and NASD made more proposals, and the SEC approved the additional rule changes in July 2003.³¹²

The new SRO rules cover much of the same ground as the settlement, but add significant details and extend analyst reform beyond the ten firms that settled. For example, the rules forbid investment banking supervision or control over analysts and prohibit any "personnel engaged in investment banking activities" from wielding any influence over research analyst compensation.³¹³ The new rules require that compensation for those analysts who are "primarily responsible for the preparation of the substance" of research reports must be approved by a committee that reports to the firm's

Securities Dealers, Inc. and the New York Stock Exchange, Inc. Relating to Research Analyst Conflicts of Interest, 67 Fed. Reg. 11,526 (Mar. 14, 2002). The SEC approved the 2002 rule changes, after amendments, in May. Self-Regulatory Organizations; Order Approving Proposed Rule Changes by the National Association of Securities Dealers, Inc. and the New York Stock Exchange, Inc. and Notice of Filing and Order Granting Accelerated Approval of Amendment No. 2 to the Proposed Rule Change by the National Association of Securities Dealers, Inc. and Amendment No. 1 to the Proposed Rule Change by the New York Stock Exchange, Inc. Relating to Research Analyst Conflicts of Interest, 67 Fed. Reg. 34,968 (May 16, 2002).

³¹¹ Sarbanes-Oxley Act of 2002 § 501, 116 Stat. 745, 791-93 (codified at 15 U.S.C. § 78o-6) (adding § 15D to the Securities Exchange Act of 1934).

³¹² The NYSE and NASD initiated this new round of rulemaking by submitting proposed rules that the SEC published, for comment, in the Federal Register in January 2003. Self-Regulatory Organizations: Notice of Filing of Proposed Rule Changes by the New York Stock Exchange, Inc. Relating to Exchange Rules 344 ("Supervisory Analysts"), 345A ("Continuing Education for Registered Persons"), 351 ("Reporting Requirements") and 472 ("Communications With the Public") and by the National Association of Securities Dealers, Inc. Relating to Research Analyst Conflicts of Interest, 68 Fed. Reg. 826 (Jan. 7, 2003). The Commission published amended proposals in May 2003. Self-Regulatory Organizations: Notice of Filing of Amendment No. 2 to Proposed Rule Changes by the New York Stock Exchange, Inc. Relating to Exchange Rules 344 ("Supervisory Analysts"), 345A ("Continuing Education for Registered Persons"), 351 ("Reporting Requirements") and 472 ("Communications With the Public") and by the National Association of Securities Dealers, Inc. Relating to NASD Rule 2711 ("Research Analysts and Research Reports"), 68 Fed. Reg. 32,148 (May 29, 2003). The SEC approved the final rules in July. Self-Regulatory Organizations; Order Approving Proposed Rule Changes by the New York Stock Exchange, Inc. Relating to Exchange Rules 344 ("Supervisory Analysts"), 345A ("Continuing Education for Registered Persons"), 351 ("Reporting Requirements") and 472 ("Communications with the Public") and by the National Association of Securities Dealers, Inc. Relating to Research Analyst Conflicts of Interest and Notice of Filing and Order Granting Accelerated Approval of Amendment No. 3 to the Proposed Rule Change by the New York Stock Exchange, Inc. and Amendment No. 3 to the Proposed Rule Change by the National Association of Securities Dealers, Inc. Relating to Research Analyst Conflicts of Interest, 68 Fed. Reg. 45,875 (Aug. 4, 2003) (showing July 29, 2003 as the date of the SEC action). The summary that follows in the text of this Article is not intended to be exhaustive, but sets out some of the more important analyst reforms in the SRO rules. The summary does not attempt to separate those reforms that the SROs proposed before the Sarbanes-Oxley Act and those that followed the act. Note that the restrictions in NYSE Rule 472(b)(1)-(3) and NASD Rule 2711(b) do not apply to small firms, defined as those that, over the previous three years, on average per year, have participated in ten or fewer investment banking transactions as manager or comanager and generated \$5 million or less in gross investment banking revenue from those transactions. NYSE Rule 472(m) (2003); NASD Rule 2711(k) (2003).

³¹³ NYSE Rule 472(b)(1); NASD Rule 2711(b)(1).

board of directors (or to senior management if the firm has no board) and that may not include any representatives from investment banking.³¹⁴ The rules also provide that the committee must consider, among other things, the “correlation between the research analyst’s recommendations and stock price performance.”³¹⁵ The NYSE and NASD forbid firms from compensating analysts for specific investment banking transactions and, further, prohibit the committee approving compensation from considering the analyst’s “contributions to the [firm’s] investment banking business,”³¹⁶ while still permitting firms to take into account their overall financial performance, including investment banking results with those of other divisions.³¹⁷

The Exchange and NASD proscribe analyst participation “in efforts to solicit investment banking business,” whether in pitches or otherwise,³¹⁸ and prohibit offers of favorable ratings or specific price targets as inducement for investment banking, or any other business.³¹⁹ The rules permit nonresearch personnel (including investment bankers) to review research reports for factual accuracy or to identify conflicts of interest before the reports are published, but require that compliance or legal departments be involved in those communications,³²⁰ and prohibit nonresearch personnel from reviewing draft research reports for other purposes.³²¹ Covered companies cannot review draft reports, except to check for factual accuracy, and the draft reports submitted to companies for factual correction cannot include research summaries, ratings, or stock price targets.³²² The rules prohibit firm retaliation against analysts for unfavorable reports or public comments that hurt investment banking

³¹⁴ NYSE Rule 472(h)(2); NASD Rule 2711(d)(2).

³¹⁵ NYSE Rule 472(h)(2)(ii); NASD Rule 2711(d)(2)(B).

³¹⁶ NYSE Rule 472(h)(1)–(2); NASD Rule 2711(d)(1)–(2).

³¹⁷ NYSE 472(h)(1); Letter from NASD Associate General Counsel Philip A. Shaikun to James A. Brigagliano, Assistant Director, Division of Market Regulation, SEC 8 (July 29, 2003) (“NASD agrees that the general financial success of a member may be considered in determining analyst compensation as it would with respect to other non-investment banking departments. However, it would not be appropriate for a member to determine a research analyst’s compensation based upon the profitability of the member’s capital markets division, investment banking department, or some subgroup of such a division or department.”), available at http://www.nasd.com/stellent/groups/rules_regs/documents/rule_filing/nasdw_000362.pdf.

³¹⁸ NYSE Rule 472(b)(5); NASD Rule 2711(c)(4).

³¹⁹ NYSE Rule 472(g)(1); NASD Rule 2711(e).

³²⁰ NYSE Rule 472(b)(3); NASD Rule 2711(b)(3).

³²¹ NYSE Rule 472(b)(2)–(3); NASD Rule 2711(b)(2)–(3).

³²² NYSE Rule 472(b)(4); NASD Rule 2711(c)(2). These rules also require an analyst to (1) provide the legal or compliance department in his or her firm with a complete draft report before sending the expurgated copy to the company for factual comment, and (2) justify to the legal or compliance office any change in rating or price target after the company checks the draft.

business.³²³ The rules require that a firm terminating coverage on a company give notice of doing so and issue a final research report that, unless impracticable (as it might be if the analyst has left the firm), is "comparable in scope and detail to prior . . . reports and . . . include[s] a final recommendation or rating."³²⁴

The NYSE and NASD require disclosures far beyond those in the settlement. These include (but are not limited to) disclosures in a research report of whether the firm for which the analyst works or an affiliate has managed or comanaged a public offering for the covered company in the last twelve months, whether the firm or an affiliate has received investment banking compensation from the company within that time, whether the firm received compensation from the company during that time for noninvestment banking services, whether the firm expects to receive or intends to seek investment banking compensation from the company in the next three months, whether the analyst writing the report received any compensation from the company in the last twelve months, and whether an affiliate of the firm issuing the report received noninvestment banking compensation from the covered company in the last year.³²⁵ The new rules also mandate certain conflict disclosures by analysts in public appearances, including radio, television, and print media interviews in which analysts make recommendations or offer opinions concerning particular stocks.³²⁶

The NYSE and NASD require disclosure of holdings by the analyst and his or her household in the stocks the analyst covers.³²⁷ Addressing a matter that the settlement did not cover, the new rules also (with specified exceptions) forbid an analyst and related household to (1) trade in a manner inconsistent

³²³ NYSE Rule 472(g)(2); NASD Rule 2711(j).

³²⁴ NYSE Rule 472(f)(6); NASD Rule 2711(f)(5).

³²⁵ NYSE Rule 472(k)(1); NASD Rule 2711(h)(2). There is an exception from some of the disclosure requirements to the extent that disclosure would reveal "material non-public information regarding specific potential future" investment banking transactions of the covered company. NYSE Rule 472(k)(3)(i); NASD Rule 2711(h)(2)(C). The obligation to provide information on the noninvestment banking business of affiliates is qualified in somewhat complicated ways.

³²⁶ NYSE Rule 472(k)(2); NASD Rule 2711(h)(2)(B). This requirement addresses a phenomenon that developed during The Bubble—the rise of celebrity analysts in the new financial media outlets. See CASSIDY, *supra* note 134, at 166–70 (tracing the development of CNBC); Patrick McGeehan, *Wall Street's Internet-Stock Star Calls It Quits*, N.Y. TIMES (Late ed.), Nov. 15, 2001, at A1, C3. "Boyishly handsome with a charmingly casual manner, [Henry Blodget] became a fixture on CNBC and in the financial press, making the case for companies that were losing lots of money selling diapers or dog food over the Internet." *Id.*

³²⁷ NYSE Rule 472(k)(1)(iii)b; NASD Rule 2711(h)(1)(A).

with the recommendations that the analyst is making to the public,³²⁸ (2) purchase or otherwise receive pre-IPO shares in companies engaging in the same business as the companies that the analyst covers,³²⁹ or (3) trade in covered companies within thirty days before and five days after the analyst issues a report, change in rating, or price target.³³⁰

Conceivably quite helpful for investors, the new rules mandate that firms provide in each research report a chart that depicts the price of the covered company's stock over time and indicates the points at which the firm assigned or changed a rating or price target.³³¹ Reports must also state the percentages of all the securities the firm rates that the firm recommends an investor "buy," "hold," or "sell" (also including, within each category, the percentage of covered companies that has done investment banking business with the firm within the last year).³³²

In addition to the NYSE and NASD rules, the SEC promulgated Regulation AC in early 2003.³³³ This regulation requires each analyst primarily responsible for preparing a research report to state in the report (1) that all of the views in the report reflect the analyst's personal views; and (2) either (a) that the analyst has received, is receiving, and will receive no compensation for the specific recommendations or views in the report or (b) that the analyst did receive, or is or will be receiving, such compensation (with the source, amount, and purpose of any payment set out, together with an express caution that the compensation could influence the views and recommendations expressed).³³⁴ The new regulation also requires that analysts making public appearances in

³²⁸ NYSE Rule 472(e)(3); NASD Rule 2711(g)(3).

³²⁹ NYSE Rule 472(e)(1); NASD Rule 2711(g)(1).

³³⁰ NYSE Rule 472(e)(2); NASD Rule 2711(g)(2). To simply eliminate certain opportunities to boost stock prices through favorable research reports in a way that might help investment banking business, the Exchange and NASD rules impose, with certain exceptions, quiet periods in which research reports cannot be published at all—lasting forty days after an IPO for managers and comanagers, ten days after a secondary offering for managers and comanagers and twenty-five days for other underwriters and dealers selling in an IPO. NYSE Rule 472(f)(1)–(3); NASD Rule 2711(f)(1)–(2). The new rules also impose, again with some exceptions, a quiet period from fifteen days prior to fifteen days after the expiration of (or waiver or termination of) a lockup agreement that a firm, acting as manager or comanager, makes with an issuer or the shareholders of an issuer to prevent them from selling stock for a certain time after an offering. NYSE Rule 472(f)(4); NASD Rule 2711(f)(4).

³³¹ NYSE Rule 472(k)(1)(i); NASD Rule 2711(h)(6). This rule only applies where the firm has assigned a rating to the covered company's equity securities for at least one year, and the chart need not extend more than three years prior to the report.

³³² NYSE Rule 472(k)(1)(i); NASD Rule 2711(h)(5).

³³³ The adopting release is Regulation Analyst Certification, 68 Fed. Reg. 9482 (Feb. 27, 2003).

³³⁴ 17 C.F.R. § 242.501(a) (2004).

which they recommend stocks periodically certify that the statements they have made about the stocks accurately reflected their personal views at the time they made the statements and that they did not and will not receive any compensation for the specific recommendations and views they expressed.³³⁵

It is possible, of course, that all of the effort to prepare the new rules and the regulation, and all of the effort to shepherd them through the approval process, responded to a ghost problem or that it was just a public relations effort to improve public confidence in the stock markets. But it is more likely that this regulatory effort responded to a genuine analyst bias.

C. The Implications of Possible Analyst Bias for Efficient Market Analysis in 10b-5 Cases

Efficient market theory assumes that market professionals translate information into buy and sell decisions and that those decisions radiate that information into statistically *unbiased* stock price changes.³³⁶ Presumably, the market professionals must themselves be behaviorally unbiased in order that their actions contribute to statistically unbiased price changes. While there are several kinds of market professionals, the circumstances reviewed above suggest that the sell-side analysts within that cadre may well have been behaviorally *biased* instead of *unbiased* during The Bubble.

The question is what to make of this bias. There are some conclusions that courts should not draw and some that courts must.

1. Courts Should Not Conclude that Analysts Caused The Bubble

The Bubble did burst. Stock prices fell despite analysts' persistent counsel to continue buying.³³⁷ Moreover, at least the institutions that were reading what the sell-side analysts wrote may have understood that the rating words were not to be understood in a literal way but were a kind of code in which "hold" really meant "sell."³³⁸ In addition, some of the analysts apparently

³³⁵ *Id.* § 242.502(a); see also *id.* § 242.500 (defining "public appearance" to mean "any participation . . . in a seminar, forum (including an interactive electronic forum), or radio or television or other interview, in which the research analyst makes a specific recommendation or provides information reasonably sufficient upon which to base an investment decision about a security or an issuer").

³³⁶ See *supra* notes 20–22 and accompanying text.

³³⁷ The examples in Part VII.B.2 illustrate that prices of particular stocks that analysts continued to recommend did in fact fall despite the analysts' "buy" recommendations.

³³⁸ One CSFB analyst allegedly put it this way:

confided more candid opinions to their institutional clients than they published in their mass-distributed reports.³³⁹ And, in some instances, the text of the analysts' reports may have included so many negative remarks that a "buy" rating had little weight with those who read the analysis all the way through.³⁴⁰

On the other hand, The Bubble saw a large influx of individual retail investors.³⁴¹ Those individual retail investors may not have known the code that converted "hold" to "sell."³⁴² They did not enjoy personal and candid conclaves with the analysts. And they may not have read past the "buy"

Different analysts have different ways they would interpret a hold rating And I think it's probably fair to say that for a number of analysts, particularly because of the fear of backlash that we get from a company . . . or . . . that we get from institutional investors, there would be a hesitancy to use the "sell" rating. So analysts did have a tendency to somehow use a hold with more of a negative slant to it.

SEC Credit Suisse Compl., *supra* note 253, ¶ 57.

³³⁹ See SEC Lehman Compl., *supra* note 248, ¶¶ 83–84 (alleging that an analyst who publicly rated a stock a buy told an institutional investor in July 2000 that it "has to be a short big time"); SEC Warburg Compl., *supra* note 261, ¶¶ 88–91 (recounting a similar instance in which an analyst rated a stock a buy but advised institutions in late May 2000 that the stock was one of two "shorts").

³⁴⁰ Here are examples from allegations that the SEC made in April 2003: One Merrill Lynch report rated a stock both an intermediate and long-term "accumulate" but noted the issuer's "weak quarter" and "never-ending state of flux." The analyst said that the company's "value as a consolidated operating business continues to decline" even though "[p]ieces of [it] remain attractive for acquisition." The report referred to "our 'wait and see'" attitude. SEC Merrill Compl., *supra* note 255, ¶ 87. Discussing with an institutional investor a company the analyst was about to rate a 2 (outperform), one Lehman analyst said that the buy-side generally ignores the rating. Instead, "commentary is what matters and I'll be a 3-Neutral in my comments." SEC Lehman Compl., *supra* note 248, ¶ 65–66. A UBS Warburg report maintained a "buy" rating on a biotechnology company but said that a study of the company's drug was "inconclusive," that the type of testing that the issuer used "had been in less favor recently," and that "it is unclear what the FDA's requirements will be now" for testing the drug. SEC Warburg Compl., *supra* note 261, ¶ 75. Another Warburg report included a "buy" recommendation but said that the issuer had "fallen dramatically short on the top line." *Id.* ¶ 83. A First Boston report observed that the issuer "is rated Buy, only in the most generous sense" and that "in the short term we would only buy it on extreme weakness." SEC Credit Suisse Compl., *supra* note 253, ¶ 59.

³⁴¹ See *supra* Part VI.

³⁴² Shiller put it this way:

Analysts' recommendations have been transformed by something analogous to grade inflation in our schools: C used to mean an average grade, yet now it is considered as bordering on failure. Many of us know that such inflation happens, and we try to correct for it in interpreting our children's grades. Similarly, in the market we factor inflation into analysts' recommendations. But not everyone is going to make adequate corrections for analysts' newly hyperbolic language, and so the general effect of their changed standards will be to encourage the higher valuation of stocks.

SHILLER, *supra* note 132, at 30–31. Acting SEC Chairwoman Unger referred in July 2001 to "the so-called 'hold' business, which apparently is a red flag to sell which most of us never understood." Unger Analyst House Testimony, *supra* note 273, at 77.

recommendation if they saw a report, or they may not have had the entire report at all but only heard or seen that the analyst (or some number of analysts) recommended buying a particular company's stock.³⁴³

Academic research finds that changes in sell-side analysts' recommendations can affect stock prices.³⁴⁴ And journalists and commentators often attributed stock price changes to analyst reports during The Bubble.³⁴⁵

³⁴³ Here is how an investor might learn of a "buy" recommendation without reading the report that could contain caveats:

Sell-side analyst reports, while much more widely disseminated than other analyst reports, are not freely available to the public at large, at least not in their entirety. Such reports are generally available only to firm clients, either through brokers or through the firm's website; some firms also sell their research reports through other brokerages or services, where investors may pay a fee to have access to them. Beyond firm clients and paying customers, the average investor's access to an analyst's research in written form is generally limited to the recommendation, the earnings per share estimate, and the target price, which are widely published on the internet or are discussed in financial journals or on cable networks like CNN Financial News Network, which regularly interview analysts about trends and stocks.

SENATE GOV. AFFS. STAFF REPT. ON WATCHDOGS, *supra* note 238, at 71.

³⁴⁴ See Alon Brav & Reuven Lehavy, *An Empirical Analysis of Analysts' Target Prices: Short-term Informativeness and Long-term Dynamics*, 58 J. FIN. 1933, 1936-49 (2003) (studying analyst target prices, recommendations and earnings forecasts in the period 1997 to 1999; creating decile portfolios by ranking changes in target prices divided by market prices two days prior to announcement of the changes ("ΔTP/P"); computing average abnormal returns for those portfolios, from two days prior to the announcement of the target price change to two days after the announcement; finding that returns varied, with the portfolio with the most favorable ΔTP/P enjoying an average abnormal return of 3.21% and the portfolio with the least favorable ΔTP/P suffering an average abnormal return of -3.96%); see also Jeffrey A. Busse & T. Clifton Green, *Market Efficiency in Real Time*, 65 J. FIN. ECON. 415, 421-22 (2002) (studying the effect on prices and trading volumes of references to particular companies, during the period June 12 through October 27, 2000, in the Morning Call and Midday Call programs on CNBC, which reported opinions of analysts; finding, among other things, that: (1) positive reports during the Midday Call program produced an average cumulative return, from fifteen minutes before the mention to one minute after, of 62 basis points, 41 of which occurred in the one minute after the mention—with 73% of the positively mentioned firms experiencing a positive one-minute return and enjoying an average increase of \$109 million in market capitalization; and (2) negative reports during the Midday Call program produced an average negative 23 basis point cumulative return from fifteen minutes before to one minute after and an average 75 basis point negative return from fifteen minutes before to fifteen minutes after); Michael & Womack, *supra* note 272, at 667-68 (studying, for stocks going public in 1990 and 1991, initiation of analyst recommendations or change of analyst recommendations during the first year after IPO; finding that the "immediate average price reaction to the buy recommendation is positive (3.5%) and [statistically] significant" and that the "removed-from-buy and sell recommendations are both greeted with initial strong negative reactions of -12.7% and -10.5%, respectively," with both those numbers "highly significant"); Kent L. Womack, *Do Brokerage Analysts' Recommendations Have Investment Value?*, 51 J. FIN. 137, 146-49 (1996) (studying analyst recommendations from 1989 to 1991; concentrating on stocks added to or removed from the most attractive category (added-to-buy and removed-from-buy) and stocks added to or removed from the least attractive category (added-to-sell and removed-from-sell); finding size-adjusted mean returns of about positive 3% for the three-day period around a change by which an analyst added a stock to his or her buy list and negative mean size-adjusted returns of about 4.7% for the three-day

period around a change by which an analyst added a stock to his or her sell list); Scott E. Stickel, *The Anatomy of the Performance of Buy and Sell Recommendations*, 51 FIN. ANALYSTS J., Sept.-Oct. 1995, at 25, 36-37 (studying changes in analyst recommendations in the 1988-91 period (defining a "buy" recommendation to mean a change to "strong buy" or to "buy" from any lower rating, and defining a "sell" recommendation to mean a change to "hold," to "sell," or to "strong sell" from any higher rating); finding changes upward to buy recommendations associated with an average 1.16% price increase over the eleven business days centered on the date of change and changes downward to sell recommendations associated with an average 1.28% price decline, but noting that these averages are misleading because they include the confounding effects of such factors as earnings announcements; also finding that the temporary impact of a change in recommendation depends on whether it bumps a stock by more than one category (e.g., from hold to strong buy, thereby skipping buy) and whether the analyst is an *Institutional Investor* All American; finding, for example, an average price increase of 4.61% associated with "a strong buy recommendation that skips a rank, is issued by a[n] [Institutional Investor] first-team All American employed by a large brokerage house recommending a smaller company, [and] is accompanied by a positive revision in an earnings forecast," but noting that this average price increase "exclude[s] the confounding effects of earnings announcements and exclude[s] less-informative periodic (month-end dated) recommendations"). These parentheticals do not exhaustively summarize these studies' findings. The SEC, in an amicus brief last year read academic studies to (1) "document the market effect of research reports and recommendations by sell-side analysts," (2) show that "[p]rices of securities . . . react to analysts' issuance or revision of target trading prices . . . and to analysts' issuance or revision of earnings forecasts," and (3) reveal that "institutional investors . . . rely on such information." Brief of the Securities and Exchange Commission, Amicus Curiae 10-12, *Hevesi v. Citigroup* (No. 03-9350) (2d Cir., Apr. 2004), available at http://www.sec.gov/litigation/briefs/wchevesi_amicus.pdf.

³⁴⁵ Reviews of Mr. Grubman's career claimed that he could "boost a company's stock price. On Mar. 14, 2000, for example, he raised his price target for Metromedia Fiber Network, which Salomon had taken public, and its shares surged 16%" Rosenbush et al., *supra* note 277, at 34. And Henry Blodget was credited with helping Amazon.com's price by predicting, when it sat at about \$240, that it would pass \$400. McGeehan, *supra* note 326, at C3. The stock popped up \$46.25 on December 16, 1998, the day after Blodget made that prediction. CASSIDY, *supra* note 134, at 200. Similarly, after Blodget downgraded Amazon in late October 1999, and four other analysts also issued downgrades, the stock fell within a week from \$76 to \$63. *Id.* at 260.

There were many other stories of which the following is a small sample. See *id.* at 195 ("On November 10, [1998, two analysts at] Goldman Sachs raised their price target [for eBay] to \$150, and the stock jumped \$27^{15/16} to \$130^{7/8}."); Randy Whitestone, *No Kidding Around in e-Money*, INTERACTIVE WK. FROM ZDWire, Oct. 25, 1999, available at 1999 WL 14629112 (saying, retrospectively about CyberCash, that "[o]n Oct. 4, Prudential Securities analyst Paul Merenbloom raised his rating on [the company] to 'strong buy' from 'buy' and the shares surged 16 percent"); *In Brief*, L.A. DAILY NEWS, Dec. 22, 1999, at B1, available at 1999 WL 7041870 ("Shares of Go.Com, the tracking stock of the Internet properties of The Walt Disney Co., jumped . . . 28 percent . . . after Schroder & Co. analyst Arthur Newman upgraded his rating of the company to 'outperform significantly.'"); Gregory Karp, *Fastnet Shares Zoom 24 Percent as "Strong Buy" Silicon Success*, ALLENTOWN MORNING CALL, Mar. 7, 2000, at B12, available at 2000 WL 8185224 (stock up after First Albany and ING Barings analysts issued "strong buy" ratings); Steven Syre & Charles Stein, *Analysts' Reports Make Overheated Market Burn Even Hotter*, BOSTON GLOBE, Mar. 8, 2000, at D1, available at 2000 WL 3316915, stating:

On Monday, the stock price of PMC-Sierra, a chip maker, jumped to 230 from 201. The main reason? An analyst raised his 12-month price target . . . from 200 to 250.

In January, the stock price of Art Technology Group, a Boston software company, jumped 25 percent in a single day when an analyst at Credit Suisse First Boston initiated his coverage with a "strong buy" rating. The analyst predicted that the stock, then trading for 125, would reach 200 in the next year. It hit 156 that day. It closed yesterday at 185.

Uncertainty, however, remains. A recent and as yet unpublished study argues that the market discounted the buy recommendations of analysts whose firms were relatively more dependent on investment banking revenue and who therefore may have faced more severe investment banking pressure to tilt their stock recommendations in a positive way.³⁴⁶ It also remains to be seen

Similarly, journalists often attributed stock price declines to analysts lowering their ratings or price targets. Again, here is a very small sample: Jim Rasmussen, *Omaha, Neb.-Based Online Investment Broker's Stock Price Falls*, KNIGHT-RIDDER TRIB. BUS. NEWS, Aug. 31, 1999, available at 1999 WL 22010534 ("Ameritrade Holding Corp.'s stock price fell 6.3 percent Friday after a Wall Street analyst [with Lehman Brothers] lowered his rating."); Jerome R. Stockfisch, *Kforce.com Stock Drops 34 Percent*, TAMPA TRIB., June 23, 2000, available at 2000 WLNR 620337:

Shares of kforce.com slid to a 52-week low Thursday after the company was blistered by the latest analyst to downgrade its stock . . . Analyst Theresa Matacia of Dain Rauscher Wessels cut her rating . . . from "buy-aggressive" to "neutral" The action followed earlier downgrades by analysts at Raymond James & Associates and Robert W. Baird & Co.

See also John Cook, *Amazon Stock Plunges After Analyst Report*, SEATTLE POST-INTELLIGENCER, June 24, 2000, at A1, available at 2000 WL 5297897 (describing how Amazon.com lost 19% after a Lehman convertible debt analyst said the company's debt, negative cash flow, and poor working capital management would put it "under extremely high risk").

³⁴⁶ Anup Agrawal & Mark C. Chen, *Do Analyst Conflicts Matter? Evidence from Stock Recommendations* (Mar. 2005) (unpublished manuscript on file with the author). The researchers used a database of more than 110,000 analyst recommendations made by over 4000 analysts for the period 1993 to 2003, and data on investment banking revenue, brokerage revenue, and total revenue for the 188 privately held and forty-four publicly traded brokerage houses for which the analysts worked. *Id.* at 7-8. The researchers found that four types of changes in analyst recommendations (added to "strong buy," added to "buy/strong buy," dropped from "strong buy," and dropped from "buy/strong buy") affected stock prices. For example, stocks added to a strong-buy list experienced a mean abnormal return of about 2% over a two-day period, and stocks dropped from a strong buy list suffered a 4% negative abnormal two-day return. *Id.* at 13-14. But when the researchers ran regressions on stock returns with variables for the size of an analyst's firm, the size of the company followed, and measures of analyst reputation, experience, and workload—as well as variables for the percentage of revenue that the analyst's firm derived from investment banking and the percentage from brokerage business—the researchers found that the coefficient on the variable for percentage of investment banking revenue was negative for both upgrades and downgrades. This suggested that, after controlling for the other variables, the size of the positive abnormal price reaction to an upgrade decreased as the degree of investment banking pressure on the analyst issuing a recommendation increased, as would be expected if the market discounted for overoptimism prompted by a desire to gain investment banking assignments. It also suggested that the size of the negative abnormal price reaction to a downgrade increased with the degree of investment banking pressure on the analyst, as would be expected if the market assumed that banking pressure would temper pessimism and that therefore a downgrade by an analyst at a house more heavily dependent on investment banking business was a particularly bad sign. *Id.* at 15-17. The authors further found that—when they ran regressions on cumulative abnormal returns for the twelve months following the recommendation changes—the coefficient on the variable for percentage of the analyst's firm total revenue derived from investment banking was essentially zero, suggesting that the medium-term performance of stocks after changes in recommendations did not differ depending on whether the analyst's firm had more at stake in investment banking or less. *Id.* at 25-26. They found this to be true in both the late 1990s and in later years. *Id.* at 26-27. The researchers concluded that "the market's response to stock recommendations appears to take into account the conflicts that analysts face." *Id.* at 29.

whether plaintiffs can prove, in contested Bubble cases, that the stock recommendations or price targets of a particular analyst affected a specific stock's price.³⁴⁷

³⁴⁷ The courts are grappling now with whether analyst reports affect prices. The Second Circuit recently affirmed dismissal of allegations that analyst recommendations artificially inflated the prices of two stocks. *Lentell v. Merrill Lynch & Co., Inc.*, 396 F.3d 161 (2d Cir. 2005). The court found that plaintiffs failed to plead loss causation. *Id.* at 172–77. The Second Circuit read the research reports to be “full of (unchallenged) analysis . . . suggesting that [the two stocks] were volatile investments . . . subject to sudden and substantial devaluation risk.” *Id.* at 176. Plaintiffs alleged a very limited fraud—only that the ratings in the reports were false and misleading. *Id.* at 166. But the plaintiffs failed to allege loss causation because they did “not allege that the subject of those false recommendations (that investors should buy or accumulate [the two stocks involved]), or any corrective disclosure regarding the falsity of those recommendations, [was] the cause of the decline in stock value that plaintiffs claim as their loss” and “allege[d] no loss from the market’s realization that the opinions were false” *Id.* at 175–76 (emphasis in original).

A judge in the Southern District of New York somewhat similarly granted a motion to dismiss in part for failure to plead loss causation in cases involving recommendations on eToys and seven other stocks. The court said that the allegations made it “clear that the harm suffered by the plaintiffs was . . . caused by the direct intervention of the crash of the internet bubble . . . for which the defendants were not responsible.” *In re Merrill Lynch & Co., Inc. Research Reports Sec. Litig.*, 289 F. Supp. 2d 416, 421 (S.D.N.Y. 2003). Judge Pollack added that, for example, while plaintiffs referred to a price decline on the same day that an analyst downgraded eToys, plaintiffs “ignore . . . that . . . the prices of the securities at issue sometimes increased when Merrill Lynch downgraded its rating, sometimes decreased when Merrill Lynch upgraded its rating, and often showed wide fluctuations even when Merrill Lynch issued no reports at all.” *Id.* at 421–22 (emphasis in original) (footnote omitted); see also *In re Merrill Lynch Tyco Research Sec. Litig.*, 2004 WL 305809, at *2–3 (S.D.N.Y. Feb. 18, 2004) (granting motion to dismiss for failure to plead loss causation; case based on Merrill Lynch projection in analyst reports that Tyco might be able to sell CIT for \$7–8 billion; but Tyco’s stock price actually rose when Merrill cut its estimate of likely proceeds from a CIT sale and fell two days later on unrelated news).

One lower court in the Second Circuit has held that the FOTM “doctrine applies in a case premised on a securities analyst’s false and fraudulent opinions or recommendations only where the plaintiff can make a showing that the analyst’s statements materially impacted the market price in a reasonably quantifiable respect.” *DeMarco v. Lehman Bros. Inc.*, 222 F.R.D. 243, 247 (S.D.N.Y. 2004) (concerning research on Real Networks) (emphasis in original). The court found that the plaintiffs had not made any such showing in the case at hand and therefore denied class certification. *Id.* at 247–49; see also *Hevesi v. Citigroup*, 366 F.3d 70, 77–81 (2d Cir. 2004) (granting Rule 23(f) review to consider this very issue in the WorldCom case, which Citigroup settled before the Second Circuit made a substantive decision on what showing plaintiffs must make, and what findings a court must make, to certify a class in a FOTM case against an analyst). The district court subsequently granted summary judgment to the defendants in the Real Networks case because the plaintiffs did not make any evidentiary showing that the analyst’s statements materially affected the stock price and therefore could not raise triable issues of fact for FOTM reliance or for loss causation. *DeMarco v. Lehman Bros.*, 2004 WL 2674611 (S.D.N.Y. Nov. 23, 2004).

The district court in the WorldCom litigation, however, denied the motion to dismiss by Grubman and his employer, holding that plaintiffs had pled loss causation. *In re WorldCom, Inc. Sec. Litig.*, 294 F. Supp. 2d 392, 428–29 (S.D.N.Y. 2003). In a related decision, the court denied 1292(b) certification. See *In re WorldCom, Inc. Sec. Litig.*, 2003 WL 22533398, at *10 (S.D.N.Y. Nov. 7, 2003). Of course, a ruling on a motion to dismiss is only a ruling on allegations, and denial of a motion to dismiss does not show that plaintiffs would win on any issue, including loss causation, if the case were tried. Here, the Citigroup defendants, including Grubman, settled the WorldCom litigation before trial, with the settlement covering asserted liability based on underwriting conduct as well as asserted liability based on research reports. *In re*

Taken together, the facts and allegations suggest that overoptimistic analyst reports *may* have contributed to an upward statistical bias in stock price changes as The Bubble built. But analysts were not The Bubble's sole cause, and analysts did not control The Bubble.

2. *Courts Should Not, in Bubble Cases, Attempt To Determine the Efficiency of the Market for a Stock by Counting the Number of Sell-Side Analysts Who Followed the Stock*

The *Cammer* factors that many courts employ to determine whether the market for a particular stock is sufficiently efficient for FOTM treatment include a simple count of the number of analysts following that stock. The notion is that, if a significant number of analysts cover a stock, the stock is more likely to trade efficiently.³⁴⁸ Courts should not use this analysis for cases originating during The Bubble.

Again, a central premise of the efficient market theory in its most simple and mechanical version is that the market translates information into price in an *unbiased* way.³⁴⁹ At the very least, the huge proportion of "buy" recommendations during The Bubble, the paucity of "sell" recommendations, the conclusion of multiple regulators immediately after The Bubble that analysts were biased, the enormous amount that the major brokerage and investment banking firms paid to settle the regulators' claims, and the structural changes imposed by settlements and new rules—taken together—raise such a formidable concern that analysts were behaviorally biased that courts should not conclude that an increase in the number of analysts who followed a stock during The Bubble increased the probability that the market for the stock was statistically unbiased and efficient during The Bubble.

It may be that just the opposite was true and that analyst interest contributed to market inefficiency by statistically biasing price changes. But courts need not resolve that issue—or even come to a firm conclusion that

WorldCom, Inc. Sec. Litig., 2004 WL 2591402 (S.D.N.Y. Nov. 12, 2004) (approving settlement); *see also* DeMarco v. Robertson Stephens Inc., 318 F. Supp. 2d 110, 122–26 (S.D.N.Y. 2004) (denying motion to dismiss, except as to insider trading claims, in an analyst case based upon research reports on Corvis Corporation; finding loss causation alleged). The court in *Robertson Stephens* also certified a class and, in the process, ruled that plaintiffs made a sufficient showing of FOTM to satisfy the Rule 23(b)(3) predominance requirement so that they could attempt to prove, at a class trial, that the allegedly false analyst reports had a market effect. DeMarco v. Robertson Stephens Inc., 2005 WL 120233 (S.D.N.Y. Jan. 20, 2005).

³⁴⁸ *See supra* note 45 and accompanying text.

³⁴⁹ *See supra* notes 20–22 and accompanying text.

analysts were behaviorally biased³⁵⁰—in order to decide that there is a sufficient question about analyst bias so that courts should not assume, in Bubble cases, that the probability of a market for a stock being efficient automatically increased with the number of sell-side analysts reporting on the stock.³⁵¹ No court should—in order to determine whether to apply the FOTM in a Bubble case—count the number of sell-side analysts and lean toward a presumption of market efficiency as that count increases.

3. *The Real Possibility of Analyst Bias Should Contribute to Courts' General Unease in Applying the Efficient Market Theory To Prove 10b-5 Elements in Bubble Cases*

Analysts did not perform, during The Bubble, the restraining role in which some court opinions cast market professionals.³⁵² The analysts did not apply the brakes; they stepped on the gas. To the extent that simple, mechanical efficiency connects to value efficiency through the actions of market professionals who restrain irrational optimism, the performance of analysts during The Bubble suggests that the connection between mechanical efficiency and value efficiency may have gone missing.

So now—with all the factors exposed—the question remains: Is EMT analysis normatively appropriate for use in securities lawsuits arising from The

³⁵⁰ Indeed, when analyst sincerity has been actually litigated, analysts have sometimes prevailed at the motion to dismiss stage. In *Podany v. Robertson Stephens*, 318 F. Supp. 2d 146 (S.D.N.Y. 2004), the court granted motions to dismiss in two related cases because plaintiffs failed to allege facts to show that analyst beliefs expressed in research reports were not sincere. Thus, “plaintiffs . . . point[ed] to no inconsistent statements or actions by defendants from which a factfinder could infer that the published opinions were not truly held.” *Id.* at 155. The court later found proposed amended complaints inadequate. *Podany v. Robertson Stephens*, 350 F. Supp. 2d 375, 379–81 (S.D.N.Y. 2004). Another case met a similar end. See *In re Merrill Lynch & Co., Inc. Research Reports Sec. Litig.*, 273 F. Supp. 2d 351, 372–75 (S.D.N.Y. 2003) (dismissing claim based on research ratings in part because plaintiffs failed to plead specific facts to show that the particular ratings at issue did not truly reflect analyst opinions), *aff’d on other grounds*, 396 F.3d 161 (2d Cir. 2005). But see *DeMarco*, 318 F. Supp. 2d at 117–19 (denying motion to dismiss analyst case, except as to insider trading claims, and finding that plaintiffs had pled sufficient facts to allege misrepresentation of opinions in research reports and scienter). Importantly, any decision denying a motion to dismiss in an analyst case, because a plaintiff satisfied pleading requirements in alleging misrepresentations in research reports and sufficiently pled analyst scienter, does not find any misrepresentation or scienter as a fact. It is a decision on a pleading motion only. In neither this note nor *supra* note 347 does this Article attempt a comprehensive survey of the analyst litigation.

³⁵¹ Even if it were shown that the market during The Bubble corrected for analyst bias so that analyst reports did not affect prices, there would be no reason to count analysts to determine the efficiency of the market for a stock. The circumstance that the market overcame obstacles to efficiency is no reason to point to the existence of the obstacles as an indicator of efficiency.

³⁵² See *supra* note 119 and accompanying text.

Bubble? And if not (or at least not as the courts currently use EMT), what should the judiciary do?

CONCLUSION

One way to address the propriety of employing EMT in Bubble cases is to ask: What if the case bringing the fraud-on-the-market theory to the Supreme Court had traced its origins to The Bubble? What if the context in which the Court considered whether to dispense with individual reliance based on efficient market analysis had included:

- A stock market that had rocketed skyward, then plunged earthward in roughly four years without justification in such fundamental terms as discounted cash flow analysis;
- A market in which, for about two years, almost 80% of the companies going public had negative earnings;
- A market in which the average increase in stock price on the first day of trading was 71% in one year and 56% in another;
- A market providing untested companies with valuations equaling the valuations of large and established companies;
- A market that appeared to be best described by scholars who postulated that price increases simply generated more price increases in a series of feedback loops;
- An entire academic school of thought raising empirical and theoretical questions about stock market efficiency;
- An understanding of the practical constraints of arbitrage in restraining runaway pricing;
- Amateur online traders—taking their wisdom from sources as questionable as participants in electronic chat rooms, who identified themselves only by Internet nicknames—entering a significant portion of each day's trades; and
- A regulatory community in an uproar over pro-purchase bias in analyst reports?

Do we really believe that the Supreme Court would have embraced the fraud-on-the-market presumption if the case bringing that theory to the Court had displayed this context? And if not, why should we apply the efficient market theory in Bubble cases today?

We are uneasy with FOTM—and with employing event studies to decide materiality, loss causation, and damages issues—in Bubble-based 10b-5 cases because the efficient market theory, as it should be understood by the courts, requires more than mechanical efficiency. It is not enough—when we use EMT in lawsuits that will take money from some and deliver it to others—that prices changed in response to announcements and that we can connect a price change to an announcement through an event study. For justice to be done, the changes must be tied, to some significant degree, to economic fundamentals. If not, then the courts may award damages simply because investors lost money. That is insurance, not 10b-5 law.

Moving away from this overview perspective, return to the normative aspects of 10b-5 elements. Reliance must be reasonable, including reliance on a market price. Materiality encompasses the notion that information be significant in the deliberations of a reasonable investor. Loss causation allocates responsibility in accordance with notions of justice. And wrongdoers, in civil lawsuits with no punitive damages,³⁵³ are not insurers against market risk—or madness.

EMT analysis in 10b-5 cases—and dependence on event studies for materiality, reliance, loss causation, and damages—may make sense when price changes are effectively controlled by unbiased market professionals who move securities prices from one level to another level to adjust for changes in valuations based on something like discounted cash flow. But when market values are off in space and lifted by a herd mentality that objective professionals cannot check and to which biased analysts may contribute, simply showing that an announcement moved prices from one goofball number to another goofball number seems like a funny way to prove that reliance on the market price was reasonable, that the information moving the price was reasonably important, or that it is just for a plaintiff to recover money from a defendant in a lawsuit, with the amount of the recovery determined by the differences between two prices, both of which were simply wacky.

What is to be done? The radical solution is to throw out EMT analysis altogether in Bubble cases. This would, among other things, accord with the probability that the Court would never have embraced EMT thinking if the Court had first considered that possibility in a Bubble case. But this first solution may be too categorical for the courts.

³⁵³ There are no punitive damages in 10b-5 civil lawsuits. LOSS & SELIGMAN, *supra* note 181, at 1292.

Another approach is to tinker with the factors that courts use to determine, in a Bubble case, whether a market is efficient in the first place. Part II showed that courts use many factors already and apply them in a mishmash. So there should be plenty of room to maneuver.

Parts VI and VII already made two modest suggestions, and the very nature of The Bubble suggests a third. First, courts should be wary, in a Bubble case, of relying on the percentage of outstanding shares traded weekly to indicate efficiency, as day traders and other online amateurs may have been responsible for a considerable part of that volume and their trades may have heightened market irrationality. Second, courts should not use a count of sell-side analysts to support a conclusion that the market for a particular stock was efficient, as the analysts may well have been behaviorally biased during The Bubble. We cannot assume that their reports to the market contributed to statistically unbiased pricing and price changes. Third, since stock prices were so unreasonably high during The Bubble, courts should be leery of using market capitalization as an indicator of efficiency.³⁵⁴

Here is a more challenging suggestion, still centered on the factors to which courts look to assess efficiency. Courts could add to their current list of factors a requirement that, in order to apply EMT analysis to any element in a Bubble case, plaintiffs must plead and prove facts to show that the price levels and price movement described in their complaints had some basis in fundamental financial analysis. *Basic* itself provides support for adding such a factor, with its references to “fair” and “just” prices approximating “value.”³⁵⁵

³⁵⁴ Irrationally large market capitalizations were one of the defining characteristics of The Bubble. See *supra* notes 132–35 and accompanying text.

³⁵⁵ See *supra* notes 23–24 and accompanying text; see also *Hevesi v. Citigroup Inc.*, 366 F.3d 70, 77 (2d Cir. 2004) (observing that FOTM doctrine, as described by *Basic*, “creates a rebuttable presumption that . . . investors rely on the market price of securities as an accurate measure of their *intrinsic value*”) (emphasis added); *Ockerman v. May Zima & Co.*, 27 F.3d 1151, 1158 (6th Cir. 1994) (saying that the FOTM presumption is based on three factual premises, one of which is that “unsophisticated investors generally rely on a security’s market price as reflecting the security’s *value*”) (emphasis added).

Another approach compares the propensity of a company’s stock price to change in an abnormal way in response to news about the company with the propensity of the stock price to change in an abnormal way when no news about the company appears. This approach would

- select a sample of days from just before the class period or from the class period, but excluding days on which allegedly corrective disclosures occurred;
- determine, for each day in the sample (presumably by using an event study) whether the issuer’s stock price moved in a way that was significantly different on that day from the movement of that price as predicted by the movement of an index of similar stocks and the historical relationship between the issuer’s stock price movement and the movement of the chosen index;

An alternate approach would simply seek to rein in the effect of applying EMT to a Bubble case by limiting the 10b-5 damages in such an action to the amount that the defendants gained. That amount might be measured, for example, by the money that a company took in by offerings made during the period of the alleged fraud, plus the profits that insider defendants made on their stock transactions during that time. In effect, this would limit damages to a gain-based cap.³⁵⁶ There might not be much immediate logic to this approach, but it would place some limit on crazy results.

Stepping back from the specific concerns of this Article, the story of EMT use in 10b-5 cases raises this broader issue: When lawyers and courts adopt a social science theory (like the efficient market theory) and apply that theory through a scientific test (such as an event study) to prove elements of a cause of action, there is a danger that advocates and judges will fail to monitor the relationship between the theory and test, on the one hand, and the normative aspects of the elements, on the other hand. Social science may change—as here when flocks of finance professors publish articles and write books attacking the theory.³⁵⁷ Or an event may occur—here The Bubble—that

- divide the sample days into those on which news about the company appeared and those on which no news appeared;
- compute the percentage of sample days with news that has a statistically significant price movement and the percentage of sample days without news that displays such a price movement; and test whether the difference between those percentages is statistically significant.

Ferrillo et al., *supra* note 58, at 119–22. The authors of this test propose that statistical significance of this difference be a necessary “threshold step” but not a sufficient condition for finding a stock to trade efficiently. *Id.* at 122.

This test, however, does not attempt to determine *why* the stock moved in an abnormal way after the disclosure of company news. Did it move because of a biased analyst report interpreting the news in a wild and overly optimistic way? Did it move because of some chat room trend chaser’s comment that rocketed around the Internet with more speed than sense? Accordingly, this test is concerned only with mechanical efficiency, not the value efficiency that arguably should be a prerequisite when applying EMT analysis to work justice in the courts. Indeed, as the authors of this new approach say,

[P]assing this or most other tests of market efficiency only serves to show that the stock is responding to news and/or trading in a way in which one cannot earn a supernormal profit; the tests do not show that the stock price itself necessarily reflects the fundamental value of the underlying company.

Id.

³⁵⁶ See *supra* note 125 and accompanying text for a discussion of why 10b-5 damages can outstrip the gains that defendants reap from an asserted fraud.

³⁵⁷ As Professor Stout observed, legal scholarship “often adopts the intellectual fashions of other fields long after they have reached their zenith in their home discipline.” Stout, *supra* note 26, at 666. Justice White, joined by Justice O’Connor, made much the same point in his *Basic* dissent, expressing his fear that “the Court

separates the outcome of the scientific test (a conclusion that news caused a price change) from the elaboration of the theory (that powerful and rational market professionals caused unbiased change from one price that made sense to another that made sense). Courts and advocates may become so comfortable with a theory that judges and lawyers fail to see that it is no longer universally accepted in the social science that gave it birth. They may similarly fail to see that the new event has severed the link between, on the one hand, the application of the theory to cases by the test, and, on the other hand, the justice that courts seek to dispense.

today ventures into [an] area beyond its expertise" and opining that "while the economists' theories which underpin the fraud-on-the-market presumption may have the appeal of mathematical exactitude and scientific certainty, they are—in the end—nothing more than theories which may or may not prove accurate upon further consideration." *Basic v. Levinson*, 485 U.S. 224, 253–54 (1988) (White, J., dissenting).