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The Enduring Legacy of Modern Efficient Market Theory After Halliburton v. John

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THE ENDURING LEGACY OF MODERN EFFICIENT MARKET THEORY AFTER *HALLIBURTON* V. *JOHN*

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I. INTRODUCTION

Back in 1988, the Supreme Court adopted modern efficient market theory (EMT) as a basis for supporting fraud-on-the-market (FOTM) in Section 10(b) securities class actions in *Basic Inc. v. Levinson*.[1] For more than a quarter of a century since, the theory has sustained a barrage of attacks from legal scholars with varying degrees of hostility towards application of economic theory in securities and corporate jurisprudence.[2] This hostility culminated in briefs and arguments in the recent decision of *Halliburton Co. v. Erica P. John Fund, Inc.*,[3] but in the end, the durability of economic theory prevailed.[4] Unfortunately, unwarranted hostility to the theory continued in the concurring

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[1] *See* Basic Inc. v. Levinson, 485 U.S. 223, 247 (1988) ("An 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 market price, an investor's reliance on any public material misrepresentations, therefore, may be presumed for purposes of a Rule 10b-5 action.").

[2] *See, e.g.*, Lawrence A. Cunningham, *Finance Theory and Accounting Fraud: Fantastic Futures versus Conservative Histories*, 53 BUFF. L. REV. 789, 796 (2005) ("Behavioral finance theory undercuts modern finance theory and explains realities that modern finance theory cannot."); Erik F. Gerding, *The Next Epidemic: Bubbles and the Growth and Decay of Securities Regulation*, 38 CONN. L. REV. 393, 395 (2006) ("According to behavioral finance theorists, stock market bubbles are driven by 'noise traders' who make irrational investment decisions on the basis of herding behavior and behavioral biases."); Jeff Schwartz, *Fairness, Utility, and Market Risk*, 89 OR. L. REV. 175, 179 (2010) ("Behavioral finance scholarship has shown that the notion that share prices are correct rests on shaky theoretical and empirical underpinnings."); Peter J. Smith, *New Legal Fictions*, 95 GEO. L.J. 1435, 1456–57 (2007) ("Scholars have applied behavioral economics to investor behavior in particular, finding many examples of investor irrationality. In addition, scholars in the field of behavioral finance, a subdiscipline of behavioral economics, have produced significant evidence that markets are affected by the biases that affect individual behavior." (footnotes omitted)).

[3] 134 S. Ct. 2398 (2014); *see, e.g.*, Brief for the Committee on Capital Markets Regulation as Amicus Curiae Supporting Petitioners at 3, Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398 (2014) (No. 13-317), 2014 WL 60718, at *3 (criticizing *Basic* for failing to protect investors, placing U.S. capital markets at a competitive disadvantage, and burdening shareholders and corporations with heavy costs through the U.S. securities fraud class action system).

[4] 134 S. Ct. at 2414 ("For the same reasons we declined to completely jettison the *Basic* presumption, we decline to effectively jettison half of it by revising the prerequisites for invoking it.").

opinion of Justice Thomas, joined by Justices Alito and Scalia.[5] This hostility must be addressed.

Many naïve arguments have been made against EMT. The unifying theme among all these arguments is that, because EMT posits that market prices are correct, EMT must be false, because market prices, which are extremely volatile and consequently double and halve in short time periods, obviously cannot all be correct.[6] This argument reflects a misunderstanding of what the EMT actually implies as well as a gross misunderstanding of the pricing process.[7] The EMT does not actually imply that prices are "correct"—a term which is not well defined in pricing—but instead implies that market prices are the most accurate forecast of value *conditioned on available information*.[8] This concept of conditioning is important and must be explained.

Conditioning affects probabilities and can either increase or decrease the probability of an event.[9] Consider, for instance, whether a randomly selected individual is guilty of a specific crime. The probability of a randomly selected person having committed the crime is probably quite low. If the person is not selected randomly, however, but is instead selected because her fingerprints were at the location and eyewitnesses saw her, then the probability that the charged individual committed the crime is higher, conditional on the evidence. Alternatively, if the person is randomly selected and was also known to have never left Korea

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[5] *See id.* at 2425 (Thomas, J., concurring) ("*Basic* should be overruled . . . .").

[6] *See, e.g.*, Louis Lowenstein, *Searching for Rational Investors in a Perfect Storm*, 30 J. CORP. L. 539, 540–41 (2005) ("The speculative excesses of the 1990s threw a harsh light on [EMT] . . . . Obviously the theory was wrong—woefully so. In the late 1990s, stocks soared to levels out of proportion with their underlying values . . . ."); Lynn A. Stout, *The Unimportance of Being Efficient: An Economic Analysis of Stock Market Pricing and Securities Regulation*, 87 MICH. L. REV. 613, 656 n.223 (1988) (suggesting that precipitous market changes are indicative of "markets that are, on the whole, over- or under-valued").

[7] *See* Mark Klock, *Are Wastefulness and Flamboyance Really Virtues? Use and Abuse of Economic Analysis*, 71 U. CIN. L. REV. 181, 197–217 (2002) (describing the implications of market efficiency and common misconceptions).

[8] *See id.* at 200 ("[T]he ECMH implies that prices are a rational calculation of value conditional on all available information.").

[9] *See* Mark Klock, *Finding Random Coincidences While Searching for the Holy Writ of Truth: Specification Searches in Law and Public Policy or* Cum Hoc Ergo Propter Hoc?, 2001 WIS. L. REV. 1007, 1049–51 (discussing factors that can cause calculations of conditional probabilities to change).

during his lifetime, but the crime was committed in the U.S., then the probability that the person committed the crime conditional on the data that the individual had spent his entire life in Korea would be lower, zero.

The price of a financial security is based on the present discounted value of the expected future cash flows.[10] The future cash flows accruing to the holders of common stock are uncertain, but can be thought of as having a probability distribution which is conditional on publicly available information.[11] As information changes, prices will change.[12] Note that there are some extremely subjective and potentially volatile factors affecting the value of future cash flows. One such factor would be the anticipated rate of growth in the cash flows.[13] This is highly subjective and could change quickly based on investors' moods or investors' perceptions of other investors' projections of the future.[14] This can be thought of as endogenous uncertainty.[15] My prediction of the future will be affected by what other people reveal to be their predictions, and my revisions of my predictions could further change other people's predictions, which could continue to feedback into my

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[10] *See, e.g.*, GORDON J. ALEXANDER ET AL., FUNDAMENTALS OF INVESTMENTS 331 (James C. Boyd et al. eds., 3d ed. 2001) (equating the value of a stock to the discounted value of all future dividends that are expected to be paid).

[11] *See* Mark Klock, *Two Possible Answers to the Enron Experience: Will It Be Regulation of Fortune Tellers or Rebirth of Secondary Liability?*, 28 J. CORP. L. 69, 99 (2002) (describing stock valuation based on expected future cash flows).

[12] *See* Mark Klock, *Mainstream Economics and the Case for Prohibiting Inside Trading*, 10 GA. ST. U. L. REV. 297, 301 (1994) ("What makes markets more or less efficient is the *speed* with which they adjust to changes in the information set." (alteration in original)).

[13] *See* Robert E. Hall, *Struggling to Understand the Stock Market*, 91 AM. ECON. REV. (PAPERS & PROC.) 1, 11 (2001) (describing cash-flow growth as the "key factor to understanding movements in the stock market" and stating that it is illogical to deem "astronomical price/earnings ratios as plainly irrational without investigating the prospects for growth in future earnings"). Professor Hall notes, for instance, that the stock market values of companies that exploit new technologies have been "phenomenal," and that the stock market values of these companies "swing wildly." *Id.*

[14] *See id.* at 2 (stressing that "rational beliefs about probabilities are only loosely contained in a nonstationary world," and that those who believe new principles govern the economy will rely not on historical data, but rather their own thoughts about what might happen in the future, to determine their beliefs about the future).

[15] *See id.* at 4 ("[O]ne person values another's opinion in assessing probabilities in a nonstationary environment."); Mark Rubinstein, *Rational Markets: Yes or No? The Affirmative Case*, FIN. ANALYSTS J., May–June 2001, at 15, 23 (explaining the effect of endogenous uncertainty about others' valuations on stock prices).

predictions.[16] Because we cannot know in the present what the future realization of the cash flows will be, we cannot know the "correct" price.[17] The price is a consensus estimate of the present value of the future cash flows, and consensus estimates are prone to change.[18]

Another important factor affecting the price of the security is the riskiness of the expected future cash flows.[19] Riskier cash flows are discounted at higher rates of return than less risky cash flows.[20] Again, the riskiness of the cash flows, like the expected growth of the cash flows, is highly subjective and could be quickly and substantially revised based on changes in perceptions about the future of the economy, and again subject to feedback.[21]

Prices in active, deep, liquid financial markets are based upon the equilibrium that clears the market—the amount that people sell must equal the amount that people buy.[22] If there is a desire to sell more than will be bought at a given price, then there is pressure for the price to drop.[23] If there is a desire to purchase more than are available for sale, then there will be pressure for the price to rise.[24] The rate at which the price can change subject

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[16] *See* Mark Klock, *Improving the Culture of Ethical Behavior in the Financial Sector: Time to Expressly Provide for Private Enforcement Against Aiders and Abettors of Securities Fraud*, 116 PENN ST. L. REV. 437, 472–73 (2011) (providing an example of people revising their estimates of future events and outcomes on learning that other people have different estimates).

[17] *See* BURTON G. MALKIEL, A RANDOM WALK DOWN WALL STREET 103 (7th ed. 1999) (explaining that we cannot confirm the accuracy of forecasts for the future in the present).

[18] *See* Rubinstein, *supra* note 15, at 26 ("[P]rice changes derive from changing beliefs about the demand curves of other investors.").

[19] *See* MALKIEL, *supra* note 17, at 101 ("Risk also affects the valuation of a stock.").

[20] *See id.* ("The more respectable a stock is—that is, the less risk it has—the higher its quality.").

[21] *See id.* at 106 ("[T]he mathematical precision of the . . . value formulas is based on treacherous ground: forecasting the future. The major fundamentals for these calculations are never known with certainty; they are only relatively crude estimates—perhaps one should say guesses—about what might happen in the future.").

[22] WALTER NICHOLSON & CHRISTOPHER SNYDER, INTERMEDIATE MICROECONOMICS AND ITS APPLICATION 15 (10th ed. 2006).

[23] EDWIN MANSFIELD, MICROECONOMICS: THEORY/APPLICATIONS 33 (6th ed. 1988).

[24] *Id.*

to a change in conditions depends on the depth of the market or the steepness of the supply and demand curves.[25]

The depth of the market refers to the quantity of shares available at or close to the currently quoted price.[26] If a large number of shares are available for sale at the posted quote, then the market is deep, meaning the supply curve is relatively flat in the relevant range and several buy orders will not affect the price.[27] If a relatively small quantity of shares are available at the current quote and additional shares are only available at higher prices, then the supply curve is relatively steep, and several buy orders in succession could cause a large sudden price change.[28] There is nothing irrational about the price change; it is simply the way markets work.[29]

As another point of reference for understanding the conditional nature of asset prices, consider the concept of statistical significance, which is commonly used to describe the strength of conclusions based on statistical analysis.[30] The statistical significance of a result refers to the probability of incorrectly rejecting a null hypothesis which is true, conditional on the data that has been collected.[31] If the data is discarded and new data is drawn, or if new data is used to supplement the original data, the

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[25] *See* John C. Groth & David A. Dubofsky, *The Liquidity Factor*, *in* THE NASDAQ HANDBOOK 327, 333 (Douglas F. Parrillo et al. eds., 1992) (explaining that market depth refers to the ability to trade a larger number of shares at the posted prices).

[26] *Id.*

[27] *See* Jean Folger, *Trading with Market Depth*, FUTURES MAG. (May 1, 2014), http://www.futuresmag.com/2014/04/30/trading-market-depth?page=1 ("Symbols that trade with good depth . . . are relatively liquid, meaning that large orders will not affect price as much . . . .").

[28] *See generally* WILLIAM F. SHARPE ET AL., INVESTMENTS 86–89 (6th ed. 1999) (describing the construction of the demand and supply curves for stocks).

[29] *See, e.g.*, Rubinstein, *supra* note 15, at 26 (explaining the 1987 stock market crash).

[30] *See* Daniel L. Rubinfeld, *Econometrics in the Courtroom*, 85 COLUM. L. REV. 1048, 1050 (1985) ("Courts often accept conventional practices of the statistics profession without considering whether such practices are valid in the context of litigation. The most apparent of these practices has been the determination of a statistical level of confidence associated with the burden of persuasion set by a court . . . .").

[31] *See* JOHN H. MUELLER ET AL., STATISTICAL REASONING IN SOCIOLOGY 400 (2d ed. 1970) ("The probability of rejecting the null hypothesis when it is true is called the 'level of significance.' ").

statistical significance will likely change.[32] It is the same with asset prices. As our information changes, including very subjective assessments of other peoples' expectations of the future, our conditional estimates of the discounted value of uncertain future cash flows (prices) will change as well.[33] To further complicate matters, there is no reason to believe that the market prices increase or decrease in risk at a fixed rate over time.[34] Time-varying risk premiums will add an additional cause of fluctuation in security prices that cannot be attributed to irrational investor behavior.[35]

The point of this introductory explanation about the pricing of securities is to inform readers that there is nothing inherently irrational in price volatility, and that volatility in prices does not imply that prices are usually wrong.[36] Rather, it implies that information is constantly changing and that market participants are constantly revising their beliefs about the future.[37]

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[32] *See* Klock, *supra* note 9, at 1016 (explaining that the value of a statistic depends on random draws, and hence statistics are also random variables).

[33] *See* Rubinstein, *supra* note 15, at 26 (explaining that the sharp drop in prices during a crash revealed the previously unknown magnitude of pessimists' pessimism, causing the optimists to revise their forecasts and stop buying stocks).

[34] *See* Klock, *supra* note 7, at 215 ("Most economists consider the anomalies to be evidence of time-varying risk premiums rather than inefficiency.").

[35] For further elaboration, see JOHN Y. CAMPBELL ET AL., THE ECONOMETRICS OF FINANCIAL MARKETS 80 (1997). The authors explain:

> Recent econometric advances and empirical evidence seem to suggest that financial asset returns are predictable to some degree. Thirty years ago this would have been tantamount to an outright rejection of market efficiency. However, modern financial economics teaches us that other, perfectly rational, factors may account for such predictability. The fine structure of securities markets and frictions in the trading process can generate predictability. Time-varying expected returns due to changing business conditions can generate predictability. A certain degree of predictability may be necessary to reward investors for bearing certain dynamic risks.

[36] *See* Hall, *supra* note 13, at 4 ("Modern financial economics speaks of the puzzle of time-varying risk premiums, not a clear finding of irrationality.").

[37] *See id.* ("[O]ne person values another's opinion in assessing probabilities in a nonstationary environment.").

II. THE FRAMEWORK OF U.S. SECURITIES LAWS

A. A PHILOSOPHY OF FULL AND FAIR DISCLOSURE

The cornerstones of our federal securities laws are the Securities Act of 1933 (Securities Act)[38] and the Securities Exchange Act of 1934 (Exchange Act).[39] The Securities Act regulates the offers and sales of securities for the purpose of raising capital.[40] The Exchange Act regulates secondary market transactions in the public market.[41] In drafting the securities laws, Congress rejected the idea of paternalistic merit regulation whereby issuers would have to obtain government approval based upon the merits of their offering.[42] Instead, Congress adopted a philosophy of full and fair disclosure.[43] Issuers are required to disclose all material facts before an offer or sale.[44] Even inadvertent omission of a material fact results in strict liability for any losses suffered by investors.[45]

One especially important element of the legislation is the catch-all anti-fraud provision of the Exchange Act. Section 10(b) makes it unlawful "[t]o use or employ, in connection with the purchase or sale of any security . . . any manipulative or deceptive device or contrivance."[46] Courts have long held that section 10(b) grants an

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[38] Securities Act of 1933, 15 U.S.C. §§ 77k–77aa (2012).

[39] Securities Exchange Act of 1934, 15 U.S.C. §§ 78a–78pp (2012).

[40] *See* Klock, *supra* note 11, at 82 n.97 ("The Securities Act of 1933 deters fraud in the new issue market by creating strict liability for less than complete and honest disclosure.").

[41] *See* JOHN C. COFFEE, JR. & HILLARY A. SALE, SECURITIES REGULATION 56–57 (11th ed. 2009) (providing an overview of the Securities Exchange Act).

[42] *See* MARC I. STEINBERG, UNDERSTANDING SECURITIES LAW 1 (5th ed. 2009) ("Generally, in enacting these Acts, Congress declined to adopt a merit approach. Rather, irrespective of the value or fairness of a transaction or other corporate action, the investor may decide for him or herself *after* receiving disclosure of pertinent information.").

[43] *See id.* ("Undoubtedly, the central focus of the federal securities laws is that of disclosure, thereby providing shareholders and the marketplace with sufficient information to make relevant decisions and to be apprised of significant developments.").

[44] *See* Mark Klock, *A Modest Proposal to Rename the FDA: Apologists for Carcinogens, Teratogens, and Adulterated Drugs*, 36 ARIZ. ST. L.J. 1161, 1182 (2004) ("The Securities Act requires corporations to fully, fairly, and publicly disclose all information which a reasonably prudent investor would consider material before it can raise capital from the public.").

[45] *See* Securities Act of 1933 § 11(a), 15 U.S.C. § 77k (2012) (providing liability for omission of a material fact).

[46] Securities Exchange Act of 1934 § 10(b), 15 U.S.C. § 78j (2012).

implied private right of action to victims of securities fraud against perpetrators of the fraud.[47] The securities laws' general requirement of full and fair disclosure coupled with the private cause of action creates an army of private attorneys general to police the financial markets for fraud.[48] This framework has been and can be a powerful incentive against bad conduct by financial market participants.[49]

The private right of action against violators of section 10(b) was recognized by the Supreme Court in 1971[50] and 1972.[51] The Court's recognition of the private right under section 10(b) was consistent with its earlier 1964 declaration that "[p]rivate enforcement of the proxy rules provides a necessary supplement to Commission action."[52] During this era of the Court's securities jurisprudence, there were repeated statements that the securities laws were to be given an expansive reading to foster Congress's intent to protect the integrity of the markets and investors.[53]

From a policy perspective, there are many arguments for providing strong protection to investors and thoroughly policing the market for fraud. First, since securities convey an ownership right in something else, it is important for investors to have good and complete information about exactly what that something is and how much of it they own.[54] Second, since securities are not used up or consumed, they are treated as a source of value and

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[47] *See* Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2407 (2014) ("[W]e have long recognized an implied private cause of action to enforce [section 10(b)] and its implementing regulation.").

[48] *See* Bateman Eichler, Hill Richards, Inc. v. Berner, 472 U.S. 299, 310 (1985) (stating that private actions provide both an effective enforcement weapon and a necessary supplement to government action).

[49] *See* Michael A. Perino, *Did the Private Securities Litigation Reform Act Work?*, 2003 U. ILL. L. REV. 913, 918 ("Giving private attorneys a financial stake in the outcome of a case effectively deputizes them to search out fraud cases that the resource-constrained SEC may be unable to bring.").

[50] Superintendent of Ins. v. Bankers Life & Cas. Co., 404 U.S. 6, 13 n.9 (1971).

[51] Affiliated Ute Citizens v. United States, 406 U.S. 128, 150–54 (1972).

[52] J.I. Case Co. v. Borak, 377 U.S. 426, 432 (1964).

[53] *See Bateman Eichler*, 472 U.S. at 310 ("[W]e have eschewed rigid common-law barriers in construing the securities laws."); Herman & MacLean v. Huddleston, 459 U.S. 375, 386 (1983) ("A cumulative construction of the securities laws also furthers their broad remedial purposes.").

[54] THOMAS LEE HAZEN, THE LAW OF SECURITIES REGULATION 10 (rev. 5th ed. 2006).

traded in secondary market transactions like a foreign currency.[55] It is therefore important to have a regular flow of information about the entity represented by the security.[56] Third, the complexity of securities makes the market attractive to unscrupulous individuals who would attempt to scam investors.[57] Finally, the securities business has developed a sizable industry of large financial institutions that should be regulated to ensure that those with superior experience and information do not take undue advantage of their clientele.[58] Strong laws that protect investors against fraud and allow investors to recover when they have been defrauded will promote confidence in the integrity of the market.[59] This increased confidence will encourage greater levels of investment, which will lower the cost of raising capital for corporations and spur increased investment in real economic activity.[60]

The basic structure of our securities laws has been summarized well by a leading securities law scholar:

> Undoubtedly, the central focus of the federal securities laws is that of disclosure, thereby providing shareholders and the marketplace with sufficient information to make relevant decisions and to be apprised of significant developments. Congress thus sought to promote investor protection and the maintenance of fair and orderly markets. Generally, in enacting these Acts, Congress declined to adopt a merit approach. Rather, irrespective of the value or fairness of a transaction or other corporate action, the

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[55] *Id.*

[56] *Id.*

[57] *Id.*

[58] *Id.*

[59] *See* Klock, *supra* note 16, at 441–42 (describing "the broad remedial intent of the securities laws to proscribe bad behavior in financial markets and promote confidence and integrity in the markets").

[60] *See* Klock, *supra* note 12, at 334–35 ("If insiders are permitted to trade freely on their inside information . . . . outsiders will respond by lowering their investments in securities, and the cost of capital which firms will have to pay to induce investors to part with their money will rise.").

investor may decide for him or herself *after* receiving disclosure of pertinent information.[61]

B. THE EROSION OF INVESTOR PROTECTION

Unfortunately for investors, the Court became hostile to securities lawsuits and began to chip away at investor remedies.[62] In *Blue Chip Stamps v. Manor Drug Stores*,[63] the Court limited standing for securities plaintiffs.[64] There, the Court held that only purchasers and sellers could maintain an action—individuals that forgo a profitable investment opportunity because of misinformation do not have standing.[65] In *Ernst & Ernst v. Hochfelder*,[66] the Court required a high level of scienter.[67] In this decision, the plaintiffs alleged that an auditor failed to find and report fraud because the auditing process was improper and argued for liability based on negligent nonfeasance.[68] The Court held that a plaintiff is required to plead and prove an "intent to deceive, manipulate, or defraud."[69]

In *Chiarella v. United States*,[70] the Court held that a printer trading on inside information could not be liable under 10(b)'s catch-all fraud provision without a fiduciary duty to disclose.[71] Previously, the Securities and Exchange Commission (the Commission) had ruled that the prohibition on insider trading

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[61] STEINBERG, *supra* note 42, at 1.

[62] *See* Douglas M. Branson, *Running the Gauntlet: A Description of the Arduous, and Now Often Fatal, Journey for Plaintiffs in Federal Securities Law Actions*, 65 U. CIN. L. REV. 3, 7 (1996) (describing "an open anti-litigation bias at the Supreme Court level" towards securities plaintiffs).

[63] 421 U.S. 723 (1975); *id.* at 754–55.

[64] *Id.* at 754–55.

[65] *Id.*

[66] 425 U.S. 185 (1976).

[67] *See id.* at 214 ("When a statute speaks so specifically in terms of manipulation and deception, and of implementing devices and contrivances—the commonly understood terminology of intentional wrongdoing—and when its history reflects no more expansive intent, we are quite unwilling to extend the scope of the statute to negligent conduct.").

[68] *Id.* at 190.

[69] *Id.* at 193.

[70] 445 U.S. 222 (1980).

[71] *Id.* at 232–33.

applied to any person in possession of inside information.[72] Additionally, the Second Circuit stated, "[A]nyone in possession of material inside information must either disclose it to the investing public" or refrain from trading.[73] But the *Chiarella* court rejected this rule and held that faulty jury instructions were given because fraud can only exist when one has a duty to disclose.[74] Accordingly, the Court held that "a duty to disclose under § 10(b) does not arise from the mere possession of nonpublic market information."[75]

In one of its most controversial decisions, the Court in *Central Bank of Denver v. First Interstate Bank of Denver*[76] overruled every circuit court to have decided the issue by holding that a private cause of action did not exist against market participants who aided and abetted a fraud under Section 10(b).[77] Accountants, auditors, and lawyers were off the hook. According to one scholar:

> The Burger and Rehnquist Courts began a process of retrenchment that was extraordinary. In forty federal securities law decisions, the Court decided thirty-two cases for defendants and, in almost every one, significantly narrowed the reach of federal securities laws.
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> . . . .
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> The activity in securities law at the United States Supreme Court level reflects one of the most pronounced jurisprudential shifts ever.[78]

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[72] *See* Cady, Roberts & Co., 40 S.E.C. 907, 911 (1961) (applying the anti-fraud rules to "any person").

[73] United States v. Chiarella, 588 F.2d 1358, 1364 (2d Cir. 1978) (quoting SEC v. Tex. Gulf Sulphur Co., 401 F.2d 833, 848 (2d Cir. 1968)), *rev'd*, 445 U.S. 222 (1980).

[74] *Chiarella*, 445 U.S. at 236.

[75] *Id.* at 235.

[76] 511 U.S. 164 (1994).

[77] *Id.* at 191; *see also* Marc I. Steinberg, *The Ramifications of Recent U.S. Supreme Court Decisions on Federal and State Securities Regulation*, 70 NOTRE DAME L. REV. 489, 489 (1995) ("The Court's decision swept away decades of lower court precedent that nearly universally recognized the propriety of such secondary liability under the statute and rule.").

[78] Branson, *supra* note 62, at 6–7 (footnote omitted).

Central Bank involved a situation in which a bank was a trustee monitoring a bond covenant that required the appraised value of real estate holdings to be at least worth 160% of the outstanding bond debt.[79] The real estate market fell before the developer could issue more bonds, and the developer asked the trustee to postpone updating their appraisal.[80] New bonds were issued and the developer defaulted, resulting in a claim against the trustee for assisting the fraud.[81] As discussed in a prior article, the decision shocked the securities bar due to its incredibly overreaching nature.[82]

Justice Stevens, joined by three colleagues, wrote a sharp dissent. He stated:

> In *hundreds* of judicial and administrative proceedings in every Circuit in the federal system, the courts and the SEC have concluded that aiders and abettors are subject to liability under § 10(b) and Rule 10b-5. While we have reserved decision on the legitimacy of the theory in two cases that did not present it, all 11 Courts of Appeals to have considered the question have recognized a private cause of action against aiders and abettors under § 10(b) and Rule 10b-5. The early aiding and abetting decisions relied upon principles borrowed from tort law; in those cases, judges closer to the times and climate of the 73d Congress than we concluded that holding aiders and abettors liable was consonant with the Exchange Act's purpose to strengthen the antifraud remedies of the common law. One described the aiding and abetting theory, grounded in "general principles of tort law," as a "logical and natural complement" to the private

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[79] *Cent. Bank*, 511 U.S. at 167.

[80] *Id.* at 167–68.

[81] *Id.* at 168.

[82] *See* Klock, *supra* note 16, at 450–51 ("The decision stunned the securities bar because it was so overreaching it addressed questions that the petitioner did not even put before the court. Even the petitioner assumed that a private cause of action for aiding and abetting securities fraud existed. The petitioner merely challenged whether the action could be applied in a case of recklessness or negligence without actual intent." (footnotes omitted)).

> § 10(b) action that furthered the Exchange Act's purpose of "creation and maintenance of a post-issuance securities market that is free from fraudulent practices."[83]

Yet another example of hostility towards private enforcement actions is given by *Stoneridge Investment Partners, LLC v. Scientific-Atlanta, Inc.*[84] Stoneridge was a defrauded investment company that lost money on the stock of Charter Communications, a large cable company.[85] Charter inflated its earnings by creating fictitious revenue in wash transactions with vendors.[86] The vendors assisted Charter in fooling its auditors by backdating some transaction agreements so the washout nature of the transactions would not be easy to spot.[87] Stoneridge sought liability against the vendors on the theory that they had participated in a scheme to defraud investors.[88] The Court held that the vendors could not be liable under the securities laws, however, because the vendors were not involved in the preparation of the false financial statements that were disseminated in the market.[89] The Court succinctly stated its justification for immunizing the vendors who participated in the fraudulent wash transactions used to prepare the financial statements: "We conclude the implied [private] right of action does not reach the customer/supplier companies because the investors did not rely upon their statements or representations."[90]

The hostility toward private remedies for defrauded investors has largely continued since the late Justice Rehnquist passed away. For example, in *Janus Capital Group, Inc. v. First Derivative Traders*,[91] the Court callously determined that Janus

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[83] *Cent. Bank*, 511 U.S. at 192–93 (Stevens, J., dissenting) (footnotes omitted) (citation omitted) (quoting Brennan v. Midwestern United Life Ins. Co., 259 F. Supp. 673, 680 (N.D. Ind. 1966)).

[84] 552 U.S. 148 (2008).

[85] *Id.* at 152–53.

[86] *Id.* at 154–55.

[87] *Id.*

[88] *Id.* at 155.

[89] *Id.* at 159–61.

[90] *Id.* at 153.

[91] 131 S. Ct. 2296 (2011).

Capital Management LLC (JCM), a mutual investment adviser, could not be held liable in a private action under 10b-5 for false statements included in its client mutual funds' prospectuses because JCM "did not make the statements in the prospectuses."[92]

C. THE ADOPTION OF FRAUD ON THE MARKET

Of course, even a Court that is hostile to investors will occasionally rule in their favor.[93] Such was the situation in *Basic Inc. v. Levinson*,[94] which assisted investors in meeting their burden of establishing reliance on material misstatements and omissions for the purpose of certifying a class action.[95] Prior to *Basic*, the Court had held that reliance on a material misstatement is an essential element of a Rule 10b-5 (a Commission rule adopted under authority of section 10(b)) cause of action.[96] Proving that every potential member of a class knew of and relied on a specific misstatement would present insurmountable procedural problems that would render a class action unavailable.[97] Without the availability of the class action, there would be little incentive to police fraud in the private sector.[98]

Two Commission attorneys have noted that because the costs of bringing individual private actions can ultimately discourage

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[92] *Id.* at 2299 (citation omitted).

[93] *Cf.* Branson, *supra* note 62, at 6 ("In one stretch, the Burger Court decided fifteen of sixteen consecutive securities cases for defendants and defense interests.").

[94] 485 U.S. 224 (1988).

[95] *See id.* at 248 ("Any showing that severs the link between the alleged misrepresentation and the price received (or paid) by the plaintiff, on his decision to trade at a fair price, will be sufficient to rebut the presumption of reliance.").

[96] *See* Ernst & Ernst v. Hochfelder, 425 U.S. 185, 206 (1976) ("[T]he burden is on the plaintiff to show the violation or the fact that the statement was false or misleading, and that he relied thereon to his damage."); *id.* at 212 (noting that Rule 10b-5 was adopted pursuant to the Commission's authority granted under § 10(b)).

[97] *See Basic*, 485 U.S. at 242 ("Requiring proof of individualized reliance from each member of the proposed plaintiff class effectively would have prevented respondents from proceeding with a class action, since individual issues then would have overwhelmed the common ones.").

[98] *See* Mark Klock, *Lighthouse or Hidden Reef? Navigating the Fiduciary Duty of Delaware Corporations' Directors in the Wake of* Malone, 6 STAN. J.L. BUS. & FIN. 1, 37 (2000) ("Without a mechanism to achieve such collective action, enforcement of these underlying policies would suffer.").

defrauded investors from attempting to do so, "courts have long noted that the . . . class action may well be the appropriate means for expeditious litigation of the issues."[99] Class actions can be helpful for defrauded investors because, while "no one person may have been damaged to a degree which would have induced him to institute litigation solely on his own behalf," class actions provide a tool for when a large number of investors have been injured.[100]

Thus, class action lawsuits further federal securities law policies by providing an inducement to private policing of fraud.[101] Professors Coffee and Schwartz assert that "[p]laintiff's counsel is the engine that drives the derivative action. For the action to constitute an effective deterrent, counsel must be compensated on a basis at least commensurate with that applicable to class actions and other forms of contingent-fee litigation."[102] Professor Painter further argues that efforts to erect obstacles to securities class actions impede both the recovery of injured investors and the deterrence of bad behavior.[103]

In order to win a claim based on section 10(b), plaintiffs must establish reliance on a misstatement or omission.[104] The plaintiff does not always have to affirmatively prove the reliance, however.[105] In the case of an omission of a material fact that the seller had an obligation to disclose, the plaintiff is given a rebuttable presumption of reliance.[106] In the case of an actual

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[99] Richard H. Walker & J. Gordon Seymour, *Recent Judicial and Legislative Developments Affecting the Private Securities Fraud Class Action*, 40 ARIZ. L. REV. 1003, 1005 (1998) (quoting Green v. Wolf Corp., 406 F.2d 291, 296 (2d Cir. 1968)) (internal quotation marks omitted).

[100] *Id.*

[101] *See* James Bohn & Stephen Choi, *Fraud in the New-Issues Market: Empirical Evidence on Securities Class Actions*, 144 U. PA. L. REV. 903, 924 (1996) ("Securities-fraud class actions, on the other hand, may serve a vital role in policing fraud in the securities markets.").

[102] John C. Coffee, Jr. & Donald E. Schwartz, *The Survival of the Derivative Suit: An Evaluation and a Proposal for Legislative Reform*, 81 COLUM. L. REV. 261, 316 (1981).

[103] *See* Richard W. Painter, *Responding to a False Alarm: Federal Preemption of State Securities Fraud Causes of Action*, 84 CORNELL L. REV. 1, 3 (1998) (noting that most plaintiffs find litigation outside of class actions to be uneconomical).

[104] *See* STEINBERG, *supra* note 42, at 260 ("Proof of reliance normally is required to help prove the causal connection between the defendant's wrongdoing and the complainant's loss.").

[105] *See id.* ("Positive proof of reliance has not been demanded of the plaintiff where unnecessary to show causation.").

[106] *See id.* ("[T]he complainant enjoys a presumption of reliance which the defendant can rebut . . . .").

misstatement, however, the plaintiff may be required to affirmatively establish reliance.[107] In *Huddleston v. Herman & MacLean*,[108] the Fifth Circuit gave its analysis of the reliance requirement:

> Reliance and causation are related concepts. In the common law deceit action from which the Rule 10b-5 claim is derived, it was necessary for the plaintiff to show reliance on the defendant's fraudulent representations as a prerequisite to recovery. Establishing reliance, however, merely proves that the plaintiff was induced to act by the defendant's conduct. It is a nonsequitur to conclude that the representation that induced action necessarily caused the consequences of that action. As we have seen, the general statement of the elements of recovery under Rule 10b-5 requires proof both that the plaintiff relied on the misstatement and that the misstatement was the cause of his loss.
>
> In *Affiliated Ute Citizens of Utah v. United States*, the Supreme Court held that in some circumstances affirmative proof of reliance is not necessary. . . .
>
> While *Affiliated Ute* relieves the investor in certain circumstances of the necessity of proving affirmatively that he relied on a prospectus or other representation, it does not eliminate the reliance element from the Rule 10b-5 case altogether. In *Rifkin v. Crow*, we restated our understanding of the *Affiliated Ute* rationale as it relates to proof of reliance in a Rule 10b-5 action:
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> > [W]here a 10b-5 action alleges defendant made positive misrepresentations of material information, proof of reliance by the plaintiff upon the misrepresentation is required. Upon an absence of proof on the issue, plaintiff loses. On

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[107] *See id.* at 261 (explaining that courts apply the presumption in cases involving primarily a failure to disclose rather than primarily a misstatement).

[108] 640 F.2d 534 (5th Cir. 1981), *rev'd on other grounds*, 459 U.S. 375 (1983).

> the other hand, where a plaintiff alleges deception by defendant's nondisclosure of material information, the *Ute* presumption obviates the need for plaintiff to prove actual reliance on the omitted information. Upon a failure of proof on the issue, defendant loses. But this presumption of reliance in nondisclosure cases is not conclusive. If defendant can prove that plaintiff did not rely, that is, that plaintiff's decision would not have been affected even if defendant had disclosed the omitted facts, then plaintiff's recovery is barred.

Thus, reliance is an issue in *all* Rule 10b-5 cases. The difference between misrepresentation and non-disclosure cases relates only to whether proof of reliance is prerequisite to recovery or whether proof of non-reliance is an affirmative defense.

It is, therefore, necessary to characterize the facts in a Rule 10b-5 case as involving either primarily a failure to disclose, implicating the first or third subparagraph of the Rule and invoking the *Affiliated Ute* presumption of reliance, or, on the other hand, primarily a misstatement or failure to state a fact necessary to make those statements made not misleading, classified under the second subparagraph of the Rule and as to which no presumption of reliance is applicable. This case, involving alleged misstatements and omissions in a prospectus published pursuant to a public offering, cannot properly be characterized as an omissions case of the type for which the *Affiliated Ute* presumption was fashioned. The defendants did not "stand mute" in the face of a duty to disclose as did the defendants in *Affiliated Ute*. They undertook instead to disclose relevant information in an offering statement now alleged to contain certain misstatements of fact and to fail to contain other facts necessary to make the statements made, in light of the circumstances, not

> misleading. This is not a case in which difficulties of proof of reliance require the application of the *Affiliated Ute* presumption. Because the plaintiffs were not entitled to a presumption of reliance, a jury finding that the plaintiffs relied upon the misstatements and omissions in the prospectus was essential to the plaintiffs' recovery.[109]

This strict standard requiring proof of reliance for misstatements and half-truths would present serious problems for section 10(b) class actions.[110] Fortunately, the Supreme Court affirmed an alternative basis for providing a presumption of reliance for misstatements introduced into an efficient securities market in *Basic Inc. v. Levinson*.[111]

In *Basic*, Basic Incorporated, a publicly traded company, was in merger negotiations, and rumors in the market were causing a high level of activity in trading of the company's stock.[112] The president of the corporation issued a statement that was reported in the press saying that he knew of no reason for the unusual activity in the stock and that the company was not involved in any merger negotiations.[113] The statement was false, and investors who sold the stock after the statement brought a complaint under section 10(b) alleging "that they were injured by selling [the company's] shares at artificially depressed prices in a market affected by petitioners' misleading statements and in reliance thereon."[114]

Although the District Court granted the class certification based on a rebuttable presumption of reliance, it initially granted

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[109] *Id.* at 547–48 (citations omitted) (citing Affiliated Ute Citizens v. United States, 406 U.S. 128 (1972)) (citing Rifkin v. Crow, 574 F.2d 256 (5th Cir. 1978)).

[110] *See* STEINBERG, *supra* note 42, at 262 ("If the Court had required positive proof of individualized reliance from each plaintiff, individual issues may have predominated over the common ones, thereby impeding certification of class actions in this context.").

[111] *See* 485 U.S. 224, 247 (1988) ("An 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 market price, an investor's reliance on any public material misrepresentations, therefore, may be presumed for purposes of a Rule 10b-5 action.").

[112] *Id.* at 227 & n.4.

[113] *Id.* at 227 n.4.

[114] *Id.* at 228.

summary judgment to the defendants on the theory that the merger negotiations were not material because there was no certainty that a merger agreement would be reached.[115] The Sixth Circuit upheld the rebuttable presumption of reliance but reversed the decision on materiality and remanded the dismissal.[116] The Supreme Court granted certiorari to resolve the conflict among the Courts of Appeals regarding the fraud-on-the-market theory (FOMT) doctrine.[117]

In affirming the FOMT doctrine, the Court accepted the financial economists' consensus that in an efficient market, prices reflect all material information.[118] False material statements that are not known to be false and are injected into that market by those in a position to know their accuracy, such as a company president, will have an impact on the price in the market.[119] Investors trading in the market rely on the integrity of the information entering the market.[120] Quoting a lower court, the Supreme Court wrote:

> In face-to-face transactions, the inquiry into an investor's reliance upon information is into the subjective pricing of that information by that investor. With the presence of a market, the market is interposed between seller and buyer and, ideally, transmits information to the investor in the processed

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[115] *Id.* at 228–29.

[116] *Id.* at 229.

[117] *Id.* at 229–30.

[118] *See id.* at 241–42 ("The fraud on the market theory is based on the hypothesis that, in an open and developed securities market, the price of a company's stock is determined by the available material information regarding the company and its business. . . . Misleading statements will therefore defraud purchasers of stock even if the purchasers do not directly rely on the misstatements. . . . The causal connection between the defendants' fraud and the plaintiffs' purchase of stock in such a case is no less significant than in a case of direct reliance on misrepresentations." (alterations in original) (quoting Peil v. Speiser, 806 F.2d 1154, 1160–61 (3d Cir. 1986)) (internal quotation marks omitted)).

[119] *See id.* at 244 ("In an open and developed market, the dissemination of material misrepresentations or withholding of material information typically affects the price of the stock, and purchasers generally rely on the price of the stock as a reflection of its value." (quoting *Peil*, 806 F.2d at 1161) (internal quotation marks omitted)).

[120] *See id.* at 246–47 ("[I]t is hard to imagine that there ever is a buyer or seller who does not rely on market integrity. Who would knowingly roll the dice in a crooked crap game?" (quoting Schlanger v. Four-Phase Systems, Inc., 555 F. Supp. 535, 538 (S.D.N.Y. 1982))).

> form of a market price. Thus the market is performing a substantial part of the valuation process performed by the investor in a face-to-face transaction. The market is acting as the 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.[121]

In taking its conclusion one step further, the Court suggested that it really is not important whether the economic theory underlying the efficient market is an exactly correct representation of reality.[122] Rather, the Court stated, it is only necessary "to believe that market professionals generally consider most publicly announced material statements about companies, thereby affecting stock prices."[123]

Therefore, if market professionals consider material public announcements, such announcements affect stock prices, and investors indirectly rely on them. We can conclude that actively traded stocks on the New York Stock Exchange (NYSE) are trading in an efficient market which incorporates all public statements about a corporation issued by the corporation, and that investors are entitled to rely on the accuracy of the market price, and hence the accuracy of the information disseminated in the market.[124] This does not seem like a policy that should provoke so much controversy.

III. HOSTILITY TOWARD EFFICIENT MARKET THEORY

Many relatively liberal securities law professors who favor government regulation to protect investors and promote confidence

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[121] *Id.* at 244 (quoting *In re* LTV Secs. Litig., 88 F.R.D. 134, 143 (N.D. Tex. 1980)) (internal quotation marks omitted).

[122] *See id.* at 245 n.24 ("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.").

[123] *Id.*

[124] *See* IVO WELCH, CORPORATE FINANCE: AN INTRODUCTION 350 (Donna Battista et al. eds., 2009) ("Almost all financial economists, regardless of camp, believe in basic market efficiency for large markets and liquid securities. No respectable economist believes that it is easy to get very rich trading on easily available information.").

in the integrity of financial markets display hostility towards the efficient market hypothesis.[125] Leading casebooks written by Professors John Coffee, Jr. and Hillary Sale; Professors Lawrence Mitchell, Lawrence Cunningham, Jeffrey Haas, and Lewis Solomon; and others include material challenging the viability of the efficient market hypothesis.[126] Professors Coffee and Sale conclude their discussion of market efficiency by stating, "All told, the evidence produced by behavior theorists has probably convinced most (but not all) researchers that stock price movements cannot be explained exclusively by neo-classical finance theory and that there is a social-psychological dimension to any full understanding of stock price behavior."[127]

Professor Lawrence Cunningham asserts that "[market efficiency] has held onto breath even as research steadily reveals its fatal infirmities."[128] He later concludes, "[S]tock prices systematically deviate from values. The story of the EMH turns out to be like a fairy tale in the sense that it would be wonderful if it were true."[129]

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[125] *See, e.g.*, Lawrence A. Cunningham, *From Random Walks to Chaotic Crashes: The Linear Genealogy of the Efficient Capital Market Hypothesis*, 62 GEO. WASH. L. REV. 546, 551 (1994) (asserting that markets are not efficient and that efficiency should not be relied on for policy formulation); Jeffrey N. Gordon & Lewis A. Kornhauser, *Efficient Markets, Costly Information, and Securities Research*, 60 N.Y.U. L. REV. 761, 764–65 (1985) (criticizing the efficient capital market hypothesis (ECMH)); Frank Partnoy, *Why Markets Crash and What Law Can Do About It*, 61 U. PITT. L. REV. 741, 747 (2000) (stating that "crashes are inconsistent with the theory of efficient markets"); Lynn A. Stout, *How Efficient Markets Undervalue Stocks: CAPM and ECMH Under Conditions of Uncertainty and Disagreement*, 19 CARDOZO L. REV. 475, 475–76 (1997) (arguing that capital markets are not efficient); William K.S. Wang, *Some Arguments That the Stock Market Is Not Efficient*, 19 U.C. DAVIS L. REV. 341, 341 (1986) (listing anomalies which are inconsistent with the ECMH); Nathaniel Carden, Comment, *Implications of the Private Securities Litigation Reform Act of 1995 for Judicial Presumptions of Market Efficiency*, 65 U. CHI. L. REV. 879, 880–81 (1998) ("[C]ourts should reassess the several common law doctrines, such as fraud-on-the-market, that rest on the ECMH.").

[126] *See* COFFEE & SALE, *supra* note 41, at 219–33 (containing material critical of EMT); LAWRENCE E. MITCHELL ET AL., CORPORATE FINANCE AND GOVERNANCE 263–75 (3d ed. 2006) (suggesting markets are not efficient and incorporating psychology rather than economics to explain market behavior).

[127] COFFEE & SALE, *supra* note 41, at 233.

[128] Lawrence A. Cunningham, *Behavioral Finance and Investor Governance*, 59 WASH. & LEE L. REV. 767, 770 (2002).

[129] *Id.* at 786.

This hostility is deep and extensive. This Article provides several illustrative examples below. Frederick Dunbar and Dana Heller assert that "[a]t the time of [EMT's] endorsement by the *Basic* Court's majority, economists were beginning to find anomalies in securities prices that appeared to be inconsistent with the logical implications of the efficient market hypothesis."[130] Professor James Cox wrote, "We can expect that not all public information will be impounded in a security's price with the same alacrity, or perhaps with any quickness at all."[131] Professor Jonathan Macey used the case of Enron's stock price to argue that the market is not efficient and stated that "it is not obvious what *relevance*, if any, the [efficient market] theory still holds."[132] Professor Donald Langevoort declared, "Doubts about the strength and pervasiveness of market efficiency are much greater today than they were in the mid-1980s."[133] Professor Lynn Stout goes a step further than other hostile commentators and argues not only that the stock market is not inherently efficient, but also that policies to promote market efficiency are misguided.[134] These are just a few snippets of an enormous body of legal scholarship hostile to EMT.[135]

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[130] Frederick C. Dunbar & Dana Heller, *Fraud on the Market Meets Behavioral Finance*, 31 DEL. J. CORP. L. 455, 457 (2006).

[131] James D. Cox, *Understanding Causation in Private Securities Lawsuits: Building on* Amgen, 66 VAND. L. REV. 1719, 1732 (2013).

[132] Jonathan R. Macey, *Efficient Capital Markets, Corporate Disclosure, and Enron*, 89 CORNELL L. REV. 394, 397 (2004) (alteration in original).

[133] Donald C. Langevoort, Basic *at Twenty: Rethinking Fraud on the Market*, 2009 WIS. L. REV. 151, 175.

[134] *See* Stout, *supra* note 6, at 618 ("[This article] concludes that enhancing market efficiency should not be a goal of securities regulation and describes significant policy changes that would follow from the abandonment of efficiency as a goal.").

[135] For a recent survey of some of the literature, see generally Brief of Law Professors as Amici Curiae in Support of Petitioners at 13–24, Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398 (2014) (No. 13-317), 2014 WL 60721, at *13–24. These law professors conclude:

> Post-*Basic* research has identified significant limitations on the efficient capital markets hypothesis. . . . In light of this research, *Basic*'s assumption that a market deemed efficient will promptly and reliably incorporate a *particular misstatement* into a security's price—which is, at bottom, what courts consider to be a "fraud on the market"—does not reflect the current understanding in financial economics.

Id. at 18 (footnote omitted).

There is an irony in this hostility because without the efficient market hypothesis, there would be no fraud on the market doctrine, and securities class actions would not be practical.[136] Securities class actions, however, are the primary weapon in the arsenal of investor protection.[137] There might be some comfort in the revelation that these relatively liberal securities law professors are not engaged in result-driven reasoning (latching on to the efficient market hypothesis because it supports the cause of plaintiffs who have been defrauded), but it still is puzzling that there should be so much hostility towards economic doctrine.

I attribute this hostility towards economics to a misplaced distrust resulting from the fact that conservatives such as the late Professor Henry Manne pioneered the law and economics movement and attempted to claim the discipline as their imperial tool.[138] Readers were led to believe that economics always supported conservative positions.[139] This view was perpetuated by the fact that the simplest economic models often support laissez-faire policy, and decades ago many legal commentators were too intimidated by the quantitative elements of economic analysis to delve deep into the assumptions of the simplistic economic

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[136] *See* Basic Inc. v. Levinson, 485 U.S. 224, 242 (1988) ("Requiring proof of individualized reliance from each member of the proposed plaintiff class effectively would have prevented respondents from proceeding with a class action, since individual issues then would have overwhelmed the common ones. The District Court found that the presumption of reliance created by the fraud-on-the-market theory provided 'a practical resolution to the problem . . . .' ").

[137] *See* Elizabeth Cosenza, *Is the Third Time the Charm?* Janus *and the Proper Balance Between Primary and Secondary Actor Liability Under Section 10(b)*, 33 CARDOZO L. REV. 1019, 1083 (2012) ("Private securities litigation is a valuable and necessary part of the overall enforcement regime that compensates defrauded investors, deters fraud, promotes investor confidence in the financial markets, and facilitates the fair and efficient functioning of our capital markets.").

[138] *See* Klock, *supra* note 12, at 335 ("Ironically, it might be that Manne's efforts to use economics to promote a conservative agenda have created such a backlash against economics that less economic analysis will be used in legal policy questions than would otherwise be the case.").

[139] *See id.* at 297 ("Manne and his defenders have repeatedly claimed, almost without challenge from legal scholars, that economic theory and evidence support their arguments.").

models.[140] In point of fact, economics is the friend of pro-regulators because more realistic and complex economic models often provide a justification for government intervention in the marketplace.[141] The most obvious current example of this is the Patient Protection and Affordable Care Act (ACA).[142] The primary public policy argument in support of the ACA comes from advanced economic theory pertaining to adverse selection.[143]

The problem of adverse selection under conditions of heterogeneous quality and asymmetric information was made famous by Nobel Laureate George Akerlof.[144] In one of the most highly cited economics papers of all time, Professor Akerlof chose the used car market for pedagogical purposes.[145] He assumed two types of used cars, good and bad, and he termed the bad cars "lemons."[146] Assuming that potential purchasers are risk neutral and lack information about the quality of the car being sold, they

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[140] *See id.* at 325–26 (explaining that conservative models supporting laissez-faire policy are based on overly simplified assumptions and that more realistic assumptions support government intervention in markets).

[141] *See* Klock, *supra* note 7, at 246–50 (explaining that complex economic models often provide justification for government intervention whereas overly simplified economic models do not); *cf.* HAL R. VARIAN, INTERMEDIATE MICROECONOMICS: A MODERN APPROACH 665 (Jack Repcheck ed., 8th ed. 2010) ("[I]f externalities are present, the outcome of a competitive market is unlikely to be Pareto efficient.").

[142] 26 U.S.C. § 5000A (2012).

[143] *See* Amy B. Monahan & Daniel Schwarcz, *Saving Small-Employer Health Insurance*, 98 IOWA L. REV. 1935, 1944 (2013) ("Although individual health insurance markets vary significantly by state, most suffer from significant adverse selection, meaning that the population that buys coverage has a higher risk level than the population as a whole. Such adverse selection not only increases premiums, it also leads insurers to engage in various risk-management techniques that limit coverage or increase costs for individuals with poor health histories. These techniques, which include excluding coverage for pre-existing conditions and rescinding coverage for innocent misrepresentations when an individual becomes high risk, also ultimately harm healthy individuals who find coverage unavailable once it is needed. Group insurance coverage is thought to suffer from less adverse selection than the individual market." (footnotes omitted)).

[144] *See* Mark Klock, *The Taxing Power of the Federal Government and the General Welfare: What Are the Limits in the Wake of* NFIB v. Sebelius*?*, 76 U. PITT. L. REV. 325, 333–34 (2015) ("Nobel Laureate George Akerlof received fame for his use of the market for used cars as a pedagogical innovation to expose the problem of adverse selection.").

[145] *See* George A. Akerlof, *The Market for "Lemons": Qualitative Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 489 (1970) ("The example of used cars captures the essence of the problem.").

[146] *Id.*

will be willing to pay the average value of all cars in the market.[147] He assumes that buyers do know the frequency of good and bad cars in the market, just not the quality of any specific car.[148] Sellers have better information than the buyers and know whether their car is good or a lemon.[149] Sellers with lemons will be willing to sell, as their car will be worth less than the average car, but sellers with good cars will not be willing to sell, as they know their car is worth more than the going price.[150] The result is that lemons drive the good cars out of the market, and only lemons trade.[151] There is a market failure in the sense that there would be willing buyers and sellers for better cars at higher prices that do not transact.[152] In the real world, these problems are mitigated with warranties offered by large credible solvent dealers and third party information providers.[153]

With health insurance, the same problem exists, but the superior information is held by the purchasers rather than the sellers.[154] Individuals know more about their health, their lifestyles, and their genetics than insurance companies.[155] Individuals can calculate the quoted price of insurance and make a determination whether the costs will exceed the benefits provided by the insurance.[156] Not surprisingly, young and healthy people frequently conclude that the insurance will cost more than it provides to them and rationally choose not to purchase

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147 *Id.*

148 *Id.*

149 *Id.*

150 *Id.* at 489–90.

151 *See id.* at 490 ("It has been seen that the good cars may be driven out of the market by the lemons.").

152 *See id.* at 491 ("[A]t no price will any trade take place at all: in spite of the fact that *at any given price* . . . there are traders of type one who are willing to sell their automobiles at a price which traders of type two are willing to pay." (alteration in original)).

153 *See id.* at 499 ("Numerous institutions arise to counteract the effects of quality uncertainty. One obvious institution is guarantees. Most consumer durables carry guarantees to ensure the buyer of some normal expected quality.").

154 *See id.* at 492–94 (describing the "lemons" problem in the context of health insurance).

155 *See* ROBERT COOTER & THOMAS ULEN, LAW & ECONOMICS 48–49 (Donna Battista et al. eds., 6th ed. 2012) (explaining that it is reasonable to believe that the insured know more about their true risks than the insurance company).

156 *See* VARIAN, *supra* note 141, at 723 (explaining the situation in which potential customers can calculate the value of the insurance payoff and purchase accordingly).

insurance.[157] The remaining pool purchasing insurance consists of those who are the least desirable to insure, which forces insurance premiums up and exacerbates the problem.[158] The solution to the problem, which the ACA attempts to impose, is an individual mandate requiring everyone to obtain insurance.[159] This keeps the average insurance premium down and makes it easier for the government to subsidize insurance for the poor.[160]

The point is that the ACA is not well supported by an argument that economists are wrong and insurance should be a right.[161] The ACA is more strongly supported with advanced economic arguments that the individual mandate is the best way to solve the adverse selection problem.[162]

Another example of how simplistic economic models support a conservative position whereas richer economic models support market regulation can be found in discussions of insider trading.[163] Manne argued relentlessly that insider trading should not be banned because no one was hurt by it and it made prices more efficient by providing incentives for insiders to act on their

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[157] *See* FREDERIC S. MISHKIN & STANLEY G. EAKINS, FINANCIAL MARKETS & INSTITUTIONS 515 (Sally Yagan et al. eds., 7th ed. 2012) ("[T]he party more likely to suffer a loss is the party likely to seek insurance.").

[158] *See* VARIAN, *supra* note 141, at 723 ("[T]he insurance company is likely to go broke quickly!").

[159] *See* Nat'l Fed'n of Indep. Bus. v. Sebelius, 132 S. Ct. 2566, 2609–15 (2012) (Ginsburg, J., concurring in part, concurring in the judgment in part, and dissenting in part) (reciting various statistics about the American healthcare industry and concluding, "Congress passed the minimum coverage provision as a key component of the ACA to address an economic and social problem that has plagued the Nation for decades: the large number of U.S. residents who are unable or unwilling to obtain health insurance.").

[160] *See id.* at 2670 (Scalia, Kennedy, Thomas, & Alito, JJ., dissenting) ("Some persons who cannot afford insurance are provided it through the Medicaid Expansion, and others are aided in their purchase of insurance through federal subsidies available on health-insurance exchanges.").

[161] *Cf.* Mark Klock, *The Virtue of Home Ownership and the Vice of Poorly Secured Lending: The Great Financial Crisis of 2008 as an Unintended Consequence of Warm-Hearted and Bone-Headed Ideas*, 45 ARIZ. ST. L.J. 135, 181 (2013) ("Home ownership is an asset portfolio choice, not a right."). *But cf.* David S. Kirk & John H. Laub, *Neighborhood Change and Crime in the Modern Metropolis*, 39 CRIME & JUST. 441, 475 (2010) ("Some have likened home ownership to citizenship and characterized it as a political right.").

[162] *See* Klock, *supra* note 144, at 340 ("The idea of requiring everyone to purchase health insurance eliminates the adverse selection problem . . . .").

[163] *See* Klock, *supra* note 12, at 304–09 (discussing Manne's insider trading hypothesis and economic arguments against it).

information.[164] He presented simplistic economic models to support his position and no one challenged him.[165] The flaw in his conclusions was that his models were all of the partial equilibrium variety and not of the general equilibrium variety.[166] A partial equilibrium model holds many variables exogenous (fixed and determined outside of the model) while just examining the first order effects of one variable on another.[167] So in Manne's models, the overall level of capital supplied to the financial markets was always held constant and not allowed to change.[168] More sophisticated economic analysis, however, would recognize that this is unrealistic.[169] Specifically, we know from advanced economic analysis that information asymmetry causes markets to break down, and that if insiders are allowed to trade, uninformed investors will invest less.[170] It has been shown that, in a general equilibrium model banning insider trading can improve the efficiency of the market.[171]

More than twenty years ago, I wrote that Manne's arguments are not only not based on sound economic theory, but that his arguments are actually at odds with the majority of economic theory and empirical evidence.[172] That article went on to explain

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[164] *See* Frank B. Cross & Robert A. Prentice, *The Economic Value of Securities Regulation*, 28 CARDOZO L. REV. 333, 336 (2006) ("Henry Manne, who has been writing in favor of legalizing insider trading for forty years (undeterred by the fact that over this period of time the entire developed world has rejected his position and outlawed insider trading nation by nation), has recently resumed his quest." (footnote omitted)).

[165] *See* Lawrence M. Ausubel, *Insider Trading in a Rational Expectations Economy*, 80 AM. ECON. REV. 1022, 1025–26 (1990) (describing Manne as representative of the classical law and economics view of insider trading).

[166] *See* Klock, *supra* note 12, at 304–05 ("Manne's argument relies on what economists call a partial equilibrium model which looks at a single transaction in isolation and holds everything else constant in a nirvana-like fallacy." (footnotes omitted)).

[167] *See* VARIAN, *supra* note 141, at 582 (explaining the difference between partial equilibrium analysis and general equilibrium analysis).

[168] *See* Klock, *supra* note 12, at 305 (explaining that Manne assumes no impact on aggregate investment).

[169] *See id.* (explaining that general equilibrium analysis is required).

[170] *See id.* ("[I]f insider trading is permitted, outsiders will rationally anticipate some losses to insiders and adjust their behavior accordingly.").

[171] *See* Ausubel, *supra* note 165, at 1038 ("This article has attempted to contribute to the economic analysis of insider trading by formalizing 'confidence' as an efficiency argument.").

[172] *See* Klock, *supra* note 12, at 297–98 ("Manne and his defenders have repeatedly claimed, almost without challenge from legal scholars, that economic theory and evidence support their arguments. This is truly remarkable because, as this article demonstrates,

the fallacy in Manne's economic partial equilibrium models.[173] Other economists had already explained Manne's fallacy in the economic literature.[174]

In *Insider Trading in a Rational Expectations Economy*, Professor Lawrence Ausubel took exception with Manne's claims that economic efficiency is enhanced by allowing insider trading.[175] Professor Ausubel took the traditional argument that prohibitions on insider trading promote confidence in markets and reformulated it as an economic argument supporting insider trading regulation.[176] Professor Ausubel wrote:

> My analysis thus provides an economic formalization of the notion of confidence in markets. Let "confidence" be interpreted as the rational belief by outsiders that their return on investment is not being diluted by insiders' trading. Then, perhaps, the goal of insider trading regulation and securities law truly is to foster confidence in markets. When confidence is promoted, outsiders and insiders may benefit alike.[177]

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the arguments of Mann and his defenders are not based on sound economic theory. In fact, the great weight of economic theory and empirical evidence is at odds with Manne. Interestingly, those legal commentators who intuitively feel comfortable with Manne's arguments have not attacked Manne's knowledge of economics, but have instead criticized that which they do not understand themselves." (footnotes omitted)).

[173] *See id.* at 304–09 (explaining Manne's error).

[174] *See* Ausubel, *supra* note 165, at 1038 ("If outsiders expect that insiders will take advantage of them at later stages, then outsiders may choose to invest less at the beginning. Meanwhile, effective regulation of insider trading at later stages may improve the anticipated return on investment of outsiders and, hence, promote investment by outsiders at the beginning. If insiders are helped by the availability of outside investment, insiders too may benefit from the precommitment created by insider trading regulation. It is noteworthy that the efficiency considerations posed by 'confidence' point in exactly the same direction as the traditional fairness considerations, and for almost the same reason.").

[175] *See id.* at 1022–23 ("For many plausible specifications of the model, the outcome when society regulates insider trading is a Pareto improvement over the outcome when insider trading is permitted. Under such scenarios, economic efficiency would require the banning of insider trading." (footnote omitted)).

[176] *See id.* at 1022 ("My objective in the current article will be to reformulate the confidence rationale as an economic argument for insider trading regulation.").

[177] *Id.* at 1023.

Professor Ausubel went on to demonstrate in a mathematical economic model that, contrary to Manne's assertion that trading by insiders makes prices more efficient, prohibitions on insider trading can result in a Pareto improvement where everyone can benefit.[178] Justices Alito, Scalia, and Thomas would have been well served when writing about economic theory to read the work of actual economists such as Professor Ausubel rather than citing the opinions of non-economists about economics.

Rather than accepting the conservative argument that economic theory supports conservative positions, those who have an intuition that something must be wrong with this reasoning should not necessarily conclude that economics must be wrong, but should instead merely conclude that this form of economics—partial equilibrium analysis—must generate misleading conclusions.[179] Rather than throwing the baby out with the bathwater, they should address the limitations in the conservative models and use economic analysis to enrich the models.[180] I suggest that economics is actually the friend of regulators because economic theory tells us that markets do not work well when information asymmetry exists, and information asymmetry is everywhere in the real world.[181]

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[178] *See id.* at 1027–37 (presenting the model).

[179] *See* KARL E. CASE & RAY C. FAIR, PRINCIPLES OF MICROECONOMICS 275 (Rod Banister et al. eds., 5th ed. 1999) ("A general equilibrium exists when all markets in an economy are in simultaneous equilibrium. An event that disturbs the equilibrium in one market may disturb the equilibrium in many other markets as well. The ultimate impact of the event depends on the way *all* markets adjust to it. Thus, partial equilibrium analysis, which looks at adjustments in one isolated market, may be misleading.").

[180] *Cf.* Gregory Mitchell, *Tendencies Versus Boundaries: Levels of Generality in Behavioral Law and Economics*, 56 VAND. L. REV. 1781, 1810 (2003) ("The first principle of legal decision theory should be to go wherever the data takes us, rather than always to reject the rationality assumption of law and economics or to assume that legal actors' irrational tendencies chronically lead to real world mistakes . . . .").

[181] *See* George A. Akerlof, *Behavioral Macroeconomics and Macroeconomic Behavior*, 92 AM. ECON. REV. 411, 411 (2002) (calling markets operating under information asymmetry "more realistic"); Michael Spence, *Signaling in Retrospect and the Informational Structure of Markets*, 92 AM. ECON. REV. 434, 435 (2002) ("[T]here are many markets with informational gaps.").

Government regulation designed to reduce information asymmetry through improving disclosure will generally be beneficial.[182] As I stated over a dozen years ago:

> The notion that law has suffered from the influence of too much economic analysis is simply preposterous, and symptomatic of an irrational phobia existing in the minds of a significant set of commentators, which has also diminished their advocacy skills. If one wishes to advocate that auditing firms become insurers for defrauded investors, this position might better be persuasively advanced *with* economic arguments for such legislation, rather than blaming economics for the refusal of judges to pretend that evidence of securities fraud by a corporation is also evidence of participation by the auditing firm.[183]

Once the hostility towards economic analysis was established, it became entrenched and self-perpetuating.[184] Those who feel that economics must be wrong seek confirmation of it.[185] Casual reading of controversies and discussion in the literature can easily result in misunderstandings, such as confusing the assumptions of a theoretical model with the assumptions underlying statistical tests of a model.[186] This is readily apparent in the legal commentary on EMT and the Capital Asset Pricing Model (CAPM).[187]

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[182] *See* Mark Klock, *Contrasting the Art of Economic Science with Pseudo-Economic Nonsense: The Distinction Between Reasonable Assumptions and Ridiculous Assumptions*, 37 PEPP. L. REV. 153, 190 (2010) ("The lemons problem caused by asymmetric information can be mitigated with adequate penalties for fraud and mandatory disclosure requirements.").

[183] Klock, *supra* note 7, at 183.

[184] *See* Klock, *supra* note 9, at 1041–42 (describing social learning processes' biases resulting from desires to circulate interesting stories and novel results).

[185] *See generally* Gregory Mitchell, *Why Law and Economics' Perfect Rationality Should Not Be Traded for Behavioral Law and Economics' Equal Incompetence*, 91 GEO. L.J. 67 (2002) (discussing the anti-economics movement in legal literature).

[186] *See* Klock, *supra* note 7, at 205–10 (explaining that additional assumptions are required to conduct statistical tests on models that are not part of the models' own assumptions).

[187] *See, e.g.*, Lynn A. Stout, *Are Stock Markets Costly Casinos? Disagreement, Market Failure, and Securities Regulation*, 81 VA. L. REV. 611, 649 (1995) (using "[t]he rising tide of evidence against the CAPM" to support an argument that EMT is false). *See generally*

In an article that devoted significant time to discussing the misconceptions about EMT and the CAPM, I summarized my criticism of the assault on economic analysis in law by stating that the arguments of those assaulting economic analysis in law "are built upon a conglomeration of misunderstandings regarding economics, economic models, . . . theories, . . . and so forth."[188] Moreover, I argued that the legal commentary attacking economic analysis consisted of poor *lawyering* skills, as opposed to mere confusion from a lack of understanding of the economic literature.[189]

Other commentators without the bias of trained economists have also been highly critical of legal scholars who reject economic theory in favor of behavioral analysis. Judge Richard Posner wrote about the "undertheorization of behavioral economics," stating:

> It is undertheorized because of its residual, and in consequence purely empirical, character. Behavioral economics is defined by its subject rather than by its method and its subject is merely the set of phenomena that rational-choice models (or at least the simplest of them) do not explain. It would not be surprising if many of these phenomena turned out to be unrelated to each other, just as the set of things that are not edible by man include stones, toadstools, thunderclaps, and the Pythagorean theorem. Describing, specifying, and classifying the empirical failures of a theory is a

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Klock, *supra* note 7, at 203–10 (explaining the interrelationship between tests of EMT and the CAPM).

[188] Klock, *supra* note 7, at 183–84.

[189] *Id.*; *see also id.* ("Examples include: failing to distinguish the implications of disproving a sufficient condition from those of disproving a necessary condition; failing to look for evidence in plain view; failing to read the evidence correctly; rebutting incredible theories with the weakest arguments; lack of awareness of the often whimsical assumptions underlying inferences drawn from statistical evidence; and lack of awareness of alternative explanations for evidence.").

> valid and important scholarly activity. But it is not an alternative theory.[190]

Even more critical has been Professor Gregory Mitchell, who has written a series of papers on the unwarranted rejection of economics.[191] In one, he stated:

> [T]he greater realism of behavioral law and economics is more illusion than reality. In fact . . . the equal incompetence assumption is not faithful to the empirical data on judgment and choice and, moreover, cannot lay claim to empirical validity superior to that of the perfect rationality assumption. Behavioral law and economics bases its model of bounded rationality on a very limited set of empirical data and draws unsupportable conclusions about human nature from this partial data set. Behavioral law and economics scholars simplify and overgeneralize findings on human cognition and rationality to make these findings seem simultaneously important and simple enough to be incorporated into legal policy. Remarkably, despite the amazing breadth and boldness of many of the empirical claims made by advocates of behavioral law and economics, the validity of these empirical claims has largely gone untested within the legal academy.[192]

IV. THE ECONOMICS UNDERLYING EFFICIENT MARKET THEORY

It is common knowledge among financial economists that it is impossible to unconditionally disprove the EMT because of

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[190] Richard A. Posner, *Rational Choice, Behavioral Economics, and the Law*, 50 STAN. L. REV. 1551, 1559–60 (1998).

[191] *See generally* Gregory Mitchell, *Taking Behavioralism Too Seriously? The Unwarranted Pessimism of the New Behavioral Analysis of Law*, 43 WM. & MARY L. REV. 1907 (2002); Mitchell, *supra* note 180; Mitchell, *supra* note 185.

[192] Mitchell, *supra* note 185, at 72.

something called the joint hypothesis problem.[193] In order to test whether the market is efficient, one must specify the correct asset pricing model.[194] This is unknowable.[195] Tests of market efficiency are conditional on the asset pricing model used to test the theory.[196] This means that if the data reject the EMT, there is always the alternative interpretation that the data are inconsistent not because the EMT is wrong, but because the underlying asset pricing model that was used is wrong.[197] It is also the case that it is impossible to unconditionally prove the EMT is true, because the use of an incorrect asset pricing model could cause an inefficient market to appear to be efficient.[198]

Commentators who survey the literature by focusing on introductions and conclusions without thoroughly understanding the context of the research and the underlying statistical methodology are prone to take the results out of context and misinterpret them.[199] For example, Professor Stout unequivocally cites Edward Miller from the *Journal of Finance* as stating that

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[193] *See* CAMPBELL ET AL., *supra* note 35, at 24 ("This *joint hypothesis* problem means that market efficiency as such can never be rejected." (alteration in original)).

[194] *See id.* ("[A]ny test of efficiency must *assume* an equilibrium model that defines normal security returns." (emphasis added)).

[195] *See* Klock, *supra* note 7, at 233 ("[M]ere mortals lack Olympian knowledge of both the structure of the world and the parameters underlying that structure.").

[196] *See id.* at 206 ("[T]hese sorts of tests of market efficiency are at best valid conditional upon the truth of the assumed model generating expected returns.").

[197] *See* ZVI BODIE ET AL., ESSENTIALS OF INVESTMENTS 278–79 (Robin J. Zwettler et al. eds., 4th ed. 2001) ("If it appears that a portfolio strategy can generate superior returns, we then must choose between rejecting the EMH or rejecting the risk adjustment technique. Usually, the risk adjustment technique is based on more questionable assumptions than the EMH . . . ."); STEVEN M. SHEFFRIN, RATIONAL EXPECTATIONS 124 (2d ed. 1996) ("Another, less dramatic, explanation [than market inefficiency] is that the stock-market equation might be misspecified. . . . If this were true, it would mean that the basic model of market equilibrium used in these tests . . . is the cause for the rejection of the tests.").

[198] *See* CAMPBELL ET AL., *supra* note 35, at 24 ("If efficiency is rejected, this could be because the market is truly inefficient or because an incorrect equilibrium model has been assumed.").

[199] *See, e.g.*, Klock, *supra* note 9, at 1009 ("[A] scan of federal cases and amici briefs reveals that a good deal of testimony and case law incorporates simplified definitions of statistical significance which have been taken out of context."); Mitchell, *supra* note 191, at 2020 ("For whatever reason, many legal scholars use insufficient care and precision in their interpretations and uses of psychological research on judgment and decision making. Consumers of this growing literature should thus look very skeptically on the claims being made and should resist the contention that the cognitive-miser model being offered by these scholars is more complete and accurate than the rational-actor model.").

"firms with high beta risk . . . offer investors *lower* returns than the market as a whole."[200] That is not what Professor Miller wrote, however. What he stated was that the capital asset pricing model overpredicts the returns of high risk stocks.[201] To explain this in different words, picture a graph with risk on the horizontal axis and expected return on the vertical axis. Now draw an upward-sloping line. Label the point in the middle of the line as the market average. Finally, without moving the midpoint, tilt the line slightly flatter, while keeping it upward-sloping. What Professor Miller stated is that the theory predicts a steeper line (the first line) than what we observe (the second line). But what Professor Stout said is that we actually observe a downward-sloping line, which is neither true nor in the literature she cited.

Commentators have taken the inability of the finance profession to prove indisputably in a statistical model that the market is efficient to mean that the market is not efficient, when in fact it cannot be interpreted this way at all.[202] It cannot be proven correct because it is not possible to prove it is correct—at most it could be proven incorrect.[203] To say that it must then be wrong is like saying that tomorrow's weather forecast must be wrong because we cannot prove today that it is accurate.[204]

Commentators who survey the literature and cherry pick articles purporting to find an inefficiency are making compounded errors. First, such articles, viewed in the context of the entire literature, are reporting anomalies.[205] The profession does not consider such findings to be evidence of widespread inefficiency,

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[200] Stout, *supra* note 125, at 488 & n.40.

[201] Edward M. Miller, *Risk, Uncertainty, and Divergence of Opinion*, 32 J. FIN. 1151, 1157 (1977).

[202] *See generally* Klock, *supra* note 7, at 202–17 (explaining common mistakes in the literature regarding efficient market theory).

[203] *See* EUGENE SILBERBERG, THE STRUCTURE OF ECONOMICS: A MATHEMATICAL ANALYSIS 10–14 (Scott D. Stratford ed., 2d ed. 1990) (explaining that a theory is a set of explanations which can be refuted or supported by facts, but cannot be proven to be true due to the impossibility of ruling out alternative explanations of the same facts).

[204] *See* MALKIEL, *supra* note 17, at 103 ("Expectations about the future cannot be proven in the present.").

[205] *See* Hall, *supra* note 13, at 4 ("Modern financial economics speaks of the puzzle of time-varying risk premiums, not a clear finding of irrationality. The same point applies in the discovery of the market-to-book effect: it may reveal something about risk . . . .").

but rather considers the evidence to be a puzzle warranting further investigation.[206] With the laws of probability and the well-known publication bias that favors publishing interesting and novel results over boring, anticipated results, it is inevitable that such anomalies will exist in the literature.[207] The laws of probability teach us that highly unlikely events are certain to occur in a large number of trials.[208] For example, although the probability of picking a winning Powerball lottery ticket number is quite small, the probability that no one would do it within a year is even smaller.[209] Because so many people are combing through the data searching for anomalous patterns, it is certain that some people will find some, even if they are merely illusions.[210]

Statistically significant findings at the 95% confidence interval are those for which the error rate of incorrectly rejecting a null hypothesis which is actually true is one in twenty.[211] This might be an acceptable error rate in an isolated trial, but in a large number of trials, there will be many incorrect rejections of true hypotheses.[212] This is one point that has been lost by commentators arguing that the market is not efficient.[213]

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[206] *See* WELCH, *supra* note 124, at 350 ("Almost all financial economists, regardless of camp, believe in basic market efficiency for large markets and liquid securities. No respectable economist believes that it is easy to get very rich trading on easily available information.").

[207] *See* Stephen F. LeRoy, *Efficient Capital Markets and Martingales*, 27 J. ECON. LITERATURE 1583, 1610 (1989) ("[T]he published literature is skewed toward interesting, that is, anomalous, results, and away from boring confirmations of the absence of anomaly.").

[208] *See* Klock, *supra* note 9, at 1027 (explaining that "unlikely events are certain to happen").

[209] *See id.* (reporting that Powerball tickets win on a regular basis notwithstanding the low odds of any particular ticket winning).

[210] *See id.* at 1039 ("Around the world, untold numbers of such people are combing random data at this very moment searching for patterns to explain and report.").

[211] *See* DAVID R. ANDERSON ET AL., STATISTICS FOR BUSINESS AND ECONOMICS 315–19 (Emily P. McNamara ed., 6th ed. 1996) (explaining that the significance of the error rate for incorrectly rejecting a true null hypothesis is one minus the confidence level).

[212] *See* Michael C. Lovell, *Data Mining*, 65 REV. ECON. & STAT. 1, 2–4, 4 tbl.1 (1983) (describing the high probability of finding reportedly significant results in random data when using a search, and showing that when searching 100 random variables for the best two at a 5% nominal error rate, the true error rate exceeds 90%).

[213] *See* MALKIEL, *supra* note 17, at 162 ("After the fact, it is always possible to find a technical rule that works. For example, it might be that you should have bought all stocks whose names began with the letters X or D, whose volume was at least 3,000 shares a day, and whose earnings grew at a rate of 10 percent or more during the preceding five-year period. The point is that it is obviously possible to describe, after the fact, which categories

As discussed above, the joint hypothesis problem also makes it impossible to disprove the efficient market hypothesis because any finding of inefficiency could alternatively be interpreted as a misspecification of the underlying asset pricing model.[214] Unfortunately, the most commonly utilized asset pricing model is a variant of the CAPM,[215] and tests of the CAPM and EMT have been so entangled that commentators surveying the literature can easily be confused and take the EMT and CAPM to be the same.[216] This results in commentators mistakenly concluding that evidence that the CAPM is incorrect is also evidence that the EMT is false.[217] In fact, although these theories are frequently tested together, they are unrelated in the sense that neither is required for the other to hold.[218] The EMT does not require that any particular asset pricing model be correct; it merely requires that prices reflect all available information, which leads to the sole

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of stocks had the best performance. The real problem is, of course, whether the scheme works in a different time period.").

[214] *See* Klock, *supra* note 7, at 205–06 (describing the joint hypothesis problem for testing market efficiency).

[215] *See* Merritt B. Fox, *The Role of the Market Model in Corporate Law Analysis: A Comment on Weiss and White*, 76 CALIF. L. REV. 1015, 1015–16 (1988) (referring to the CAPM variation) ("One of the notable achievements of modern finance theory has been the use of the market model for studying the reaction of share prices to new information. This technique was originally developed to test market efficiency, the speed with which the market fully reflects new information concerning an event of obvious importance to the value of the shares involved. However, once a significant number of finance theorists were persuaded that market prices reflect information concerning such an event very quickly after it becomes publicly available, the market model was used for a broader purpose: to measure the effect of particular kinds of events on share value.").

[216] *See* Klock, *supra* note 7, at 206 ("Empirical literature has so intertwined the CAPM and the ECMH that observers can easily become confused over the distinctions, and have on occasion fused the two free-standing theories together.").

[217] *See* Stout, *supra* note 187, at 651 ("Although unrealistic, the assumption of investor homogeneity was a useful device for the pioneering theorists who developed the CAPM to model the relationship between stocks' nondiversifiable risks and their expected returns. Nor does the homogeneity assumption's falsity detract much from the CAPM's utility for that purpose. When the CAPM is incorporated into the ECMH to make predictions about the relationship between a particular stock's market price and its intrinsic value, however, the assumption of investor homogeneity leads to the false prediction that stock prices reflect best estimates of stock values." (footnotes omitted)).

[218] *See* LeRoy, *supra* note 207, at 1613 n.27 (explaining that the no-arbitrage condition of efficiency merely requires economic equilibrium, not a particular equilibrium model).

prediction that there are no arbitrage opportunities in efficient markets.[219]

Other severe problems in testing the EMT exist in addition to the joint hypothesis problem. One is that EMT is a theory about *expected* returns, and expected returns are unobservable.[220] At best, we can collect data on realized returns. Realized returns are different from expected returns and can only be used as a substitute to test a hypothesis about expected returns if researchers can create a link between the realizations and the expectations.[221] Such a linkage requires the assumption that investors have homogeneous expectations.[222] So the quite unrealistic assumption of homogeneous expectations is not required for EMT to hold, but it is required to use realized returns as a proxy for expected returns in statistical testing.[223] That means that statistical test results purporting to reject EMT might well not be the result of market inefficiency, but are more likely the result of relying on the incorrect assumption of homogenous expectations required to legitimately use realized returns as a proxy for expected returns.[224]

Yet a third common problem with empirical research on market efficiency is that "even the realized returns are not observable."[225] As I have explained previously:

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[219] *See* Stephen A. Ross, *The Interrelations of Finance and Economics: Theoretical* Perspectives, 77 AM. ECON. REV. 29, 32 (1987) ("The intuition underlying the efficient market theories is the intuition of the lack of arbitrage.").

[220] *See, e.g.*, Marshall E. Blume & Irwin Friend, *A New Look at the Capital Asset Pricing Model*, 28 J. FIN. 19, 21 (1973) ("The capital asset pricing model . . . is an *ex ante* model stated solely in terms of expectations. To test it, one must make the transition to an *ex post* model by [arbitrarily] specifying some return generating process.").

[221] *See id.* (explaining that in order to test the *ex ante* theory with *ex post* data, it is necessary to specify a return generating process linking actual returns to expected returns, which must be homogeneous for the linkage specified).

[222] See Eugene F. Fama & James D. MacBeth, *Risk, Return, and Equilibrium: Empirical Tests*, 81 J. POL. ECON. 607, 611 (1973) (explaining the role homogeneous expectations play in relating *ex post* realized returns to *ex ante* expectations, and that the assumption is necessary for meaningful statistical tests of the hypotheses implied by the CAPM).

[223] *See* Klock, *supra* note 7, at 209 ("Without this link, models that estimate the CAPM to test the ECMH have a problem involving measurement errors in the explanatory variables, which results in biased estimates not converging on the true parameter.").

[224] *See id.* at 208 ("[T]he research claiming to find market inefficiencies is invalid due to the use of an incorrect equilibrium asset pricing model.").

[225] *Id.* at 209–10.

> Returns are generally constructed from daily data employing closing prices. Closing prices are not the actual price at closing, but are the price of the last trade prior to closing. For the most actively traded stocks these figures are likely to be close together, but for less actively traded stocks the closing prices are likely to be stale. This creates serious problems for statistical estimation. The literature refers to this as the nonsynchronous trading problem. The problem involves difficulty in measuring the value of the stock index contemporaneously with any given stock. This is needed to estimate the stock's risk and normal expected return. Additionally, the measured rate of return for different days is not necessarily for the same length day if the closing prices are stale. The upshot is that we cannot observe expected returns, nor can we observe the data we require to obtain valid estimates. While the problems can be overcome in theory, an increasing number of whimsical assumptions must be introduced.[226]

Instead of relying on data and statistical models to support the EMT, we can rely on common sense.[227] If the most actively traded stocks are not trading in an efficient market, then that means that there is information available to all which is not being incorporated into the pricing.[228] Anyone could use this information to obtain more accurate prices than those being quoted and could buy the underpriced securities while financing their purchases

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[226] *Id.* (footnotes omitted).

[227] *See* Ray Ball, *The Theory of Stock Market Efficiency: Accomplishments and Limitations*, *in* THE REVOLUTION IN CORPORATE FINANCE 2, 15 (Joel M. Stern & Donald H. Chew, Jr. eds., 3d ed. 1998) ("[S]tock markets must rank highly among markets on *a priori* likelihood of being competitive: there are no entry barriers; there are many buyers and sellers, who by and large appear to be greedy and enterprising people; and transaction costs are relatively low.").

[228] *See* Richard Roll, *What Every CFO Should Know About Scientific Progress in Financial Economics: What Is Known and What Remains to Be Resolved*, 23 FIN. MGMT. 69, 72 (1994) (explaining that market efficiency merely means the absence of a *marginal* incentive to invest in information).

without any capital by shorting overpriced securities.[229] This would result in a positive return on zero investment.[230] It is the equivalent of a money pump, or picking currency off of the low-hanging branches on trees.[231]

Experience tells us that even market professionals do not possess such ability.[232] Common sense tells us that this cannot occur, and more importantly, it cannot persist.[233] Money growing from low-hanging branches will be picked more quickly than it can ripen and will disappear.

That does not mean that every asset always trades in an efficient market, which is why the Supreme Court limited the FOMT doctrine to efficient markets.[234] Information is not widely

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[229] *See* Richard Roll & Robert J. Shiller, Comments: *Symposium on Volatility in U.S. and Japanese Stock Markets*, 5 J. APPLIED CORP. FIN. 23, 31 (1992) (statement of Professor Roll) ("I have to keep coming back to my original point that a true market *inefficiency* ought to be an exploitable opportunity. If there's nothing investors can exploit in a systematic way, time in and time out, then it's very hard to say that information is not being properly incorporated into stock prices." (alteration in original)).

[230] *See* SHARPE ET AL., *supra* note 28, at 284 ("Arbitrage is the process of earning riskless profits by taking advantage of differential pricing for the same physical asset or security. As a widely applied investment tactic, arbitrage typically entails the sale of a security at a relatively high price and the simultaneous purchase of the same security (or its functional equivalent) at a relatively low price.").

[231] *See* Mark J. Machina, *Dynamic Consistency and Non-Expected Utility Models of Choice Under Uncertainty*, 27 J. ECON. LITERATURE 1622, 1623–24 (1989) ("Unless and until economists observe such explicit money pumping in the real world, they won't adopt models that imply it must exist.").

[232] *See* Rubinstein, *supra* note 15, at 21 (stating, with respect to the evidence that actively managed mutual funds do not outperform an index, that "the behavioralists have nothing in their arsenal to match it; it is a nuclear bomb against their puny sticks").

[233] *See, e.g.*, SHEFFRIN, *supra* note 197, at 100 ("Competition among investors, therefore, ensures that the most accurate information is embodied in prices and that the market functions efficiently."); Ball, *supra* note 227, at 5 ("The economics underlying this model are very simple. Publicly-available information by definition is accessible to all investors at zero cost. . . . And since revenue and cost are equated in competitive equilibrium, the implication . . . is that . . . [s]ecurity prices should therefore adjust to information as soon as . . . it becomes publicly available."); LeRoy, *supra* note 207, at 1583 ("At its most general level, the theory of efficient capital markets is just the theory of competitive equilibrium applied to asset markets."); Roll, *supra* note 228, at 72 ("There has been a lot written about efficient markets, but the basic concept is simple. Competition will eventually assure that trading rules just cover costs."); Ross, *supra* note 219, at 32 ("The intuition underlying the efficient market theories is the intuition of the lack of arbitrage [in a competitive equilibrium].").

[234] *See* Erica P. John Fund, Inc. v. Halliburton Co., 131 S. Ct. 2179, 2185 (2011) ("[P]laintiffs must demonstrate . . . that the stock traded in an efficient market . . . .").

available for everything.[235] Television shows such as *Pawn Stars* and *American Pickers* demonstrate that people can earn money buying and selling illiquid items at a lower price and reselling at a higher price.[236] People attend crowded venues and find that the nearest restroom has long lines, but sometimes if they walk to the next one, there are short lines. Obviously, if this type of information was widely known, the lines would equilibrate, with the longer lines getting shorter and the shorter lines getting longer.[237] If large disparities persist, it is evidence of a lack of information.[238] But actively traded NYSE stocks do not demonstrate this phenomenon.[239] Information is being updated and widely disseminated constantly.[240] It simply is not logical to believe that prices of such assets can systematically and persistently deviate from their value.[241]

With all the data available, and all of the doctoral students and untenured finance professors seeking tenure combing through the data, it is inevitable that an occasional anomaly will pop up.[242]

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[235] *See* Spence, *supra* note 181, at 435 (observing the pervasiveness of informational gaps).

[236] *See* Nicholas L. Georgakopoulos, *Frauds, Markets, and Fraud-on-the-Market: The Tortured Transition of Justifiable Reliance from Deceit to Securities Fraud*, 49 U. MIAMI L. REV. 671, 704 (1995) (noting that both timing and pricing can vary with illiquid items); *About Pawn Stars*, HISTORY.COM, http://www.history.com/shows/pawn-stars/about (last visited June 20, 2016) (describing the TV show *Pawn Stars*, in which a family seeks out items to resell at higher values); *About American Pickers*, HISTORY.COM, http://www.history.com/shows/american-pickers/about (last visited June 20, 2016) (describing the TV show *American Pickers*, in which two men search junkyard for items to resell).

[237] *See generally* JOSEPH E. STIGLITZ, PRINCIPLES OF MICROECONOMICS 443–45 (2d ed. 1997) (describing results from the fact that searches are costly).

[238] *See* Joseph E. Stiglitz, *Information and the Change in the Paradigm in Economics*, 92 AM. ECON. REV. 460, 479 (2002) (explaining that markets with imperfect information are not efficient).

[239] *See supra* note 124 and accompanying text (describing the operation of stocks on the NYSE).

[240] *See supra* note 61 and accompanying text (noting that the disclosure requirements of federal securities laws provide the large securities markets with sufficient information).

[241] *See* Hall, *supra* note 13, at 3 ("[I]t is important to understand that excess volatility implies that active trading strategies yield higher returns, a proposition that gains no systematic support from the evidence.").

[242] *See* MALKIEL, *supra* note 17, at 268–69 (describing the cause and effect of "data snooping"). With respect to alleged statistical evidence of anomalies, Professor Malkiel states:

> Many could be the result of "data snooping," letting the computer search through the data sets of past securities prices in the hopes of finding some relationships. With the availability of fast computers and easily accessible stock market data, it is not surprising that some statistically significant

Commentators who lack training in statistics will jump on the anomaly and claim that it proves the EMT false.[243] Those who understand probability theory know that unlikely outcomes are certain to happen in a large number of trials and will spend years investigating the anomaly for further insights.[244]

The claim that an occasional apparent anomaly is proof of widespread inefficiency is unfounded, and a gross distortion of the observation.[245] It is extremely similar to claims often put forward that because people sometimes make bad decisions, people are inherently irrational and need some paternalistic government intervention to protect them.[246] Traffic accidents are proof that people do make bad decisions, but these are the exceptions, not the commonplace. If traffic accidents are proof that people are exceedingly overconfident in their driving and judgment abilities, then one has to ask why individuals do not wreck their vehicles on a daily basis.[247] Indeed, the opposite is true. When someone wrecks his vehicle, he is likely to recalibrate, learn from the

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> correlations have been found, especially because published work is probably biased in favor of reporting anomalous results rather than boring confirmations of randomness. Thus, many of the predictable patterns that have been discovered may simply be the result of data mining . . . .

Id.

[243] *See* Klock, *supra* note 9, at 1011–12 (explaining that specification searches lead to invalid statistical inferences).

[244] *See* Rubinstein, *supra* note 15, at 23 ("[G]ood financial economists do not blame their failure to explain nonillusory anomalous evidence on irrationality. They look elsewhere.").

[245] *See id.* ("[M]any so-called anomalies are empirical illusions created by data mining, survivorship bias, selection bias, short-shot bias (a term for the failure to appreciate the possibility of rare negative events that are not in an historical sample), trading costs (particularly the invisible market impact costs that can destroy paper profits), and the high variances of sample means (which imply that luck can play a big role in realized returns).").

[246] *See* Jonathan Klick & Gregory Mitchell, *Government Regulation of Irrationality: Moral and Cognitive Hazards*, 90 MINN. L. REV. 1620, 1623–24 (2006) ("The imposition of a paternalistic policy presupposes an individual will act contrary to her best interests unless some third party intervenes to protect those interests. Such intervention may be justified on grounds that the paternalism advances efficiency, personal integrity, or sound judgment." (footnote omitted)).

[247] *See* Mark Klock, *Financial Options, Real Options, and Legal Options: Opting to Exploit Ourselves and What We Can Do About It*, 55 ALA. L. REV. 63, 92 (2003) ("If people have cognitive biases such as overconfidence, why do we not observe more pedestrians flinging themselves in front of vehicles?" (footnote omitted)).

experience, and be more careful thereafter. This is more consistent with rational behavior than irrational behavior.[248]

To further support arguments against market efficiency, some commentators have cited papers that attempt to model sustained indefinite departures from rational pricing through the introduction of speculative bubbles.[249] Such papers were thoroughly discredited in 2006 when Professors Loewenstein and Willard published an article demonstrating that all such models contained an unstated assumption of unlimited credit.[250] They propose that there are three important elements of reality: markets must clear; budget constraints must be satisfied; and credit must be rationed.[251] It should be noted that credit rationing is an inevitable result of limited liability.[252] Any model fulfilling these conditions will result in prices relating to value without any assumptions regarding investor rationality.[253] Professors Loewenstein and Willard note that "investor behavior can be important for equilibrium asset prices . . . only within certain limits that apply universally to all assumptions about investor behavior."[254]

In an earlier paper commenting on poor economic analysis by legal commentators, I described Professors Loewenstein's and Willard's research as "important research . . . motivated by models that contain implicit assumptions taking them out of the realm of

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[248] *See id.* ("While I do not have the data, I find it much more plausible that pedestrian fatalities are the result of distracted individuals forgetting to look than to argue that overconfidence caused them to move into the path of the oncoming vehicle.").

[249] *See* David B. Spence & Robert Prentice, *The Transformation of American Energy Markets and the Problem of Market Power*, 53 B.C. L. REV. 131, 167–68 (2012) ("There is substantial evidence that speculative bubbles can persist in markets: behavioral finance and behavioral economics have produced theories that help explain why bubbles can be sustained over time, even in supposedly efficient markets." (footnotes omitted)).

[250] *See* Mark Loewenstein & Gregory A. Willard, *The Limits of Investor Behavior*, 61 J. FIN. 231, 231 (2006) (explaining that models that attempt to use noise traders to violate the Law of One Price contain assumptions of unlimited liability and no constraints on wealth storage).

[251] *Id.* at 232.

[252] *See* Klock, *supra* note 182, at 200 ("Given the finite term of human life, it is impossible to conceive of a world without limited liability. The necessary existence of limited liability urges limits on credit. In reality, individuals cannot choose portfolios that are not feasible and cannot borrow unlimited amounts without collateral.").

[253] *See* Loewenstein & Willard, *supra* note 250, at 232 (explaining that these assumptions lead to inviolable properties of asset pricing without regard to investor rationality).

[254] *Id.* at 257.

reality."[255] I then emphasized in that same paper that "the most salient feature of a credit economy is limited liability" due to the "finite term of human life."[256] This limited liability in turn places limits on credit, and as such, individuals cannot realistically "choose portfolios that are not feasible and . . . borrow unlimited amounts without collateral."[257] "These assumptions," I argued, "are critically important."[258]

The beauty of any temporary market inefficiency in a liquid market is that it is self-correcting.[259] If there is an inefficiency, it will quickly be exploited until it disappears.[260] Free money lying around will not remain.[261] As Professor Bruce Johnsen observed,

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[255] Klock, *supra* note 182, at 200; *see id.* at 200 n.313 (quoting Professors Lowenstein and Willard as stating that the models "critically depend on the ability of investors to withdraw unreasonably large amounts of consumption from storage").

[256] *Id.* at 200.

[257] *Id.*

[258] *Id.*; *see* Lowenstein & Willard, *supra* note 250, at 232, 256 (explaining the assumptions upon which Professors Lowenstein's and Willard's conclusions were built). The professors write:

> We argue that many properties of asset prices can be derived without reference to specific assumptions about investor rationality, given minimum and natural assumptions about limited asset liability, market clearing, and limited storage withdrawals. Our paper does not provide a defense for either investor rationality or nonrationality . . . . [I]f one believes that limited asset liability, market clearing, and limited storage withdrawals are reasonable economic assumptions, then one must regard the implied properties of asset prices as inviolable since they are independent of investor rationality.
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> . . . .
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> The conclusions of this paper are built on the idea that certain economic principles limit the properties of asset prices independent of investor behavior, and that the limits implied by limited asset liability, market clearing, and limited withdrawals from the storage technology have been inadequately appreciated. Models that deviate from these assumptions risk offering misleading economic insights, no matter how tantalizing such insights may seem.

Id.

[259] *See* Rubinstein, *supra* note 15, at 19–20 ("Most basic is the idea that profitable trading strategies self-destruct. In practice, their profitability is limited by their tendency to move prices against themselves as they are exploited; eventually, the strategies are discovered by other investors, and the profitability is eliminated through overuse.").

[260] *See* MALKIEL, *supra* note 17, at 270 ("Eventually, however, any excesses in market valuations will be corrected.").

[261] *See* WELCH, *supra* note 124, at 362 (comparing the lack of arbitrage opportunities with the idea that money does not grow on trees).

an economist's prediction about what will happen to a fifty dollar bill on a table (it will disappear) is more accurate than a physicist's prediction (it will remain at rest).[262]

V. *HALLIBURTON V. JOHN*

The case of *Halliburton Co. v. Erica P. John Fund, Inc.* (*Halliburton II*)[263] initially began with the Erica P. John Fund, formerly known as the Archdiocese of Milwaukee Supporting Fund, filing a securities claim against Halliburton Co. and seeking certification of a class.[264] The underlying claim was based on financial misrepresentations made by Halliburton to mislead investors about its liability for asbestos claims, the adequacy of its reserves for paying pending claims, and "its probability of collecting revenue on unapproved claims on fixed-price construction contracts, which Halliburton knew its customers were not likely to pay," as well as misrepresented efficiencies in a corporate merger.[265] The claims were based on sections 10(b) and 20(a) of the Exchange Act and the Commission's Rule 10b-5.[266] These claims require the plaintiff to establish reliance, but under *Basic Inc. v. Levinson*, a rebuttable presumption of reliance is established via the FOMT doctrine.[267] To invoke the FOMT presumption, the securities must trade in an efficient market.[268] The plaintiff submitted expert and statistical evidence that Halliburton's misrepresentations impacted the price of Halliburton stock in the market.[269] Halliburton traded on the NYSE and was widely followed by analysts.[270]

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[262] D. Bruce Johnsen, Daubert, *The Scientific Method, and Economic Expert Testimony*, 9 KAN. J.L. & PUB. POL'Y 149, 151 (1999).

[263] 134 S. Ct. 2398 (2014).

[264] *Id.* at 2406.

[265] Brief for Respondent at 1, Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398 (2014) (No. 13-317), 2014 WL 356636, at *1.

[266] *Id.*

[267] *Halliburton*, 134 S. Ct. at 2405.

[268] *Id.*

[269] Brief for Respondent, *supra* note 265, at *2.

[270] *See id.* at *1 ("Halliburton stock is closely watched, as it trades on the New York Stock Exchange.").

In the district court, the case against Halliburton was dismissed because the plaintiff "failed to establish loss causation."[271] Applying precedent from the Fifth Circuit, the district court denied class certification.[272] The court of appeals affirmed, and the U.S. Supreme Court granted certiorari and reversed and remanded the case of *Erica P. John Fund, Inc. v. Halliburton Co.* (*Halliburton I*).[273] The *Halliburton I* Court held that loss causation was not relevant to class certification because loss causation is not relevant to a determination of whether the FOMT presumption applies.[274] The appropriate test for applying the FOMT presumption is whether the security trades in an efficient market.[275] Plaintiffs are not required to prove loss causation to invoke the FOMT presumption.[276] Hence, the Court reasoned that loss causation is not required at the certification stage.[277]

On remand, the district court granted the motion to certify the class, and the "Fifth Circuit affirmed, holding that price impact should not be decided as part of the class-certification determination."[278] Halliburton then requested a writ of certiorari, which the Court granted.[279] In *Halliburton II*, the appellant requested that the Court decide two questions. First, it requested that the Court overrule or modify *Basic*.[280] Second, Halliburton argued that it should be entitled to an opportunity to rebut the FOMT presumption of reliance at the certification stage by introducing evidence that the defendants' misstatements did not impact the price of the securities.[281]

Halliburton presented two basic arguments. First, it argued that *Basic* was wrongly decided because efficient markets do not

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[271] Erica P. John Fund, Inc. v. Halliburton Co., 131 S. Ct. 2179, 2184 (2011) (internal quotation marks omitted).

[272] *Id.* at 2183–84.

[273] *Id.* at 2184, 2187.

[274] Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2406 (2014).

[275] *Id.* at 2408.

[276] *Id.* at 2406.

[277] *Id.*

[278] Brief for Respondent, *supra* note 265, at *3–4.

[279] *Halliburton*, 134 S. Ct. at 2407.

[280] Brief for Petitioners at i, Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398 (2014) (No. 13-317), 2013 WL 6907610, at *i.

[281] *Id.*

incorporate all information, and so investors cannot be presumed to have relied on the misstatements.[282] In asking the Court to overrule or modify its 1988 holding, Halliburton sought to reverse what the plaintiffs called "a statutory interpretation precedent that Congress has left unchanged for more than a quarter century while enacting major legislation concerning private securities actions."[283] This was a high hurdle for the appellant to overcome, but one to which the Court was open to considering.[284] Halliburton's second argument was merely that it should have the opportunity to present evidence of a lack of price impact related to the alleged misrepresentations to rebut the fraud-on-the-market presumption at the class certification stage.[285] Otherwise, the rebuttable nature of the presumption becomes non-rebuttable in practice, since nearly all certified securities class actions are settled.[286]

A unanimous Court agreed with Halliburton's second argument—that a defendant to a securities class action should be entitled to present evidence that the misrepresentations had no impact on the price at the certification stage and should therefore be able to rebut the FOMT preemption of reliance before certification.[287] Justice Ginsburg filed a concurring opinion joined by Justices Breyer and Sotomayor emphasizing that the burden of rebutting the presumption rests with the defendant and that the Court's judgment "should impose no heavy toll on securities-fraud plaintiffs with tenable claims."[288] Of special significance in this debate, however, is a concurring opinion by Justice Thomas, joined by Justices Alito and Scalia, arguing that the Court should have

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[282] *See Halliburton*, 134 S. Ct. at 2409 (describing Halliburton's primary argument).

[283] Brief for Respondent, *supra* note 265, at i.

[284] *See* Amgen Inc. v. Conn. Ret. Plans & Trust Funds, 133 S. Ct. 1184, 1204 (2013) (Alito, J., concurring) ("As the dissent observes, more recent evidence suggests that the [FOMT] presumption may rest on a faulty economic premise.").

[285] *See Halliburton*, 134 S. Ct. at 2414 ("Even if plaintiffs need not directly prove price impact to invoke the *Basic* presumption, Halliburton contends that defendants should at least be allowed to defeat the presumption at the class certification stage through evidence that the misrepresentation did not in fact affect the stock price.").

[286] *See id.* at 2424 n.7 ("The absence of post certification rebuttal is likely attributable in part to the substantial *in terrorem* pressures brought to bear by certification.").

[287] *Id.* at 2414.

[288] *Id.* at 2417 (Ginsburg, J., concurring).

gone further and overturned *Basic*.[289] It is this conservative assault on *Basic*, FOMT, and the EMH that provokes the thesis of this Article. The EMH is not a hypothesis at all, but a fact—just as evolution is a fact[290]—and the FOMT presumption must survive to protect the integrity of the market and promote confidence in the market by the investing public. The open hostility of this conservative trio to all private enforcement of the federal securities laws is a worrisome threat to the future of investor protection.

The concurring opinion's assault on market efficiency exclusively cited authority published in law reviews which were not peer reviewed, and nearly all such literature was written by law professors without any formal training in economics.[291] These sources are non-experts' out-of-context interpretations of technical material which greatly distort and misrepresent our knowledge, much like a theologian's interpretation of Darwin's work might do.[292] In the words of one commentator:

> The instinct of legal academics to generalize from emerging social science data risks having the analyst herself commit a fundamental cognitive error—known to social scientists as the "fundamental attribution error" ("FAE"). The FAE results from the experimentally observed tendency of humans to make the mistake of overestimating the importance of fundamental human character traits and underestimating the importance of situation and context. Thus, analysts may have been too quick to assume that cognitive heuristics and biases are

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[289] *See id.* at 2418 (Thomas, J., concurring) ("*Basic* should be overruled.").

[290] *See* Lisa D. Kirkpatrick, Note, *Forgetting the Lessons of History: The Evolution of Creationism and Current Trends to Restrict the Teaching of Evolution in Public Schools*, 49 DRAKE L. REV. 125, 129 (2000) ("Darwin's work on evolution appeared to present unassailable proof of the fact of evolution.").

[291] *See Halliburton*, 134 S. Ct. at 2419–22 (Thomas, J., concurring) (citing law review articles as supportive authority).

[292] *See* Kristi L. Bowman, *Seeing Government Purpose Through the Objective Observer's Eyes: The Evolution-Intelligent Design Debates*, 29 HARV. J.L. & PUB. POL'Y 417, 429 (2006) ("[Evolution] has been a constant target of religiously driven criticism for the past 150 years.").

> dispositional rather than contextual as the work of Gigerenzer and others seems to demonstrate.[293]

The (most) conservative trio of Justices (Thomas, Scalia, and Alito) have been so openly hostile to the concept of allowing defrauded investors an opportunity to pursue a legal remedy that they have referred to private causes of action under Rule 10b-5 as "a relic of the heady days in which this Court assumed common-law powers to create causes of action."[294] These justices insisted that the Court had no proper role in creating private causes of action, as "the authority to fashion private remedies to enforce federal law belongs to Congress alone."[295]

In *Halliburton II*, the conservative Justices argued that *Basic* was overreaching to resolve a policy problem and was not entitled to the deference of *stare decisis* because it was not an interpretation of statutory text.[296] This hostility toward private causes of action is the basis for the conservative Justices' desire to abolish the FOMT doctrine. They asserted that *Basic* was wrong when it was decided, and hence the principle of *stare decisis* does not apply.[297] They opined that *Basic* should be overruled and the FOMT doctrine tossed out.[298] As they saw it, "[u]nderstanding where *Basic* went wrong requires an explanation of the 'reliance' requirement as traditionally understood."[299]

The conservative trio continued to accurately describe the reliance requirement in Exchange Act claims and the FOMT doctrine.[300] The plaintiff must establish reliance on a deceptive act by the defendant.[301] This requires transaction reliance, meaning

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[293] Robert E. Scott, *The Limits of Behavioral Theories of Law and Social Norms*, 86 VA. L. REV. 1603, 1643–44 (2000) (footnotes omitted).

[294] *Halliburton*, 134 S. Ct. at 2417 (Thomas, J., concurring) (citations omitted) (quoting Corr. Servs. Corp. v. Malesko, 534 U.S. 61, 75 (2001) (Scalia, J., concurring)).

[295] *Id.* (quoting Alexander v. Sandoval, 532 U.S. 275, 286–87 (2001)).

[296] *See id.* at 2425 ("But *Basic*, of course, has nothing to do with statutory interpretation.").

[297] *See id.* at 2418 ("Logic, economic realities, and our subsequent jurisprudence have undermined the foundations of the *Basic* presumption, and *stare decisis* cannot prop up the façade that remains.").

[298] *Id.*

[299] *Id.*

[300] *Id.* at 2418–19.

[301] *Id.* at 2418.

that the defendant's deception caused the plaintiff to enter into the transaction.[302] It also requires that the plaintiff's losses were caused by the deception.[303]

A strict reliance requirement could present problems of proof when transactions take place in a large, impersonal market like the NYSE.[304] Investors trading might not be aware of specific misstatements made by the issuer that impact the price of the stock.[305] For example, corporations that disseminate financial statements with grossly overstated earnings will have securities trading with prices that reflect those inflated earnings until the fraud is uncovered, but not all investors buying at the inflated price will have read the financial statements.[306] Additional challenges would arise in class action certification due to "the inherently individualized nature of the reliance inquiry."[307]

Back in 1988, the Court saved the private securities class action with its ruling in *Basic*.[308] The *Basic* Court held that reliance could be established indirectly with a rebuttable presumption if four elements were present.[309] First, there must be a false public statement.[310] Second, the security must trade in an efficient market.[311] Third, the transaction must have taken place after the

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[302] *See id.* (" 'Reliance by the plaintiff upon the defendant's deceptive acts is an essential element' of the implied 10b-5 private cause of action." (quoting Stoneridge Inv. Partners, LLC v. Scientific-Atlanta, Inc., 552 U.S. 148, 159 (2008))).

[303] *See id.* (requiring a showing that "the plaintiff has not just lost money as a result of the misstatement, but that he was actually *defrauded* by it" (alteration in original)).

[304] *See id.* at 2407–08 (majority opinion) (discussing problems that could arise out of a strict reliance requirement).

[305] *Id.* at 2407.

[306] *See id.* at 2408 ("[R]ather than scrutinize every piece of public information about a company for himself, the typical 'investor who buys or sells stock at the price set by the market does so in reliance on the integrity of that price' . . . ." (quoting Basic Inc. v. Levinson, 485 U.S. 224, 247 (1988))).

[307] *Id.* at 2419 (Thomas, J., concurring).

[308] *See* Jill E. Fisch, *The Trouble with* Basic*: Price Distortion After* Halliburton, 90 WASH. U. L. REV. 895, 896 (2013) ("The Supreme Court's decision in *Basic, Inc. v. Levinson* is widely credited with spawning a vast industry of securities fraud litigation by removing the requirement of individualized proof of reliance as an obstacle to class certification." (footnote omitted)).

[309] Basic Inc. v. Levinson, 485 U.S. 224, 247 (1988).

[310] *Halliburton*, 134 S. Ct. at 2408.

[311] *Id.*

public statement but before the truth was revealed.[312] Finally, the statement must be material.[313]

The basis for allowing the reliance requirement to be met indirectly is premised on economic theory.[314] As discussed previously, prices reflect all publicly available information in an efficient market.[315] Investors trading shares in an efficient market rely on the integrity of the market price, or the integrity of the public information on which the market price is based.[316] If an investor makes a transaction at a price based on a material false statement by an issuer, that investor can be deemed to have fulfilled the reliance requirement.[317] This is the essence of the FOMT doctrine which was firmly adopted in *Basic* and strongly reinforced by two-thirds of the Court in *Halliburton II*.[318]

The hostility to deterring fraud can be seen in the conservative Justices' argument that investors should have to individually prove reliance under 10(b) because 10(b) is an anti-fraud provision, and without proof of reliance it becomes a "scheme of investor's insurance."[319] Their analysis is rather incomplete. Anti-fraud statutes involve both restitution and deterrence.[320] The point of

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[312] *Id.*

[313] *Id.*

[314] *See id.* at 2410 ("Halliburton has not identified the kind of fundamental shift in economic theory that could justify overruling a precedent on the ground that it misunderstood, or has since been overtaken by, economic realities.").

[315] *See, e.g.*, Rubinstein, *supra* note 15, at 20 ("[T]here is a sense in which asset prices become hyper-rational; that is, they reflect not only the information that was cost-effective to learn and impound into prices but also information that was not worthwhile to gather and impound.").

[316] *See, e.g.*, Bradford Cornell & James C. Rutten, *Market Efficiency, Crashes, and Securities Litigation*, 81 TUL. L. REV. 443, 444 (2006) ("[A] plaintiff who purchased securities on an 'open and developed' market can be presumed to have relied on the integrity of the market price and in that way to have relied, indirectly, on allegedly false or misleading public statements of the defendants.").

[317] *See* Basic Inc. v. Levinson, 485 U.S. 224, 247 (1988) ("An 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 market price, an investor's reliance on any public material misrepresentations, therefore, may be presumed . . . .").

[318] *See Halliburton*, 134 S. Ct. at 2414 ("For the same reasons we declined to completely jettison the *Basic* presumption, we decline to effectively jettison half of it by revising the prerequisites for invoking it.").

[319] *Id.* at 2418 (Thomas, J., concurring) (internal quotation marks omitted).

[320] *See, e.g.*, Jon Carlson, Note, *Securities Fraud, Officer and Director Bars, and the "Unfitness" Inquiry After Sarbanes-Oxley*, 14 FORDHAM J. CORP. & FIN. L. 679, 696 (2009)

the securities laws is to foster high standards of ethical behavior, not to set the lower limits of what is permissible.[321] Consider, for instance, section 11 of the Securities Act.[322] It imposes strict liability for misstatements in the registration statement on everyone who signed the statement.[323] It insures investors who lose money for any reason, but only if there are material misstatements or omissions, which creates a powerful incentive for issuers to make sure that disclosure is complete.[324] Section 10(b) does not insure investors against losses; it merely facilitates recovery in the event of fraud and is designed to deter fraud as well as provide restitution.[325] Congress did not make issuers insurers, but Congress did make fraud in the issuance of securities a strict liability crime.[326] Section 10(b)'s protections in the secondary market are weaker than protections in the primary market because plaintiffs are required to prove scienter under section 10(b), but not under sections 11 and 12 of the Securities Act.[327]

The conservative trio objected to the FOMT doctrine based on two unsubstantiated empirical arguments. First, they asserted

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("The SEC's enforcement remedies were supposed to effectuate restitution of illegal investor losses, punish wrongdoers, and deter potential violators.").

[321] *See* Klock, *supra* note 16, at 491–92 (arguing that securities law liability should be designed to incentivize high ethical standards).

[322] Securities Act of 1933 § 11, 15 U.S.C. § 77k (2012).

[323] *See id.* (providing for strict liability for untrue material facts in the registration statement).

[324] *See* Merritt B. Fox, *Civil Liability and Mandatory Disclosure*, 109 COLUM. L. REV. 237, 239 (2009) ("Mandatory disclosure regimes seek to promote corporate transparency by requiring issuers to disclose information about themselves that they might otherwise not be inclined to release. A system that permits civil damages actions against persons associated with a mandatory disclosure violation can create incentives to encourage compliance.").

[325] *See generally* STEINBERG, *supra* note 42, at 243–46 (providing an overview of section 10(b)).

[326] *See* Jill E. Fisch, *The Overstated Promise of Corporate* Governance, 77 U. CHI. L. REV. 923, 943 (2010) ("Indeed, in regulating the IPO market, Congress used strict liability (mediated by affirmative defenses), a particularly strong form of regulation."); Brian Murray & Donald J. Wallace, *You Shouldn't Be Required to Plead More Than You Have to Prove*, 53 BAYLOR L. REV. 783, 785 (2001) ("Section 11[] provides for strict liability and monetary damages for an issuer found to have sold securities pursuant to a materially false or misleading registration statement . . . .").

[327] *See* Ernst & Ernst v. Hochfelder, 425 U.S. 185, 208 (1976) ("The express recognition of a cause of action premised on negligent behavior in § 11 stands in sharp contrast to the language of § 10(b) . . . .").

that public statements are not reflected in market prices.[328] Second, they asserted that investors do not rely on the integrity of the market.[329] These somewhat bizarre claims, however, are not supported with any empirical studies or citations to the economic literature. Rather, the claims are based on some surveys of economic literature written by law professors with no formal training in economic theory or methodology and published by law students without being subjected to peer review by economists.[330] It is especially ironic that this conservative trio found the strongest support for their reasoning in the writings of liberal securities law commentators such as Macey, Stout, and Langevoort.[331]

Of all the articles cited by the concurring Justices, only one is coauthored by legal commentators with some technical training in related fields—Professor Baruch Lev and Meiring de Villiers.[332] Professor Lev had a joint appointment in business and is an expert in accounting, and de Villiers was a law school graduate who was a Ph.D. student in economics at the time their article was written.[333] Their work, however, is suspect on two grounds. First, it was published in a law review and not subject to peer review.[334] As stated by Professor Gregory Mitchell, "[T]he controls on the use of legal decision theory scholarship as persuasive authority are weak (particularly when the work is published in non-peer-reviewed journals) . . . ."[335] Second, their work was related to consulting income, which creates a clear conflict of interest with academic independence.[336] It should also be noted that the concurring Justices took one quote from the article out of its context. The article does not argue that markets are regularly inefficient, but

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[328] *See* Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2420 (2014) (Thomas, J., concurring) (arguing that the Court's assumptions in *Basic* are flawed).

[329] *Id.*

[330] *See id.* at 2420–22 (citing eight articles for support).

[331] *See id.* (citing articles from Macey, Stout, and Langevoort).

[332] *Id.* at 2421 (citing Baruch Lev & Meiring de Villiers, *Stock Price Crashes and 10b-5 Damages: A Legal, Economic, and Policy Analysis*, 47 STAN. L. REV. 7 (1994)).

[333] Lev & de Villiers, *supra* note 332, at 7.

[334] *Id.*

[335] Mitchell, *supra* note 191, at 1929.

[336] *See* Lev & de Villiers, *supra* note 332, at 7 ("Professor Lev was an expert . . . in the . . . litigation described in this article.").

instead suggests that crash prices are an inappropriate benchmark for calculating damages.[337]

Another legal scholar has repeatedly and convincingly argued that legal commentators without training in research methods are inappropriately citing research out of context and drawing unwarranted conclusions.[338] In his criticism of legal scholars' reliance on "behavioral analysis of judgment and decision making to explain legal phenomena," Professor Gregory Mitchell breaks down the argument behind such analysis into two parts.[339] First, legal behaviorists argue that "[a]ll human cognition is beset by systematic flaws in the way that judgments and decisions are made, and these flaws lead to predictable irrational behaviors."[340] Second, "these widespread and systematic nonrational tendencies bring into serious question the assumption of procedural rationality underlying much legal doctrine."[341] Professor Mitchell responds by observing the psychological research that legal behaviorists have used to support this argument and argues that such research does not actually support the legal behaviorists' argument.[342] In reality, Professor Mitchell argues, the research "reveals greater adherence to norms of rationality than that implied by the legal behaviorists," and the limitations on the research render "extrapolation from experimental settings to real world legal settings often inappropriate."[343] As such, Professor Mitchell urges legal scholars to "exercise greater care and precision in their uses of psychological data to avoid advocating further legal reforms based on flawed understandings of psychological research."[344] Professor Mitchell further laments, "Just as troubling as the overreaching claims about human

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[337] *See id.* at 37 (listing the reasons why crash prices should not determine damages).

[338] *See* Mitchell, *supra* note 191, at 1911 ("Unfortunately, the facile way in which these scholars summarize and then incorporate psychological research findings into legal theory ignores important limitations on this research."); Mitchell, *supra* note 185, at 72 (stating that legal commentators "simplify and overgeneralize findings").

[339] Mitchell, *supra* note 191, at 1907.

[340] *Id.*

[341] *Id.*

[342] *Id.*

[343] *Id.*

[344] *Id.*

cognition that these scholars make is their uncritical acceptance by others."[345]

One such overreaching source relied on by the conservative trio of concurring Justices is Professor Lynn Stout's paper, *The Mechanisms of Market Inefficiency: An Introduction to the New Finance*.[346] This new finance authored by a non-professional in the finance discipline has been thoroughly discredited.[347] As an example of the lack of thoughtfulness and understanding demonstrated in this piece, examine the following example put forth by Professor Stout:

> [W]hen we modify CAPM to account for heterogeneous investor opinion, while still assuming perfect markets, price-moving arbitrage of the sort assumed by many commentators (and explored in detail by Gilson and Kraakman) becomes impossible. Indeed, *market equilibrium* becomes impossible.
>
> To see why this is so, imagine a highly simplified market with only one security, stock issued by Widget Corp. at $100 per share. Assume also that there are only two investors: Bull, who thinks Widget stock is worth $101, and Bear, who thinks it worth $99. In a perfect market with no risk aversion, wealth limitations, transactions costs, or restrictions on short selling, even this very modest disagreement makes an equilibrium price impossible. This is because Bull will see the chance to buy "undervalued" Widget stock as a money machine, and will buy and buy, until the supply of Widget stock is exhausted. The supply will never be exhausted, however, because Bear simultaneously sees a chance to make money by selling Widget stock short, and will borrow it, and borrow still more of it (presumably from Bull), to sell it short (again,

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[345] *Id.* at 1911.

[346] *See* Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2420 (2014) (Thomas, J., concurring) (citing Lynn A. Stout, *The Mechanisms of Market Inefficiency: An Introduction to the New Finance*, 28 J. CORP. L. 635 (2003)).

[347] *See* Klock, *supra* note 182, at 157–61 (deconstructing Professor Stout's commentary on market inefficiency).

> presumably to Bull). The end result is that Bull and Bear place infinite bets against each other, and no equilibrium emerges.[348]

Some problems exist with this example. First of all, the CAPM was long ago generalized to the situation of heterogeneous expectations by a highly regarded Harvard economist.[349] Citation to the literature is found in standard introductory level textbooks.[350] The results of the model remain the same, with the exception that the market price is interpreted as a weighted average of investors' expectations rather than a uniquely uniform expectation.[351] There are, however, more fundamental problems with the example. The model assumes values for all variables, so there is nothing to solve for.[352] It is analogous to assuming that $x=3$ and $y=5$, so x and y can never be equal.[353] Not much insight about the behavior of x and y can be revealed from such assumptions. Furthermore, the idea that Bull and Bear will place infinite bets reflects a fundamental misunderstanding of reality, much less economic theory.[354] In reality, the positions people can take are constrained by their wealth and access to credit.[355] No one has infinite wealth and no one has unlimited credit.[356] It is simply not possible that anyone could take such positions in real markets.[357] The example intended to make a point about the economics of markets is inherently not economics.[358] This is so

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[348] Stout, *supra* note 346, at 642–43 (alteration in original) (footnote omitted).

[349] *See generally* John Lintner, *The Aggregation of Investor's Diverse Judgments and Preferences in Purely Competitive Security Markets*, 4 J. FIN. & QUANTITATIVE ANALYSIS 347 (1969).

[350] *See, e.g.*, SHARPE ET AL., *supra* note 28, at 253 n.18 (referencing Lintner, *supra* note 349).

[351] *Id.* at 248.

[352] *See* Klock, *supra* note 182, at 159 ("A model of a market, or anything else, requires at least one endogenous variable—a variable that is determined by the model. Professor Stout's model has all of the variables set exogenously—by her assumptions." (footnote omitted)).

[353] *Id.* at 160.

[354] *See id.* (discussing the missing wealth constraint in Professor Stout's "model").

[355] *See id.* at 159 ("Nowhere in economics does the assumption of perfect markets include unlimited wealth. Selling short requires collateralized credit, and no one can short infinite amounts because no one can provide infinite collateral.").

[356] *Id.*

[357] *See id.* (noting that Stout's assumptions "are not even theoretically possible").

[358] *See id.* (calling Stout's version of law and economics "law and pseudo-economic nonsense").

because economics is all about decision making in the face of scarce resources.[359] The example given completely lacks scarcity.

The conservative Justices also relied on papers written by Professors Cox, Langevoort, Macey, Dunbar and Heller, and another by Professor Stout.[360] These are all respected securities law scholars, but they are not experts in economic methodology, and their observations come from surveying very technical material and drawing unwarranted inferences about the overall efficiency of the most liquid U.S. equity markets. The citation to Professor Macey draws on the following excerpt: "The 'opposite' of *Basic*'s assumption appears to be true; some investors 'attempt to locate undervalued stocks in an effort to "beat the market" . . . in essence betting that the market . . . is in fact inefficient.' "[361] What Macey put his fingers on is the well known efficient market paradox which posits that the more people disbelieve in efficiency, the more time and effort they will invest seeking information relevant to valuation and act on it.[362] This valuable activity of finding information and acting on it will work to make the market even more efficient.[363] Trading market activity is a force that stimulates efficiency, not evidence of inefficiency.[364]

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[359] *See, e.g.*, STIGLITZ, *supra* note 237, at 24 (defining economics as the study of how choices are made, and observing that scarcity is the reason choices are inevitable).

[360] *See* Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2419–22 (2014) (Thomas, J., concurring) (citing, in addition to the previous articles referenced *supra* notes 332 and 346: Cox, *supra* note 131; Dunbar & Heller, *supra* note 130; Langevoort, *supra* note 133; Donald C. Langevoort, *Taming the Animal Spirits of the Stock Markets: A Behavioral Approach to Securities Regulation*, 97 NW. U. L. REV. 135 (2002); Jonathan R. Macey, *The Fraud on the Market Theory: Some Preliminary Issues*, 74 CORNELL L. REV. 923 (1989); Stout, *supra* note 187).

[361] *Id.* at 2422 (quoting Macey, *supra* note 360, at 925).

[362] *See* Mark Klock, *Dead Hands–Poison Catalyst or Strength-Enhancing Megavitamin? An Analysis of the Benefits of Managerial Protection and the Detriments of Judicial Interference*, 2001 COLUM. BUS. L. REV. 67, 133 ("The paradox is that the market is more efficient because people act as if it is not. That is, people invest heavily in resources to create information which they can use to make good investment decisions, but because large numbers of people are doing this, prices already reflect the information and individuals are not able to profit from the information." (footnote omitted)).

[363] *See* Rubinstein, *supra* note 15, at 20 (describing how information gathering and acting on it makes markets efficient).

[364] *See id.* at 22 (describing how active trading by funds promotes hyper-rationality in stock pricing).

Arguing that the market is not efficient without citing a substantial consensus of support from the community of financial economists is equivalent to taking judicial notice of an unsubstantiated fact. It is a poor way to attempt to resolve a case.

The second argument the conservative Justices posited is that investors do not rely on the integrity of the market; this is based on another unwarranted assumption—that most transactions in the market are conducted by speculators.[365] This requires discussion of investing and speculating. Investors are typically thought of as people who take moderate risk and buy and hold securities for long-term investment.[366] Speculators are typically thought of as people who take bigger risks and buy securities that they think are undervalued with the hope of turning a quick profit.[367] As I have pointed out previously, investing, speculating, and gambling all fit the same definition and simply carry slightly different connotations.[368] The definitions of all three words involve sacrificing current purchasing power with the expectation of receiving more in the future.[369] Since speculating and investing are not different in bright line terms, it is not possible to conclude that most trades are speculative. I am not aware of any economic literature that concludes that, and the concurrence by the conservative trio cites to none. I am similarly unaware of any justification for providing speculators with less protection against

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[365] *See Halliburton*, 134 S. Ct. at 2422 (Thomas, J., concurring) ("It cannot be seriously disputed that a great many investors do *not* buy or sell stock based on a belief that the stock's price accurately reflects its value. Many investors in fact trade for the opposite reason—that is, because they think the market has under- or overvalued the stock, and they believe they can profit from that mispricing.").

[366] *See* SHARPE ET AL., *supra* note 28, at 1 ("Investment, in its broadest sense, means the sacrifice of current dollars for future dollars.").

[367] *See* Lynn A. Stout, *Why the Law Hates Speculators: Regulation and Private Ordering in the Market for OTC Derivatives*, 48 DUKE L.J. 701, 735 (1999) ("Theorists generally use the word 'speculator' to refer to someone who purchases an asset with the intent of quickly reselling it, or sells an asset with the intent of quickly repurchasing it.").

[368] *See* Klock, *supra* note 362, at 151 ("[S]aving, investing, speculating, and gambling have the same definitions, just different connotations involving the level, and perhaps reasonableness, of the risk.").

[369] *Id.* at 151 n.416.

fraud than more prudent investors. I have argued elsewhere that speculators fulfill socially valuable functions.[370]

What these anti-private enforcement action Justices argued is that investors transacting in the market as speculators are not relying on the integrity of the market *because* they are buying securities that they believe are mispriced.[371] There is a disconnect with reality somewhere in that reasoning. When someone buys a stock that he believes is selling for a bargain price, it does not necessarily mean that he believes the market lacks integrity or that the current price is not based solely on non-fraudulent information in a market that the buyer somehow understands better than the rest of the world. To illustrate this with some clarity, consider an investment alternative—a lottery ticket. People generally understand that a lottery ticket is not a great investment, but some people buy them anyway with a slim hope of winning big, as well as the fun associated with playing and the knowledge that the revenue is earmarked for a good cause such as funding public schools. Certainly, people also expect that the lottery is run with integrity. Is it reasonable to believe that lottery players would continue to play if it was revealed that the lottery was not being run with integrity, but instead was being administered fraudulently with predetermined winners? The notion that investors do not rely on the integrity of the market merely because they are trying to turn a profit is another round of judicial notice of an unsubstantiated fact. I do not see any logic underlying this argument.

The idea that material public statements pertaining to actively traded, liquid U.S. equities are not reflected in prices is false, unsubstantiated with expert authority, and simply not logical.[372]

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[370] *See id.* at 153–54 ("First, trading by speculators increases liquidity for non-speculators. Second, there are economies of scale in market-making so that everyone obtains lower costs for their trades due to the trading activity of speculators. Third, increased trading directly contributes to price discovery. Fourth, increased trading supports more financial analysis, which further contributes to more information in the market, better price discovery, and more convergence of expectations. Fifth, and very importantly, increased financial analysis results in lower agency costs and more effective corporate governance." (footnotes omitted)).

[371] Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2422 (2014) (Thomas, J., concurring).

[372] *See* WELCH, *supra* note 124, at 349 (observing that the U.S. financial markets "seem reasonably close to perfect and thus efficient," and that, given the highly competitive nature

Efficiency simply means that prices adjust to the available information sufficiently rapidly such that there are no unexploited opportunities to pick up easy money without risk.[373] Countless studies have determined that a randomly selected portfolio will average as well as a professionally managed portfolio.[374] This implies that the market incorporates material information into prices reasonably well, and if false information has been injected into the market which is material to pricing, the price can be expected to incorporate it, and investors buying or selling can be deemed to have relied on that false information, even if they were not specifically aware of it.[375]

The idea that investors do not rely on market integrity is also false. As Professor Ausubel demonstrated over two decades ago, investors' level of confidence in the integrity of the market affects their investment in the market.[376] The lower their confidence in the market, the lower their investment.[377] It is simple intuition even if the mathematical proof is complicated.[378] Had the Justices simply researched the economic literature, they would not have put such poorly reasoned arguments into their opinions, no matter how hostile they were to private enforcement of anti-fraud laws.

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of the markets and the millions of investors, "it seems unlikely that some investors have real inside information. . . . [or] could outsmart the prices in such markets").

[373] *See id.* ("The fact that large-firm stock markets are pretty efficient means that, by and large, you can trust these financial markets to get asset values about right—at least within the limits of the typical transaction costs—and to get it right *immediately*.").

[374] *See generally* MALKIEL, *supra* note 17, at 178–86 (discussing the evidence that professional investors cannot beat the market consistently for long periods of time).

[375] *See Halliburton*, 134 S. Ct. at 2411 ("But to indirectly rely on a misstatement in the sense relevant for the *Basic* presumption, [the investor] need only trade stock based on the belief that the market price will incorporate public information within a reasonable period.").

[376] *See* Ausubel, *supra* note 165, at 1038 ("If outsiders expect that insiders will take advantage of them at later stages, then outsiders may choose to invest less at the beginning.").

[377] *See id.* at 1023 ("When confidence is promoted, outsiders and insiders may benefit alike.").

[378] *See id.* (outlining the intuition of the model).

VI. CONCLUSION

Legal scholars who favor regulatory intervention have an unwarranted bias against economics.[379] Although economic arguments have been repeatedly advanced as favoring laissez-faire policies, economic models are actually the friend of the regulator, as regulation is often justified with economic theory.[380] The policies of laissez-faire are based on overly simplified models with unrealistic assumptions such as full information.[381] More recent economic advances demonstrate that many market problems result from incomplete and asymmetric information.[382] Regulation calculated to improve the flow of information and reduce information asymmetry can improve the performance of markets.[383]

An important set of tools for regulators consists of the incentives to deter fraudulent information from entering the market.[384] Liability in private lawsuits for introducing fraudulent

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[379] *See* Mitchell, *supra* note 191, at 1911 ("These scholars also evince a 'pessimism bias' in their work . . . .").

[380] *See* Paul B. Stephan III, *Barbarians Inside the Gate: Public Choice Theory and International Economic Law*, 10 AM. U. J. INT'L L. & POL'Y 745, 749 n.3 (1995) ("Regulation is also beneficial (i.e., conducive to net welfare enhancement) if it corrects information asymmetries or the overproduction of goods that generate negative externalities, i.e., costs to society for which the producer does not have to account. The occasions on which economists believe that private markets fail to generate the economically efficient level of goods are described as market failures, and regulation has the best chance of improving social welfare in those cases where market failure exists.").

[381] *See* Stiglitz, *supra* note 238, at 460 (observing that arcane economic theory "suggested that we could, by and large, rely on markets *without government intervention*" (alteration in original)).

[382] *See id.* at 461 ("One of the main results of our research was to show . . . that even a small amount of information imperfection could have a profound effect on the nature of the equilibrium.").

[383] *See* Adam D. Hirsh, Comment, *Applying Section 12(2) of the 1933 Securities Act to the Aftermarket*, 57 U. CHI. L. REV. 955, 975 (1990) ("Increasing the flow of information, moreover, promotes market confidence by raising the integrity of the securities industry . . . .").

[384] *See* Steven J. Cleveland, *The NYSE as State Actor?: Rational Actors, Behavioral Insights & Joint Investigations*, 55 AM. U. L. REV. 1, 37 (2005) ("Because market incentives may lead to sub-optimal disclosure, rules that bar fraud may fill the void." (footnote omitted)).

information is a powerful disincentive.[385] Those who dishonestly attempt to manipulate the market for their own personal gain damage the functionality and the integrity of the market.[386] Good policy would facilitate recovery by injured investors against those injecting fraudulent information and would accomplish both a remedial and deterrent effect.[387]

Highly liquid U.S. equities trade in an efficient market that prices all information, including misinformation.[388] Investors rely on the integrity of the pricing process.[389] When false information is injected into the market and investors sell at deflated prices or buy at inflated prices, they have undoubtedly relied on the misinformation.[390] Allowing class action certification for injured investors is important for the principles of making damaged parties whole and deterring bad behavior.[391]

Justices Alito, Scalia, and Thomas argued that *Basic* should be overruled.[392] If any case should be overturned, it should be *Central Bank*.[393] Referring to *Central Bank*, Professor Marc

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[385] *See* Mark Klock, *Lessons Learned from Bernard Madoff: Why We Should Partially Privatize the Barney Fifes at the SEC*, 42 ARIZ. ST. L.J. 783, 828 (2010) ("Private liability for aiding and abetting fraud will foster a culture of integrity in our markets because financial market participants will conduct themselves in a manner designed to avoid litigation.").

[386] *See* Mark Klock, *What Will It Take to Label Participation in a Deceptive Scheme to Defraud Buyers of Securities a Violation of Section 10(b)? The Disastrous Result and Reasoning of* Stoneridge, 58 U. KAN. L. REV. 309, 345 (2010) ("In financial markets, the cost of dishonesty is particularly severe.").

[387] *See id.* at 336 ("Expansion of liability for aiding and abetting securities fraud provides the appropriate remedy—a market-based incentive structure.").

[388] Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2408 (2014).

[389] *See id.* at 2411 (stating that even value investors rely on the integrity of the market).

[390] *Id.* at 2417.

[391] *See* Joel Seligman, Comment, *The Merits Do Matter: A Comment on Professor Grundfest's* "Disimplying Private Rights of Action Under the Federal Securities Laws: The Commission's Authority," 108 HARV. L. REV. 438, 456 (1994) ("Given the limited resources available for the enforcement of its mandatory disclosure system, private litigation has been frequently recognized as performing a useful augmentative deterrent, as well as compensatory, role. To date, the attack on the securities class action has generally been disconnected from the mandatory disclosure system it seeks to enforce. If the mandatory disclosure system is worth preserving, we must ensure that reductions in the effectiveness of the class action do not produce a corresponding weakening of the disclosure system. This weakness is potentially the most serious consequence of far-reaching new restrictions in the private enforcement of the federal securities laws." (footnotes omitted)).

[392] *Halliburton*, 134 S. Ct. at 2418 (Thomas, J., concurring).

[393] Cent. Bank of Denver v. First Interstate Bank of Denver, 511 U.S. 164 (1994).

Steinberg stated that the decision "delighted 'deep pockets,' shocked the plaintiff's bar, and befuddled neutral observers" by doing away with "decades of lower court precedent that nearly universally recognized the property of aiding and abetting liability in private actions under section 10(b) of the Exchange Act and under Rule 10b-5."[394]

Another commentator wrote of the case, "The Supreme Court discarded a doctrine that had not only been accepted by all the circuits but had matured and become predictable, and there was no evidence the doctrine had created mischief in its wake."[395] *Central Bank* wrongly decided a question that was not raised by the parties.[396] If ever there was a securities law case that should be overturned, it is that one. Indeed, it was so wrongly decided that Congress legislatively reversed it a year later in the Private Securities Litigation Reform Act,[397] which expressly made aiding and abetting a securities law violation a federal crime.[398] Unfortunately for investors and those who wish to deter fraud, the Court has refused to permit a private right of action for this crime.[399]

Clearly, Justices Alito, Scalia, and Thomas have been hostile to private causes of action against corporations engaged in fraud on the market. They have utilized any available arguments, including poor ones, to support their assault against private causes of action, even if those arguments are provided only by

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[394] Steinberg, *supra* note 77, at 489.

[395] James D. Cox, *Just Deserts for Accountants and Attorneys After* Bank of Denver, 38 ARIZ. L. REV. 519, 545 (1996).

[396] *See Cent. Bank*, 511 U.S. at 194–95 (Stevens, J., dissenting) ("[I]nstead of simply addressing the questions presented by the parties, on which the law really was unsettled, the Court *sua sponte* directed the parties to address a question on which even the petitioner justifiably thought the law was settled, and reaches out to overturn a most considerable body of precedent.").

[397] Private Securities Litigation Reform Act of 1995, Pub. L. No. 104-67, 109 Stat. 737 (codified as amended in scattered sections of 15 U.S.C.).

[398] *See* Klock, *supra* note 386, at 321–22 ("However, one important provision was included in the Act in reaction to *Central Bank*. That provision expressly authorized the SEC to bring enforcement actions for aiding and abetting violations of federal securities laws." (footnote omitted)).

[399] *See* Stoneridge Inv. Partners, LLC v. Scientific-Atlanta, Inc., 552 U.S. 148, 162 (2008) ("Aiding and abetting liability is authorized in actions brought by the SEC but not by private parties.").

opining commentators without economic training who have surveyed the literature and assembled tidbits out of context. Fortunately for markets and the investing public, efficient market theory has endured more than a quarter of a century of assault and will continue to live on.