

FRAUD ON A NOISY MARKET

by
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Behavioral finance raises questions about market efficiency, suggesting that securities prices are influenced by “noise traders,” whose trades are motivated by behavioral biases. This creates a conundrum for the fraud on the market theory. While some fraud remedy is arguably necessary to ensure adequate disclosure, behavioral finance raises doubt about the efficiency of fraud remedies in noisy markets. These issues are particularly important in the wake of the Supreme Court’s opinion in Dura Pharmaceuticals, Inc. v. Broudo, which tightens proof of loss causation in fraud on the market cases and creates uncertainty about the future of the fraud on the market theory. This Article argues for interpreting Dura to sharply constrain the fraud on the market theory. It also proposes dealing with the need to deter fraud by allowing state courts and legislatures to supplement federal liability. More broadly, this Article suggests that, contrary to the assertions of many of its proponents, the indeterminacy of behavioral economics generally, and behavioral finance in particular, may support reducing rather than increasing legal paternalism.

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The field of behavioral finance has had a bull market, particularly since the millennial bubble and its popping. The literature not only shows many ways in which individuals make mistakes, but also indicates that markets as well as individuals may be irrational. This challenges the efficient capital markets hypothesis that securities prices approximate fundamental asset values.

It is not yet clear how these insights relate to law. On the one hand, if markets are less efficient than theorists once believed, this suggests that securities laws need to be changed to better protect investors from their misjudgments. It might also follow that the law needs to intervene in corporate law because securities prices might not be the guide to corporate valuations they were once thought to be. This is consistent with the broader tendency of behavioral economics to support paternalistic interventions.¹

On the other hand, the behavioral finance literature might actually weaken the case for regulation. Federal securities regulation assumes that investors rely on and markets reflect new information in predictable ways. It follows that disclosure regulation has evident benefits. But if, instead, market prices are moved other than by information, the regulatory prescription is no longer clear. Even if more information makes irrational markets more efficient, without a clear view of how the market processes information, regulation and liability may do more harm than good. Forcing corporations or insiders to pay damages linked to the market's irrational response to disclosures may have perverse effects, including discouraging disclosure. Thus, while noise theories are "doctrinally threatening" to securities regulation scholars,² the threat may be mainly to proponents of regulation.

Although behavioral finance obscures the appropriate regulatory path, it remains the case that encouraging the disclosure of more and better information

¹ See Jonathan Klick & Gregory Mitchell, *Government Regulation of Irrationality: Moral and Cognitive Hazards*, 90 MINN. L. REV. (forthcoming June 2006) (manuscript at 4 n.3), available at <http://ssrn.com/abstract=766824> (reviewing paternalistic suggestions by legal scholars writing on behavioral economics).

² See Donald C. Langevoort, *Theories, Assumptions, and Securities Regulation: Market Efficiency Revisited*, 140 U. PA. L. REV. 851, 911 (1992). The complexity of the political configuration is suggested by the fact that the main Supreme Court brief of the plaintiff-respondent in the *Dura* case repeatedly cites in support of its position an article by Daniel Fischel. The irony is that Fischel's expert efficient-market-based testimony for fraud on the market defendants led him to a bitter fight with the principal of the *Dura* plaintiff's law firm, William Lerach, ending in a multi-million dollar payment by Lerach to Fischel. See Jeffrey Toobin, *The Man Chasing Enron*, THE NEW YORKER, Sept. 9, 2002, at 86.

might increase market efficiency and social wealth. Some form of mandatory disclosure therefore arguably should survive the new learning about market irrationality. But the market's potentially irrational response to information raises doubts about the scope of liability for incomplete disclosure, and specifically about the fraud-on-the-market (FOM) theory, especially in light of the Supreme Court's recent opinion in *Dura Pharmaceuticals, Inc. v. Broudo*.³

The uncertain state of the FOM theory suggests that, instead of an exclusive federal remedy, the states should be allowed to experiment with alternative approaches and ways to balance costs and benefits that reflect, among other things, emerging developments in behavioral finance. For example, corporations might be permitted to choose the applicable state disclosure law just as they do the law governing their internal governance—that is, through their choice of the incorporating state. Where federal law denies relief because of the uncertainties created by behavioral finance, faulty disclosures could be policed through state class and derivative actions.

This Article proceeds as follows. Part I provides a brief overview of theories of investor irrationality. Part II discusses the issues these theories raise for securities regulation and liability. Part III reviews the development of the FOM theory, focusing on the two Supreme Court cases. Part IV shows how behavioral finance supports significant narrowing of the fraud on the market theory, and that this narrowing is consistent with the Court's recent decision in *Dura*. Part V suggests that this narrower federal protection might efficiently be supplemented by state law and private regulation. Part VI concludes with some broader implications of the analysis.

I. AN OVERVIEW OF BEHAVIORAL FINANCE

The behavioral finance literature represents two distinct sets of problems for corporate and securities law. First, as discussed in Section A, individual investors may not rationally update their views of asset values based on new information. They therefore buy, sell, or hold at prices that do not reflect the value of the underlying assets. This would not necessarily be a problem for the market as a whole if rational investors intervened quickly and moved prices toward asset values. This leads to a second and distinct set of problems, discussed in Section B, relating the market's capacity to self-correct.

A. *The Irrationality of Individual Investors*

The behavioral finance literature has metastasized over the last 25 years.⁴ In general, behavioral finance has identified several kinds of mistakes that

³ 125 S.Ct. 1627 (2005).

⁴ See Victor Ricciardi, *A Research Starting Point for the New Scholar: A Unique Perspective of Behavioral Finance* (Mar. 2005), available at <http://ssrn.com/abstract=685685>. For overviews of the literature, see Nicholas C. Barberis & Richard H. Thaler, *A Survey of Behavioral Finance*, in 1B HANDBOOK OF THE ECONOMICS OF FINANCE 1054 (George M. Constantinides et al. eds., 2003); Stephen J. Choi & A.C. Pritchard, *Behavioral Economics and the SEC*, 56 STAN. L. REV. 1, 14 (2003); Ronald J. Gilson & Reinier Kraakman, *The*

investors frequently make. Many are “heuristic” errors that result from people’s efforts to understand a complex world.⁵ Because people tend to make the same types of mistakes, these errors do not necessarily cancel out in the aggregate.

The important heuristic errors for purposes of behavioral finance include making decisions that are “anchored” in or “confirm” initial estimates, and therefore fail adequately to account for new information; over-relying on evidence that is salient or “available”; willingness to assume that samples represent the larger group, such as the gambler’s fallacy that a few tosses of the coin determine the result on the next toss, or assuming that earnings will regress to the mean; the related “hindsight” bias, or tendency to evaluate the past in terms of the present; over-conservatively “anchoring” predictions in the past; attributing good results to one’s own efforts, and the related illusion that the decision-maker’s acts control results; excessive conservatism, or the tendency to see new facts as confirming existing trends; and overconfidence in these judgments despite the prevalence of errors.⁶

Some judgment errors may result from inappropriate “framing”—that is, seeing identical things as different depending on how the choice is presented. For example, people have been shown to have a greater aversion to losses than to gains, which makes them tend to hold onto losers longer than winners even where a rational decision-maker would treat the two choices as equivalent.⁷ Investors and others also may demand a higher price for something they already own (i.e., in which they have an “endowment”) than they would pay for something they do not own, another factor that might impede investors from selling losers when they rationally should.

The list of judgment errors goes on, as indicated by Ricciardi and Simon’s chart of almost 40 different behavioral finance research topics, many of which are theories about how investors are influenced by behavioral biases.⁸ One might reasonably question the premises and many of the conclusions of behavioral finance theory. Indeed, Choi and Pritchard have remarked that, “[a]fter perusing the growing behavioral finance literature, we wonder how

Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias, 28 J. CORP. L. 715 (2003); Donald C. Langevoort, *Taming the Animal Spirits of the Stock Markets: A Behavioral Approach to Securities Regulation*, 97 NW. U. L. REV. 135 (2002); Robert Prentice, *Whither Securities Regulation? Some Behavioral Observations Regarding Proposals for its Future*, 51 DUKE L.J. 1397 (2002).

⁵ See HERSH SHEFRIN, *BEYOND GREED AND FEAR: UNDERSTANDING BEHAVIORAL FINANCE AND THE PSYCHOLOGY OF INVESTING*, Ch. 2 (2002).

⁶ This problem particularly infected day-traders at the height of the dot com boom. See Andrew W. Lo, et al., *Fear and Greed in Financial Markets: A Clinical Study of Day-Traders* (MIT Sloan School of Management, Working Paper No. 4534-05, 2005), available at <http://ssrn.com/abstract=690501>.

⁷ See Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 ECONOMETRICA 263, 279 (1979). Recent work suggests that these results actually may be attributable to a preference for the status quo over change. See David Gal, *A Psychological Law of Inertia and the Illusion of Loss Aversion* (Sept. 2005), available at <http://ssrn.com/abstract=831104>.

⁸ Victor Ricciardi & Helen K. Simon, *What is Behavioral Finance?*, 2 BUS., EDUC. & TECH. J. 26–34 (2000).

investors are able to make any positive return from the market.”⁹ For the rest of this Article, however, I will assume the literature’s major conclusions and pursue its legal implications.

B. Can the Market Do Better?

Even assuming individual investors make the judgment errors discussed in subpart A, there is still a question as to whether the market as a whole is “noisy” in the sense of being affected by behavioral biases. There are several reasons why these biases need not affect markets even if they affect individual investors. First, market prices move on signals from trading rather than the trades themselves. Outsiders who are most likely to be moved by judgment errors rather than information send the weakest signals.

Second, investor biases may cancel out.¹⁰ For example, even if investors are subject to the “confirmation” bias, they may be influenced by many different sets of past decisions. Also, while people may tend to underestimate low-probability risks, such as that of fraud, they may also overestimate risks that are salient in the news, such as fraud after Enron.

Third, and most importantly, investors are not equal in education, intelligence, or expertise. Wiser investors can buy or sell when they see that prices have become too divorced from “rational” values. This is often referred to as “arbitrage” because the traders seek to make money on a short term difference between current prices and rational expectations that should disappear over the long run.

Despite these theoretical advantages of markets over individuals, there is evidence indicating persisting pricing anomalies, such as the divergence between the public share prices of closed end funds and of the publicly traded shares in their portfolios,¹¹ where securities prices diverge for extended periods from what would be expected under a rational valuation model.¹² The prevalence of cognitive and psychological errors such as overconfidence arguably may cause noise to persist.¹³ The divergence may be substantial during bubbles, or what Robert Schiller and Alan Greenspan call “irrational exuberance.”¹⁴

Examples of pricing anomalies include evidence of return reversals from stocks’ previous performance and that this pricing reflects investors’ expectations as to stock returns¹⁵ rather than the stocks’ higher systemic risk, as

⁹ See Choi & Pritchard, *supra* note 4, at 14.

¹⁰ See generally Ronald J. Gilson & Reinier Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549 (1984).

¹¹ See Charles M.C. Lee, et al., *Investor Sentiment and the Closed-End Fund Puzzle*, 46 J. FIN. 75, 78 (1991).

¹² See generally Barberis & Thaler, *supra* note 4 (analyzing pricing anomalies).

¹³ See Fischer Black, *Noise*, 41 J. FIN. 529, 529 (1986); J. Bradford DeLong, et al., *The Survival of Noise Traders in Financial Markets*, 64 J. BUS. 1, 2 (1991).

¹⁴ See ROBERT J. SHILLER, *IRRATIONAL EXUBERANCE* (2d ed. 2005).

¹⁵ See *id.* at 87.

Fama and French have argued.¹⁶ There is also evidence of irrational market reactions to earnings announcements.¹⁷ The market may under-react to actual earnings, perhaps because of the confirmation, representativeness or other judgment biases, so that stock returns only “drift” up or down in response rather than reacting immediately as they would in an efficient market. Analysts may overreact to the trend by predicting its continuation and then overreact negatively when earnings fall, especially when the media attributes the drop to a specific cause.

This leads to the question why less biased traders do not correct errant markets. Several explanations have been offered for the arbitrage imperfections that cause pricing anomalies to persist.¹⁸ First, even if prices inevitably will adjust back to expected values, these expectations turn on fundamental or systemic risks that affect the whole market and cannot be eliminated through diversification. Something might happen to unsettle the market (the Asian/Russian debt crisis, 9/11) and make the bet not pay off. Since arbitrageurs, like other investors, are risk averse, they may not want to make the big bets that are necessary to keep prices in equilibrium.

Second, in order to compensate for investor biases, arbitrageurs have to be able equally to buy and to sell so they can correct problems both on the upside and on the downside. But regulatory limitations on short-selling limit arbitrageurs’ ability to sell and thereby to correct market overvaluations.¹⁹

Third, even if arbitrageurs can recognize noise, they also need to have some idea when the noise will go away. The potential persistence of noise increases the cost of arbitrage, and therefore reduces the amount.²⁰ Long Term Capital Management operated on the theory that disparities in securities that should be priced equally eventually would disappear. Unfortunately, contrary to its name, LTCM could not hold on for the long term when their very big bets went awry in a very bad short term. In retrospect LTCM might have done better buying into the noise than trying to arbitrage around it, as many institutions and traders did during the dot com bubble.

Fourth, even if sophisticated investors recognize noise and have some idea about its persistence, their performance is evaluated by the same irrational

¹⁶ See generally Eugene F. Fama & Kenneth R. French, *The Cross-Section of Expected Stock Returns*, 47 J. FIN. 427 (1992); Eugene F. Fama & Kenneth R. French, *Multifactor Explanations of Asset Pricing Anomalies*, 51 J. FIN. 55, 74 (1996).

¹⁷ See SHEFRIN, *supra* note 5, at 92–103 (summarizing theories and providing an illustration); Michael Kaestner, *Investors’ Misreaction to Unexpected Earnings: Evidence of Simultaneous Overreaction and Underreaction* (Nov. 2005), available at <http://ssrn.com/abstract=868346> (showing evidence of both short-term underreaction to earnings announcements and long-term overreaction to past unexpected earnings).

¹⁸ For summaries see Gilson & Kraakman, *supra* note 4; Barberis & Thaler, *supra* note 4; Prentice, *supra* note 4; Langevoort, *supra* note 4.

¹⁹ See SEC Rule, 17 C.F.R. §§ 240.10a-1–10a-2 (2005) (prohibiting short sales at below a security’s last reported price and related activities); Jonathan R. Macey, et al., *Restrictions on Short Sales: An Analysis of the Uptick Rule and its Role in View of the October 1987 Stock Market Crash*, 74 CORNELL L. REV. 799, 811 (1989).

²⁰ See Black, *supra* note 13, at 532.

investors who are causing the anomaly. While markets may adjust in the long term, fund managers are evaluated in the short-term, and therefore may manage for short term noise rather than long-term rational expectations.²¹

Fifth, arbitrage arguably may be limited by the experts' judgment errors and incentives. For example, the professionals who are supposed to be setting the market straight may have incentives to keep it misguided. For example, analysts may recommend companies that reciprocate with investment banking business.²² Also, companies have an incentive to manage their earnings and earnings forecasts consistent with investors' irrational expectations of trends.²³ Moreover, market professionals, like investors, exhibit overconfidence, gambler's fallacy, anchoring, confirmation, loss-aversion, and availability biases.²⁴

II. BEHAVIORAL FINANCE AND SECURITIES REGULATION

How should the law react to theory and evidence of market irrationality? Lawmakers might help ensure that investors make the right decisions. But there are several potential problems with regulatory initiatives aimed at reducing individual investors' errors. The theories and evidence are complex, conflicting, and incomplete and different problems apply to different investors at different times.²⁵ There is no general theory that can determine who will make a particular cognitive or heuristic error and when they will make it.²⁶ This makes it very difficult to decide when and how the law should intervene to avoid making things worse. For example, different problems may be operating simultaneously, so that solving one exacerbates another. And the rapidly developing finance literature ultimately may undercut the rationale of a once

²¹ See Andrei Shleifer & Robert W. Vishny, *The Limits of Arbitrage*, 52 J. FIN. 35, 54 (1997).

²² This practice was prevalent during the dot com boom and was explicitly addressed by Sarbanes-Oxley. See Sarbanes-Oxley Act of 2002, 15 U.S.C. § 501, adding 15 U.S.C. § 78kk (2000) (dealing with analyst conflicts).

²³ See SHEFRIN, *supra* note 5, at 265–69.

²⁴ See *id.* Chapters 5, 6, and 9. However, there is recent evidence that the behavior of more informed investors differs from that of the less informed. See Paul A. Griffin & Ning Zhu, *Are All Individual Investors Created Equal? Evidence from Individual Investor Trading Around Securities Litigation Events* (June 2005), available at <http://ssrn.com/abstract=740485> (study of trading of shares involved in securities fraud class actions showing that more informed investors are more likely than less informed investors to sell during the class period, thus exhibiting less loss aversion).

²⁵ See Choi & Pritchard, *supra* note 4, at 10 (noting the “hodgepodge” of evidence on behavioral finance).

²⁶ See Gregory Mitchell, *Why Law and Economics' Perfect Rationality Should Not Be Traded for Behavioral Law and Economics' Equal Incompetence*, 91 GEO. L.J. 67, 73 (2002).

seemingly sound regulatory approach.²⁷ The following subparts discuss some regulatory pitfalls.

A. *Litigation Issues*

Even if theory has identified a particular problem, courts may not be able accurately to identify the situations when liability should apply. For example, where sellers deliberately prey on investors' emotions or biases,²⁸ the law might impose liability even for true disclosures that are materially misleading in light of investor judgment biases. But this would eliminate material falsity as a way to screen out frivolous suits. Plaintiffs could take advantage of this rule to allege claims based on true statements coupled with plausible allegations of deliberate misleading that could survive dismissal.

B. *Effect on Investors' Incentives to Trade*

Disclosure liability might increase investors' tendency toward overconfidence by convincing them that securities trading is safe, even if liability merely protects them only from a relatively narrow risk of misrepresentation. Liability might bolster investors' over-confidence in their judgment about trading stocks and thereby deter them from wiser investments in diversified portfolios or index funds, or cause them to waste money on investment advice and research. Conversely, the remote prospect of recovering damages may not have the expected effect of encouraging investors to trade if investors discount these remote possibilities to the same extent that they discount the risk of fraud.

²⁷ See Choi & Pritchard, *supra* note 4, at 11 (observing that because behavioral economics is "still in its infancy," the effect of particular regulatory reforms or how to ameliorate biases is unclear).

²⁸ See Peter H. Huang, *Moody Investing and the Supreme Court: Rethinking the Materiality of Information & the Reasonableness of Investors* 30 (Am. L. & Econ. Assoc., 15th Annual Meeting, Working Paper No. 5), available at <http://law.bepress.com/alea/15th/bazaar/art5>; Langevoort, *supra* note 4, at 186 (emphasizing whether there has been a "deliberate effort by company managers to attract investor attention to the company's past successes"); Sendhil Mullainathan & Andrei Shleifer, *Persuasion in Finance* (Oct. 2005), available at <http://ssrn.com/abstract=864686> (showing how financial advertising responds to investor sentiments, thereby encouraging speculation). See also David A. Hoffman, *The "Duty" to be a Rational Shareholder*, 90 MINN. L. REV. 537 (2006) (criticizing courts' tendency to minimize this problem as indicated by the number of cases in which they presume materiality). For broader discussions of manipulation by sellers outside the securities context see Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630, 635 (1999); Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: Some Evidence of Market Manipulation*, 112 HARV. L. REV. 1420, 1572 (1999). It is not clear the extent to which theory and evidence based primarily on consumer markets apply to high-volume securities markets with transparent pricing.

C. Effect of Disclosures on Irrational Investors

Assuming liability improves disclosure, it is not clear how irrational investors will process this information. Liability that induces repeated corrective disclosures might actually mislead investors by causing them to focus excessively on the facts in the disclosure or to frame price movements as sharp short-term gains or losses rather than relatively mild longer term price movements.

D. Regulation and Learning from Mistakes

Protecting investors from their judgment errors may inhibit them from correcting those errors over time. Klick and Mitchell argue that regulation to insulate individuals from their cognitive errors can create a kind of moral hazard by reducing individuals' incentives to learn.²⁹ Thus, reducing securities sellers' ability to exploit investors' biases might decrease investors' opportunities and incentives to learn to overcome their biases. Since regulating securities sellers cannot de-bias investors, investors will continue to err in unregulated transactions.

The law might have little effect on learning because investors do not know how much they are protected. Also, investors who learn and thereby reduce their trading may be replaced by a new group of naïve traders.³⁰ But these considerations would undercut rationales for liability based on encouraging investors to trade. In other words, to the extent that a benefit of disclosure regulation is keeping investors in the market, this benefit is offset by the cost of reducing these investors' ability to protect themselves.

E. Effect on Market Efficiency of Encouraging Uninformed Trading

Assuming disclosure regulation encourages trading by unsophisticated investors, how does this affect market efficiency? Unsophisticated trading arguably brings more information into the market.³¹ On the other hand, noise trading by outside investors may reduce market efficiency compared to a market in which fewer outsiders traded. The experience with relatively small "fantasy" markets that allow investors to bet on the likelihood of specific events arguably indicates that markets can be efficient with a small number of informed traders.³² It is not clear, therefore, that market efficiency is increased by any additional trading disclosure regulation encourages.

²⁹ See Klick & Mitchell, *supra* note 1, at 33.

³⁰ See Huang, *supra* note 28, at 28.

³¹ See generally Gilson & Kraakman, *supra* note 10.

³² See Saul Levmore, *Simply Efficient Markets and the Role of Regulation: Lessons from the Iowa Electronic Markets and the Hollywood Stock Exchange*, 28 J. CORP. L. 589, 604 (2003).

F. Effect of Disclosure Regulation on Accuracy of Disclosure

Disclosure liability may reduce social wealth on net by deterring socially valuable conduct.³³ This sometimes may involve a tradeoff between the costs and benefits of more disclosure. But disclosure liability also may deter disclosures or make them less accurate.³⁴ As discussed above in subpart A, expanding liability to account for irrationality may increase litigation by reducing courts' ability to screen frivolous suits. Also, market irrationality may force defendants to pay more by holding them accountable for stock price fluctuations that resulted from investor overreaction to the misrepresentations, or that might not even have been connected with defendants' misrepresentations.³⁵

As a result of these problems, corporations and insiders may choose not to make discretionary efficiency-enhancing disclosures rather than risking draconian liability, particularly where disclosing good news can only increase liability.³⁶ Corporate insiders are particularly vulnerable to litigation risk since, even if the corporation or insurance pays the judgment, the insiders have a non-diversifiable risk of reputation loss.³⁷ The business judgment rule in state corporate law is intended to minimize this risk of over-deterrence, but there is no such rule in federal securities law.

G. Irrationality, Courts, and Regulators

Behavioral finance raises questions not only about how markets should be regulated but about who should regulate them. First, even if it is theoretically possible to fashion efficient regulation that accounts for the above problems, it is still not clear how well courts and regulators will deal with the problems in

³³ See Jonathan Macey & Geoffrey P. Miller, *Good Finance, Bad Economics: An Analysis of the Fraud-on-the-Market Theory*, 42 STAN. L. REV. 1059, 1074 (1990).

³⁴ This discussion assumes for the sake of argument that more efficient markets increase allocative efficiency. However, this might not be the case. See James Dow & Gary Gorton, *Stock Market Efficiency and Economic Efficiency: Is There a Connection?*, 52 J. FIN. 1087 (1997) (showing that even if market prices are strong-form, efficient corporate managers may make suboptimal investment decisions); Lynn A. Stout, *The Unimportance of Being Efficient: An Economic Analysis of Stock Market Pricing and Securities Regulation*, 87 MICH. L. REV. 613, 637 (1988) (concluding that market efficiency has little effect on capital market allocation).

³⁵ Recent discussions show how market irrationality leads to overstated damages in securities fraud cases, in part because plaintiffs tend to sue when market movements are exaggerated. See Bradford Cornell & James Rutten, *Market Efficiency, Crashes and Securities Litigation*, available at <http://ssrn.com/abstract=871106>; Frederick C. Dunbar & Dana Heller, *Fraud on the Market Meets Behavioral Finance*, 31 DEL. J. CORP. L. (forthcoming 2006), available at <http://ssrn.com/abstract=824884>. See also Langevoort, *supra* note 4, at 181 (noting that "[t]he more irrationality there is in the markets, the harder we have to work to find remedial solutions that are fair and reasonable").

³⁶ See Stephen Brown, et al., *Management Forecasts and Litigation Risk*, 30 (Apr. 2005), available at <http://ssrn.com/abstract=709161> (discussing effect of litigation risk on firms' disclosures).

³⁷ See Philip E. Strahan, *Securities Class Actions, Corporate Governance and Managerial Agency Problems* 26 (June 1998), available at <http://ssrn.com/abstract=104356>.

the real world. The courts are badly situated to sort through the evidence and theories. This was true even in the relatively well-organized world of the efficient market hypothesis, and truer given the complications of behavioral finance. Although courts apply economic theory in other areas, such as antitrust,³⁸ courts also have made mistakes in those areas as well.

Second, there is no apparent reason why theories of investor irrationality should not also apply to judges, regulators, and juries.³⁹ The main difference between investors and public officials is that investors have stronger financial incentives to correct their mistakes. Life-tenured federal judges, bureaucrats, and legislators, by contrast, not only may keep their jobs if they make mistakes, but may reap rewards by serving pro-regulatory interest groups even if the laws do not make economic sense.

III. THE FOM THEORY

This Part introduces the fraud on the market theory, which facilitates securities fraud class actions. This rule poses a conundrum for behavioral finance. On the one hand, FOM liability arguably deters fraud and increases market efficiency. Behavioral finance does not weaken the general case for mandatory disclosure. More information causes stock prices to better reflect asset values, even if prices do not always adjust as rapidly or accurately as efficient market theory suggests they will. Noise is less prevalent for more widely traded stocks that have more analysts following them, suggesting that the mechanisms of arbitrage work, even if imperfectly.⁴⁰ Markets can be better informed not only through direct release of information, but also by disclosure regulation's subsidy of information discovery by market intermediaries.⁴¹

On the other hand, FOM liability to individual investors is questionable in the light of behavioral finance theory showing that market fluctuations and trading may be disconnected from defendants' misrepresentations. Behavioral finance therefore intensifies questions already inherent in FOM about whether liability encourages excessive litigation and over-deters disclosure and other legitimate corporate activities. Moreover, even if information clearly moves

³⁸ See Daniel Fischel, *Efficient Capital Markets, the Crash, and the Fraud on the Market Theory*, 74 CORNELL L. REV. 907, 921 (1989).

³⁹ See Choi & Pritchard, *supra* note 4, at 2 (focusing on decision-making by regulators); Chris Guthrie, et al., *Inside the Judicial Mind*, 86 CORNELL L. REV. 777, 778 (2001) (focusing on judicial decision-making).

⁴⁰ See Gilson & Kraakman, *supra* note 4, at 733 (noting evidence that many pricing anomalies disappear when the studies control for company size, for which there is more available information, including underpricing of IPOs and seasoned equity offerings); Harrison Hong, et al., *Bad News Travels Slowly: Size, Analyst Coverage, and the Profitability of Momentum Strategies*, 55 J. FIN. 265, 277 (2000) (showing that momentum trading is greater for losers because winners have incentive to disclose more information).

⁴¹ Zohar Goshen & Gideon Parchomovsky, *The Essential Role of Securities Regulation*, (Columbia Law Sch., The Ctr. for Law & Econ. Studies Working Paper No. 259 Oct. 5, 2004), available at <http://ssrn.com/abstract=600709> (showing how mandatory disclosure and other rules can affect intermediaries' incentives by lowering their cost of access to information).

irrational markets, this irrationality indicates that the information's effect on the market cannot be assumed from its importance to rational investors.

The following subparts discuss FOM generally. Part IV shows how *Basic* and *Dura* support qualifications on FOM liability that accommodate the issues raised by behavioral finance theory.

A. *Basic v. Levinson*

Basic involved a company's misleadingly negative representations about its merger prospects. If the class members had to prove individual reliance, the Court noted that class status would have been denied. But the Court instead upheld a cause of action based on a presumption of reliance, reasoning that, in the context of open-market misrepresentations, investors could be said to be relying on the market to

transmit[] information to the investor in the processed 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.⁴²

The Court approved the following elements of the Court of Appeals test, while noting that "elements (2) and (4) may collapse into one":

(1) that the defendant made public misrepresentations; (2) that the misrepresentations were material; (3) that the shares were traded on an efficient market; (4) that the misrepresentations would induce a reasonable, relying investor to misjudge the value of the shares; and (5) that the plaintiff traded the shares between the time the misrepresentations were made and the time the truth was revealed.⁴³

The Court, however, allowed "[a]ny showing that severs the link between the alleged misrepresentation and either the price received (or paid) by the plaintiff, or his decision to trade at a fair market price, will be sufficient to rebut the presumption of reliance."⁴⁴

Basic clearly required trading in an "efficient" market as a prerequisite for applying the presumption of reliance. The Court implicitly required only "semi-strong-form" efficiency—that is, that the market reflects publicly disclosed information.⁴⁵ This follows logically from the Court's assumption that public misrepresentations can distort price.⁴⁶ It is also supported by statements in the case indicating that FOM was based on investors' assumptions that the market

⁴² *Basic, Inc. v. Levinson*, 485 U.S. 224, 244 (1988) (quoting *In re LTV Securities Litigation*, 88 F.R.D. 134, 143 (N.D. Tex. 1980)).

⁴³ *See id.* at 248 n.27.

⁴⁴ *Id.* at 248 (footnotes omitted).

⁴⁵ *See* Jonathan R. Macey, et al., *Lessons From Financial Economics: Materiality, Reliance, and Extending the Reach of Basic v. Levinson*, 77 VA. L. REV. 1017, 1020 (1991).

⁴⁶ *See infra* text accompanying note 99.

reflected available information and was not rigged.⁴⁷ Thus, the Court noted in support of its presumption of reliance that “[r]ecent empirical studies have tended to confirm Congress’ premise that the market price of shares traded on well-developed markets reflects all publicly available information, and, hence, any material misrepresentations”;⁴⁸ observed that “[t]he 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”;⁴⁹ said that accepting the presumption of reliance required only believing “that market professionals generally consider most publicly announced material statements about companies, thereby affecting stock market prices”; and noted that “Congress expressly relied on the premise that securities markets are affected by information.”⁵⁰ In other words, the Court’s theory allows a cause of action in a market that is efficient enough to incorporate public disclosures, whether or not they are accurate, but not so efficient that prices reflect undisclosed facts.

This reasoning suggests that FOM applies even if market prices reflect not only false information but noise. The question then becomes *how much* noise might preclude application of the presumption. Resolving this issue requires penetrating more deeply into the Court’s language and reasoning and taking into account its later holding in *Dura*.

Justice White’s strong dissent highlighted what he called the “pitfalls” in the FOM theory. The dissent is notable today given its preview of some of the arguments for the restrictive application of *Basic* in the *Dura* case discussed immediately below.⁵¹ The dissent stressed three points that are particularly relevant for present purposes. First, Justice White noted the Court’s problems in applying “modern economic theory” to modify basic fraud doctrine,⁵² concluding that “the Court’s embracement of the fraud-on-the-market theory

⁴⁷ See Goshen & Parchomovsky, *supra* note 41, at 50 (arguing that FOM requires only an “effective” market).

⁴⁸ *Basic, Inc.*, 485 U.S. at 246.

⁴⁹ *Id.* at 241.

⁵⁰ *Id.* at 246 (quoting legislative history (H.R. REP. NO. 73-1383)) stating, in part:

The idea of a free and open public market is built upon the theory that competing judgments of buyers and sellers as to the fair price of a security brings [sic] about a situation where the market price reflects as nearly as possible a just price. Just as artificial manipulation tends to upset the true function of an open market, so the hiding and secreting of important information obstructs the operation of the markets as indices of real value.

⁵¹ The Court’s members have clearly swung to the dissent’s position since *Basic*. Justice O’Connor, who joined the dissent, was the only justices other than Stevens to participate in the decision of both *Basic* and *Dura*. Three *Dura* justices, Rehnquist, Scalia and Kennedy, did not participate in *Basic*. Rehnquist’s replacement by John Roberts, and O’Connor’s by Samuel Alito, are not likely to move the Court in a pro-liability direction.

⁵² See *Basic*, 485 U.S. at 254:

Congress, with its superior resources and expertise, is far better equipped than the federal courts for the task of determining how modern economic theory and global financial markets require that established legal notions of fraud be modified. In choosing to make these decisions itself, the Court, I fear, embarks on a course that it does not genuinely understand, giving rise to consequences it cannot foresee.

represents a departure in securities law that we are ill-suited to commence—and even less equipped to control as it proceeds.”⁵³ The imponderables of FOM are obviously more important in light of the complications introduced by behavioral finance theory.

Second, Justice White questioned what it means for the plaintiff to rely on the “integrity” of market price⁵⁴ and the majority’s dubious notion that price is a reflection of “value,” given the impossibility of determining such a value distinct from market price.⁵⁵ This raises the issue of how FOM is affected by behavioral finance theories casting doubt on market integrity and the relationship between price and value.

Third, and, perhaps most notably in light of subsequent events, Justice White noted the risk that the majority’s rule will “lead to large judgments, payable in the last analysis by innocent investors, for the benefit of speculators and their lawyers.”⁵⁶ This entailed several problems that have become more salient since *Basic*. The reference to “innocent investors” alluded to the fact that it would ultimately be the corporation itself that pays the class’s market losses. These losses are incurred by “speculators” who do the most trading rather than those who buy and hold diversified portfolios and therefore actually do rely on market efficiency.⁵⁷ The reference to “lawyers” anticipated the role of the class action bar in promoting the FOM theory.

Some of these problems with FOM are discussed further below. For present purposes it is important to note that the problems with the theory acquired political weight in the years following *Basic* and led to the adoption of the Private Securities Litigation Reform Act of 1995, which formed the backdrop for the Court’s reasoning in *Dura*. The present analysis discusses these general problems with FOM primarily as the context for the additional problems raised by behavioral finance.

B. *The Loss Causation Issue*

Before discussing *Dura*, it is helpful to describe the loss causation issue the case focused on. In securities fraud cases generally, plaintiff must show that defendant’s fraud caused both plaintiff’s purchase or sale and her specific loss—that is, both transaction and loss causation. Loss causation functions as a kind of proximate cause requirement, to protect defendant from open-ended damages for market fluctuations that do not relate to defendant’s wrong. It is not clear, however, what, if any, role loss causation should play in FOM cases, which concern the effect of defendant’s fraud on the market rather than the

⁵³ *Id.* at 263.

⁵⁴ *Id.* at 255.

⁵⁵ *Id.*

⁵⁶ *Id.* at 262, quoting *SEC v. Texas Gulf Sulphur Co.*, 401 F.2d 833, 867 (2d Cir. 1968).

⁵⁷ *See infra* text accompanying note 74.

effect of that fraud in causing plaintiff's transaction.⁵⁸ In other words, proof of FOM would seem inherently to require a direct link between the fraud and the market price, and therefore not to require additional proof of loss causation.

Prior to *Dura*, there was a split in the circuits as to the role of loss causation in FOM cases. The Ninth Circuit had held that an allegation that the fraud affected the market price was enough to support FOM without an additional showing of loss causation.⁵⁹ However, cases in other circuits had held that a FOM claim required an additional allegation that a corrective disclosure had caused the market price to adjust to a non-fraudulent level, thereby clearly demonstrating the fraud's effect on the market.⁶⁰ In *Robbins v. Koger Properties, Inc.*,⁶¹ the plaintiff failed to make this showing and the court entered judgment for the defendant. Plaintiff had shown through expert testimony that if defendant's accounting errors had been made public the issuer would have had to have cut its dividend and its stock price would have declined. The court held that this was "the appropriate proof of damages under the out-of-pocket rule," but not of loss causation.⁶² The corrective disclosure did not occur until after the company cut its dividend for reasons other than disclosure of the accounting error and the stock price declined. Conversely, in *Semerenko v. Cendant Corp.*,⁶³ plaintiff was allowed to proceed based on allegations that the stock price was "buoyed" by defendant's misrepresentations and dropped after a corrective disclosure. Although the stock price drop occurred after termination of a merger agreement, the court held that the complaint had sufficiently alleged that the disclosure of the fraud was a substantial factor in causing that termination.

As *Dura* was pending, Professors Merritt Fox and John Coffee published opposing positions on what the Court should do. Fox sided with the Ninth Circuit rule,⁶⁴ while Coffee argued for a requirement of additional proof of loss causation in FOM cases.⁶⁵ This debate clarified that the issue was not whether or not causation should be required, but rather what allegations and evidence of loss causation are necessary. Specifically, should the courts require a corrective disclosure that triggers a specific market reaction and, thereby, quantifies the loss?

⁵⁸ See Merritt B. Fox, *Demystifying Causation in Fraud-On-The-Market Actions*, 60 BUS. LAW. 507, 507 (2005).

⁵⁹ See *Knapp v. Ernst & Whinney*, 90 F.3d 1431, 1438 (9th Cir. 1996).

⁶⁰ This is apparently consistent with tort law. See RESTATEMENT (SECOND) OF TORTS § 548, cmt. b. (1977) (stating that "one who misrepresents the financial condition of a corporation in order to sell its stock will become liable to a purchaser who relies upon the misinformation for the loss that he sustains when the facts as to the finances of the corporation become generally known and as a result the value of the shares is depreciated on the market.").

⁶¹ 116 F.3d 1441 (11th Cir. 1997).

⁶² *Id.* at 1448 n.6.

⁶³ 223 F.3d 165 (3d Cir. 2000).

⁶⁴ See Fox, *supra* note 58, at 536.

⁶⁵ See John C. Coffee, Jr., *Causation By Presumption? Why the Supreme Court Should Reject Phantom Losses and Reverse Broudo*, 60 BUS. LAW. 533,547 (2005).

Fox argued that courts should be willing to accept allegations and evidence other than a corrective disclosure to show the connection between the fraud and plaintiff's loss, including the price reaction to the initial statement and testimony by analysts or industry experts as to the importance of that statement.⁶⁶ This involves assessments both of the reliability of the evidence and the importance of the deterrence value of FOM liability. Fox's deterrence argument is bolstered by the additional problem, raised in Respondent's Brief in *Dura*, that requiring a corrective disclosure encourages defendants to lie a second time in connection with the "correction" in order to minimize its impact.⁶⁷ Defendants at least have incentives to time and adjust intermediate disclosures to mitigate the effect of any ultimate correction.⁶⁸

On the other hand, Coffee argues that, without a corrective disclosure, plaintiff could be said to have suffered only "phantom losses"—that is, there would be no reliable evidence that the fraud actually caused plaintiffs' loss. Coffee is concerned about judges' and juries' ability to measure the financial impact of fraud in the absence of a corrective disclosure,⁶⁹ particularly since the market may have been inflated by "irrational exuberance."⁷⁰ More generally, the legal concept of materiality may include events that do not affect market price,⁷¹ or that only temporarily affect market price and, therefore, cause no damage to non-selling shareholders.⁷² It follows that relaxing the standard for proving loss causation could significantly reduce defendants' ability to get dismissals of frivolous cases and, thereby, increase the ability of class action plaintiffs to file flimsy cases in order to extract easy settlements.⁷³ These proof-related issues combine with other problems inherent in the FOM theory, like those Justice White noted in *Basic*, to require particular care in demonstrating a connection between the fraud and the loss. For example, Coffee noted that FOM liability often amounts to costly pocket-shifting for shareholders who hold diversified portfolios.⁷⁴

The disagreement between Fox and Coffee reflects fundamentally different views of FOM's deterrence and compensation effects. Fox essentially assumes that courts applying FOM could determine with reasonable accuracy the extent to which fraud damaged investors. Coffee, on the other hand, is

⁶⁶ See Fox, *supra* note 58, at 524.

⁶⁷ See Respondents' Brief at 49, *Dura Pharms., Inc. v. Broudo*, 125 S. Ct. 1627 (2005) (No. 03-932).

⁶⁸ See Brown et al., *supra* note 36, at 3, 24.

⁶⁹ See Coffee, *supra* note 65, at 539.

⁷⁰ *Id.* at 539.

⁷¹ *Id.* at 541.

⁷² *Id.* at 538.

⁷³ *Id.* at 540.

⁷⁴ *Id.* at 542–43. Because reasonable investors diversify, and diversified shareholders are not injured by securities fraud, Richard Booth concludes that securities fraud actions should be brought derivatively on behalf of the corporation, and then only when insiders have extracted gains by trading during the fraud. See Richard A. Booth, *Who Should Recover What in a Securities Fraud Class Action?* (Univ. of Md. Legal Studies Research Paper No. 2005-32, 2005), available at <http://ssrn.com/abstract=683197>.

concerned that FOM might result in liability that exceeded the social harm caused by defendants' misstatements and might have perverse incentive effects. Even if these arguments are closely balanced in the efficient market context, Coffee's position acquires greater weight in noisy markets, as discussed below in Part IV.

C. Dura Pharmaceuticals

*Dura Pharmaceuticals, Inc. v. Broudo*⁷⁵ is the first major Supreme Court application of *Basic*. The relevant claim in *Dura* concerned misrepresentations about FDA approval of the defendant's asthmatic spray device. The complaint alleged that plaintiffs suffered damages when they "paid artificially inflated prices for Dura securities."⁷⁶ The Ninth Circuit held that this allegation of price inflation at the time of purchase was sufficient.⁷⁷ The Supreme Court reversed, holding that the complaint had not adequately alleged loss causation. The Court reasoned, "as a matter of pure logic, at the moment the transaction takes place, the plaintiff has suffered no loss; the inflated purchase payment is offset by ownership of a share that *at that instant* possesses equivalent value."⁷⁸ The Court also noted that a later sale might, but does not "inevitably," lead to a loss, depending on whether the sale price reflects the truth. Moreover, even if the sale is at a lower price, "that lower price may reflect, not the earlier misrepresentation, but changed economic circumstances, changed investor expectations, new industry-specific or firm-specific facts, conditions, or other events, which taken separately or together account for some or all of that lower price."⁷⁹

The Court's strict application of loss causation reflected a very different approach to the FOM theory from that in *Basic*. The Court was disturbed by some of the inherent problems of the FOM theory discussed above, including its invitation to plaintiffs' lawyers to file claims alleging significant damages on little factual basis. This was a salient issue in *Dura*, since the complaint in that case had been filed by William Lerach, who was notorious for making millions from FOM and other securities class actions.⁸⁰ Moreover, several briefs in *Dura* highlighted the over-deterrence problem.⁸¹ The Court was

⁷⁵ 125 S.Ct. 1627 (2005).

⁷⁶ Second Consol. Amended Complaint for Violation of the Sec. Exch. Act of 1934 at 85, *In re Dura Pharms., Inc. Sec. Litig.*, 2000 WL 33176043 (S.D. Cal. 2000) (No. 99cv0151-L(NLS)).

⁷⁷ *Broudo v. Dura Pharms, Inc.*, 339 F.3d 933, 938 (9th Cir. 2003).

⁷⁸ *Dura Pharms., Inc.*, 125 S. Ct. at 1631.

⁷⁹ *Id.* at 1632.

⁸⁰ This was highlighted by the Brief for the Chamber of Commerce of the United States as Amicus Curiae in Support of Petitioners at 2-3, *Dura Pharms., Inc. v. Broudo*, 125 S. Ct. 1627 (2005) (No. 03-932) (quoting Lerach's notorious statement that "I have the greatest practice in the world because I have no clients. I bring the case. I hire the plaintiff. I do not have some client telling me what to do. I decide what to do.").

⁸¹ See Brief of the Chamber of Commerce of the United States, *supra* note 80; Brief of Washington Legal Found. as Amicus Curiae in Support of Petitioners, *Dura Pharms., Inc. v. Broudo*, 125 S. Ct. 1627 (2005) (No. 03-932); Respondents' Brief, *supra* note 67; Brief of

clearly concerned with the problem of litigation over-detering legitimate conduct.⁸² The Court also explicitly relied on the Private Securities Litigation Reform Act, a statute that was passed partly to rein in *Lerach* and the excesses of the FOM theory,⁸³ pointing out that the Act “makes clear Congress’ intent to permit private securities fraud actions for recovery where, but only where, plaintiffs adequately allege and prove the traditional elements of causation and loss.”⁸⁴ The Court added:

[A]llowing a plaintiff to forgo giving any indication of the economic loss and proximate cause that the plaintiff has in mind would bring about harm of the very sort the statutes seek to avoid It would permit a plaintiff “with a largely groundless claim to simply take up the time of a number of other people, with the right to do so representing an *in terrorem* increment of the settlement value, rather than a reasonably founded hope that the [discovery] process will reveal relevant evidence.” *Blue Chip Stamps*, 421 U.S., at 741, 95 S.Ct. 1917. Such a rule would tend to transform a private securities action into a partial downside insurance policy.⁸⁵

Having been chastened by Congress and perhaps seeking to avoid further criticism and Congressional erosion of its power, the Court imposed a pleading requirement that enables courts to separate out the cases that ought to enter discovery, thereby minimizing the risk that defendants will have to settle flimsy claims.⁸⁶

IV. BEHAVIORAL FINANCE AND FOM

Although *Dura*’s objectives were clear, its rule left considerable uncertainty. The Court rejected the Ninth Circuit test that a mere allegation of price inflation is sufficient but did not say what allegation or evidence of loss causation is required. The Court cited the tort test requiring a corrective disclosure,⁸⁷ but did not clarify whether a corrective disclosure is necessary. Moreover, as discussed further below,⁸⁸ the Court implied that such a disclosure might not be enough to establish loss causation even for a plaintiff who bought before the fraud and held through the disclosure. More generally, *Dura* raises questions concerning what other limitations on FOM might be appropriate to address the problems of excessive litigation. As discussed in Part II, there are significant questions about protecting investors from their judgment errors. This suggests that behavioral finance weakens the rationale

Amici Curiae the Sec. Indus. Ass’n and the Bond Mkt Ass’n in Support of Petitioners, *Dura Pharms., Inc. v. Broudo*, 125 S. Ct. 1627 (2005) (No. 03-932).

⁸² *Dura Pharms., Inc.*, 125 S. Ct. at 1634.

⁸³ See generally Toobin, *supra* note 2.

⁸⁴ *Dura Pharms., Inc.*, 125 S. Ct. at 1633.

⁸⁵ *Id.* at 1634.

⁸⁶ *Id.*

⁸⁷ See *supra* note 60.

⁸⁸ See *infra* subpart III.E.

for FOM to the extent that it is based on compensating individual investors for their losses.

More importantly for present purposes, *Dura* did not address the problems of applying the FOM theory in noisy markets. When markets are irrational, it may not be clear how much, if any, damages connect to defendants' misstatements. To illustrate these problems, consider the post-earnings-announcement-"drift" problem.⁸⁹ Hersh Shefrin discusses a company that has four consecutive quarters of positive earnings "surprises" in which actual earnings are significantly ahead of forecasts.⁹⁰ The stock price apparently did not fully react to the first three positive surprises. Before the fifth quarter, the company pre-announced a negative earnings surprise, to which the stock price reacted precipitously. Shefrin discusses several explanations from the behavioral finance literature.⁹¹ Analysts may be subject to a confirmation bias in first under-reacting to the initial earnings, then similarly over-reacting to what they perceive as a new trend.⁹² Or analysts may at either or both times be subject to a self-attribution bias, where they are especially inclined to believe information that comes from their own search or analysis.⁹³ Alternatively, none of these explanations may apply and the market may be reacting efficiently to information. For example, information may take time to diffuse through the market,⁹⁴ or may indicate a change in the company's systematic risk. These conflicting explanations support Shefrin's comment that, "when economists have developed their own psychology, the result has been both bad psychology and bad economics."⁹⁵

Now suppose that plaintiff alleges a misrepresentation in connection with or around the time of one or more of the first three earnings surprises and that the correct information came out at or around the time of the preannouncement that was followed by the price drop.⁹⁶ What is a court to do with all of these theories in an FOM case? If the preannouncement is a corrective disclosure, should the court assume that the market's reaction accurately indicates damage resulting from the misrepresentation? If there is no corrective disclosure, should the court hypothesize how a rational market would have reacted to a disclosure? Given uncertainty created by behavioral finance, the court risks a mistake that could have perverse deterrence implications and invite strike suits.

As discussed in the following subparts, the various elements of the FOM case provide potential mechanisms for screening out noisy market problems. However, only loss causation may provide a rule that is workable in light of the

⁸⁹ See *supra* text accompanying note 17.

⁹⁰ See SHEFRIN, *supra* note 5, at 92-96.

⁹¹ *Id.* at 101-03.

⁹² See Nicholas Barberis et al., *A Model of Investor Sentiment*, 49 J. FIN. ECON. 307 (1998); Kaestner, *supra* note 17.

⁹³ See Kent Daniel et al., *Investor Psychology and Security Market Under- and Overreactions*, 53 J. FIN. 1839 (1998).

⁹⁴ See Hong et al., *supra* note 40, at 266.

⁹⁵ See SHEFRIN, *supra* note 5, at 102.

⁹⁶ Indeed, there is evidence that companies attempt to reduce litigation in precisely this way, by releasing multiple pieces of bad news. See Brown et al., *supra* note 36, at 30.

uncertainties inherent in behavioral finance theory and the courts' limitation in applying this theory.

A. *Market Efficiency*

As discussed in Part III, *Basic* explicitly applies only where plaintiff can prove that the relevant securities were traded in an efficient market. The cases have applied various definitions of market efficiency, most based primarily on the size of the market.⁹⁷ It has also been argued that market efficiency need not be a distinct element of the plaintiff's case, but should simply be assumed from the statistical significance of price movements following the misrepresentation.⁹⁸

Given the market efficiency requirement in *Basic*, how does the presence of noise in the market affect application of the market efficiency test of the FOM? As a matter of finance theory, measurable information-induced movements arguably should be enough to back an FOM claim even if prices also respond to noise or other influences.⁹⁹ In other words, even if noise causes market prices to diverge from the value of underlying assets, this does not mean that information, including misrepresentations and corrections, is not also moving market prices.

But there is a problem with applying an informational efficiency approach when a market movement might reflect both noise and information, as in the example discussed at the beginning of this Part. Consider the facts in *Dura*. While the initial statement about the spray device and anticipated FDA approval allegedly caused price inflation, the complaint alleged that when the FDA disapproved the product "the next day *Dura*'s share price temporarily fell but almost fully recovered within one week."¹⁰⁰ If *Dura* traded in an efficient market, the price drop when the FDA disapproved the device indicates that the misrepresentation harmed investors, while the quick recovery might be due to other facts or general market movements. For example, the market during the relevant period had general good news about the drug industry.¹⁰¹ Or the price might already have been depressed by doubts about *Dura*'s device that had filtered into the market prior to the FDA's non-approval of the device. But the

⁹⁷ See Cornell & Rutten, *supra* note 35 (surveying various tests of market efficiency and distinguishing between an ex ante test that focuses on investors' perspective when investing and ex post efficiency at time when damages computed, concluding that the test of ex ante efficiency should be whether the market is open and developed); Paul A. Ferrillo et al., *The "Less Than" Efficient Capital Markets Hypothesis: Requiring More Proof From Plaintiffs in Fraud-on-the-Market Cases*, 78 ST. JOHN'S L. REV. 81, 89–106 (2004) (reviewing cases).

⁹⁸ See Macey et al., *supra* note 45, at 1020.

⁹⁹ See *id.*; Fischel, *supra* note 38, at 909 (noting that we can understand that there are factors in price movements other than disclosure even without being able to isolate the individual factors). See also Ferrillo et al., *supra* note 97, at 128–29 (devising a test for measuring whether noise was so dominant in the market that it was not responding to information).

¹⁰⁰ *Dura Pharms., Inc. v. Broudo*, 125 S. Ct. 1627, 1630 (2005).

¹⁰¹ See Respondents' Brief, *supra* note 67, at 5.

price movement may have other explanations if Dura traded in a noisy market. For example, the FDA disapproval of the device may have been a salient event that triggered an investor reaction disproportionate to the actual importance of the news that the market soon corrected. An event study might show that the market reacted to the corrective disclosure, but it cannot show why.

There are, therefore, competing inferences from the same facts about the existence of and harm from the fraud depending on the degree of noise in the market. The resulting risk of excessive damages or bogus claims from market noise therefore combines with the other problems inherent in FOM actions to suggest that it may be appropriate to apply a strict market efficiency test. Under this test, the presence of significant volatility in the market apparently unrelated to information might disqualify the claim even if prices are also reacting to disclosures.¹⁰²

Applying such a test, however, is problematic. To begin with, courts would have to determine what level of noise is enough to make the market ineligible for the FOM presumption. This could introduce significant uncertainty into FOM cases. More importantly, application of a stringent no-noise test of market efficiency would exclude all claims in noisy markets irrespective of the extent or materiality of the fraud. This would essentially give corporations and insiders a license to defraud in noisy markets. Courts are unlikely to completely sacrifice the deterrence function of liability merely because of the risk of noisy damages. Accordingly, it makes sense for courts to rely on statistical significance to show that the market was reacting to information and look for more precise ways to deal with noise.

B. *Rebutting the FOM Presumption*

Basic lets defendants rebut the FOM presumption by a showing that “severs the link between the alleged misrepresentation and either the price received (or paid) by the plaintiff, or his decision to trade at a fair market price.”¹⁰³

Severing the link with the *decision to trade* assumes that plaintiff is trading at a “fair market price” despite knowing information that renders the price inaccurate. *Basic* illustrated this rebuttal with the example of “a plaintiff who believed that Basic’s statements were false and that Basic was indeed engaged in merger discussions, and who consequently believed that Basic stock was artificially under-priced, but sold his shares nevertheless because of other unrelated concerns.”¹⁰⁴ The same principle could apply to noise traders who *believe* the market is not efficiently reflecting information, even if it is. However, defendants may find it hard to show that individual plaintiffs had such a belief.

¹⁰² For an example of a market efficiency test designed to make distinctions on the basis of noise, see Ferrillo et al., *supra* note 97.

¹⁰³ See *Basic, Inc. v. Levinson*, 485 U.S. 224, 248 (1988).

¹⁰⁴ *Id.* at 249.

The severing of the link between the misrepresentation and the purchase or sale *price* might seem to be more useful to defendants in noisy market cases. This argument has been considered in strong-form efficient markets that reflect the truth despite a misrepresentation. For example, *In re Apple Computer Securities Litigation*¹⁰⁵ affirmed summary judgment for defendant as to alleged misrepresentations concerning the Lisa computer because the market price reflected the press's "intense, sustained focus on Lisa and her risks,"¹⁰⁶ thus showing that it was unaffected by any misrepresentation. The issue in noisy market cases is the converse of the one in *Apple*—that is, whether a market is so infected by noise trading that this trading, rather than defendant's misrepresentation, was primarily responsible for moving prices. The problem for defendants is that the case gets to rebuttal only if the plaintiff has established an efficient market in its *prima facie* case. In such a market, noise could weaken but not "sever" the link, and therefore should not rebut the presumption of reliance.

Thus, the rebuttal to FOM does not represent a realistic chance of filtering out noisy market cases except in exceptional circumstances where defendant can show individual investors were irrational. This is unlikely to address the over-deterrence problem inherent in applying FOM to noisy markets.

C. Materiality

The FOM theory dispenses only with individualized proof of reliance and not the requirement that the misrepresentation be material to the reasonable investor. Proof of materiality under FOM arguably should involve a showing of the statistical significance of the market's reaction to the misrepresentation in an event study.¹⁰⁷ The important question for present purposes is how to deal with the possibility that the market is reacting to noise as well as, or instead of, information. This might make an innocuous misstatement look material.

Noise may be particularly relevant to earnings reports. For example, as discussed above,¹⁰⁸ prices might reflect judgment errors, as by under-reacting to an initial report and then over-reacting to later reports. Event study evidence would show that the market reacted to the reports rather than to a general market-wide event or other company-specific information. But the reaction would reflect the information's importance *both* to rational investors and to investors with judgment biases such as availability, confirmation, and over-confidence. If legal materiality depends on the relevance of the information to the "reasonable" investor, the misrepresentations may be immaterial despite the statistical evidence to the contrary. What should be the test?

The answer may depend partly on the general costs and benefits of FOM liability. Langevoort argues for defining materiality to reflect whatever the

¹⁰⁵ 886 F.2d 1109 (9th Cir. 1989).

¹⁰⁶ *Id.* at 1116.

¹⁰⁷ See Macey et al., *supra* note 45.

¹⁰⁸ See *supra* text accompanying note 17.

market is reacting to, even if the market is reacting irrationally.¹⁰⁹ Specifically, Langevoort argues that the court should treat as materially misleading “a general expression of optimism” that was “a deliberate effort by company managers to attract investor attention to the company’s past successes.”¹¹⁰ According to Langevoort, this would reduce the distortions resulting from defendants’ efforts to exploit investor heuristics. This makes superficial sense as an effort to police fraud in the market that can cause damage even if it seems innocuous isolated from investor heuristics.

Nevertheless, important considerations weigh against a subjective materiality test. First, such a test could open the door to strike suits, a problem that *Dura* was explicitly concerned with. For example, a plaintiff could sue on an expression of an opinion that, while neither clearly true nor false, is allegedly misleading because defendant took advantage of market heuristics to mislead investors. A court could not easily filter out weak cases at the outset, thereby exacerbating the strike suit problem that concerned the *Dura* majority and *Basic* dissenters.

Second, a subjective materiality test may over-deter corporate speech, causing cautious defendants to avoid disclosures that may be useful to investors.¹¹¹ If pure opinions will sometimes trigger liability depending on how a court assesses the investor-heuristics context of the statement in hindsight, defendants may play it safe by avoiding all or most evaluative statements. This overdeterrence problem, as well as the strike suit problem discussed immediately above, depends on the potential damages in FOM cases. As discussed in the next subpart, noisy markets exacerbate damage-computation problems inherent in FOM.

On the other hand, it may be impractical to rely on an objective test of materiality to avoid liability for innocuous statements in noisy markets. Such a test requires courts to determine what is important to “reasonable” investors, which may be no more accurate than relying on actual market reactions, despite the noise problem. Thus, materiality, like the market efficiency and rebuttal elements of FOM, does not solve the problems presented by noisy markets.

D. Damages

Computing damages is an important aspect of the policy problems concerning the FOM theory. In general, a plaintiff must show the market price of the security after disclosure of the true facts. The plaintiff then works back from that price to show the “value” of the security on each day since the misrepresentation based on market movements and the security’s market risk.¹¹² Damages are the differences between these values and plaintiffs’ purchase or sale prices on the relevant days. This approach raises many

¹⁰⁹ See Langevoort, *supra* note 4, at 185–86.

¹¹⁰ *Id.* at 186.

¹¹¹ See *supra* subpart II.F. (discussing the over-deterrence problem inherent in FOM).

¹¹² See Bradford Cornell & R. Gregory Morgan, *Using Finance Theory to Measure Damages in Fraud on the Market Cases*, 37 UCLA L. REV. 883, 886 (1990).

questions concerning, for example, precisely when the market learned the truth and how to measure the firm's market risk.

Behavioral finance adds to these inherent problems of damage computation the question of the extent to which noise accounts for the difference between "value" and price. A noisy market reaction to a disclosure may exaggerate the difference between pre-disclosure price and "value," and therefore significantly increase damages. This problem is compounded by the inherent difficulties of determining when a correction has occurred because facts may leak into the market. If there has been no corrective disclosure, the uncertainties of damages in noisy markets make it even riskier to speculate about the effect of misrepresentations based in part on the market's reaction to the initial statement, which may contain both true and untrue facts or only misleading opinions.

The uncertainties of damage computation, particularly in noisy markets, suggest that over-deterrence problems cannot safely be left to the damage stage, as Professor Fox argues.¹¹³ The loss causation test proposed in the next subpart provides a more effective screen.

E. Loss Causation

The above subparts show that the other elements of the FOM case may not be cost-effective ways to deal with noisy markets. This subpart shows that *Dura's* loss causation test, with some clarifications that are consistent with the Court's opinion, can deal effectively with this problem.

The Court's holding that a mere showing of price inflation is not enough, coupled with its citation of the non-Ninth Circuit cases and of the tort standard, strongly implies that a corrective disclosure is necessary to support loss causation. The Court reasoned that the difference between purchase price and value does not produce a loss because plaintiff holds a security of equivalent value. It would be more accurate in terms of finance theory to say that plaintiff holds a right the present value of which may be less than the price because of defendant's misrepresentations.¹¹⁴ The Court's characterization is not strictly inaccurate, however, because at the moment of purchase, plaintiff presumably can resell at the same price, less transaction costs. Moreover, plaintiff may dodge the bullet of defendant's misrepresentation by selling at any time before the price reflects the truth.

The Court's holding makes more sense from the perspective of the issue it was actually deciding—that is, pleading and proof rather than of "causation" of damages in the strict finance sense. As discussed above, a corrective disclosure arguably demonstrates how much the truth affects the price, enabling the court to determine by "backward induction" how the company would have performed from the time of fraud until the time of disclosure if the market had known the

¹¹³ See Fox, *supra* note 58, at 523.

¹¹⁴ See Merritt B. Fox, *Understanding Dura*, 60 BUS. LAW. 1547, 1552 (2005) (criticizing the Court's statement that plaintiff has not lost on purchase because this misconstrues the finance meaning of value in terms of discounted future distributions).

truth.¹¹⁵ Thus, a corrective disclosure is important evidence that the misrepresentation caused the loss. To be sure, even without a corrective disclosure or other discrete disclosure event, the defendant's fraud may have caused a loss if the truth somehow leaked into the stock price. The problem is not that the loss was not caused by the misrepresentation, but that the loss may be hard to show because there is no evidence as reliable as the backward induction method.

Professor Fox would permit other types of evidence, such as expert testimony as to the importance of the information,¹¹⁶ the price effect of the initial misstatement, or an explanation as to how the true facts leaked into the market.¹¹⁷ But it arguably makes sense to distrust this other evidence, particularly in a noisy market where speculation as to price effects of misrepresentations may be unreliable. Also, as Professor Coffee observes, the underlying non-disclosed problem may have been only temporary and therefore did not cause any loss by the time of suit.¹¹⁸ Even if the fraud affected the stock price, plaintiff's loss may have nothing to do with this fluctuation.

The Court is on shakier ground in suggesting that plaintiff would not recover, even if he held until after the market reflected the truth, because the lower price may reflect "changed economic circumstances, changed investor expectations, new industry-specific or firm-specific facts, conditions, or other events."¹¹⁹ The Court adds that "[o]ther things being equal, the longer the time between purchase and sale, the more likely that this is so, *i.e.*, the more likely that other factors caused the loss."¹²⁰ This dictum suggests that plaintiff would lose even if he had alleged a corrective disclosure but the value of his investment eventually declined for other reasons, such as the loss of a major customer.

As with the lack of a corrective disclosure, the problem in this situation is not an absence of causation. The effect of other factors on the post-disclosure price is irrelevant to the misrepresentation's effect on the price plaintiff paid. Investors and analysts arguably are entitled to expect any price fluctuations after the purchase to depend on the performance of, and news that affects, the company they think they have bought, not some different company that was obscured by defendants' fraud.¹²¹ Moreover, it may be difficult to separate the misrepresentation from the stock performance. For example, in *Dura*, the price may have gone down solely because of poorer earnings, but the amount of

¹¹⁵ See *supra* text accompanying note 112. See also Daniel R. Fischel, *Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities*, 38 BUS. LAW. 1, 17-19 (1982); Macey et al., *supra* note 45, at 1020.

¹¹⁶ See Fox, *supra* note 58, at 524. See also Fox, *supra* note 114, at 1572-73 (discussing evidence that might satisfy *Dura* test).

¹¹⁷ See Fox, *supra* note 114, at 1558.

¹¹⁸ See Coffee, *supra* note 65, at 538.

¹¹⁹ *Dura Pharms. Inc. v. Broudo*, 125 S. Ct. 1627, 1632 (2005).

¹²⁰ *Id.*

¹²¹ See Fox, *supra* note 114, at 1575 (criticizing Court's holding that plaintiff cannot recover even if he sold after a corrective disclosure).

decline may have reflected prospects for the asthmatic spray device the FDA ultimately declined to approve.

Dura adds a further complication by implying that an eventual *sale* may be a prerequisite to recovery. The Court says “[s]hares are normally purchased with an eye toward a later sale”;¹²² emphasizes that no loss occurs at the time of purchase because “the inflated purchase payment is offset by ownership of a share that *at that instant* possesses equivalent value”;¹²³ refers to the higher purchase “bringing about a future loss”;¹²⁴ suggests that there is no loss causation “the longer the time between purchase and sale”;¹²⁵ and fails to specify an event that could trigger a loss other than a later sale.¹²⁶ Again, whether plaintiff has sold is irrelevant to whether he suffered damages, since the securities he bought and holds may well be worth less because of the misrepresentation than they would have been if the stock had been accurately represented.

Dura’s dicta concerning the effect of non-sale and unrelated market declines makes more sense in light of the Court’s concerns with strike suits, excessive damages, and over-deterrence that may result from holding defendants responsible for events beyond their control. The Court emphasized that the statutes make actions for fraud available for “economic losses that misrepresentations actually cause,” and “not to provide investors with broad insurance against market losses.”¹²⁷ Although a corrective disclosure might seem clearly to indicate the effect of any misrepresentation, the fluctuation at the time of the representation or subsequent disclosure may reflect noise for which defendant arguably should not have to pay.¹²⁸ The backward induction method of measuring the effect of disclosures does not clarify *why* misrepresentations affect stock price, but merely *whether* they do.

The Court’s dicta sharply restricting loss causation, coupled with its rule requiring allegation of a corrective disclosure, may compromise the deterrence function of fraud liability. Failure to award damages in this situation also may reduce investors’ incentive to research securities.¹²⁹ Goshen and Parchomovsky argue that limiting defendants’ FOM liability because of doubts about market efficiency is inconsistent with the policy rationale for fraud liability of ensuring adequate information precisely so that market intermediaries can do their efficiency-enhancing job more effectively.¹³⁰ Indeed, Goshen and Parchomovsky’s reasoning suggests that failing to remedy fraud may contribute to the persistence of noise.

¹²² *Dura Pharms., Inc.*, 125 S. Ct. at 1631.

¹²³ *Id.*

¹²⁴ *Id.* at 1632.

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ *Id.* at 1633.

¹²⁸ *See supra* text accompanying notes 33–34.

¹²⁹ *See Fox, supra* note 114, at 1571.

¹³⁰ *See Goshen & Parchomovsky, supra* note 41, at 23.

Because *Dura* does not define the loss causation requirement beyond holding that a mere allegation of price inflation is insufficient, it is necessary to determine how to reconcile *Dura*'s dicta and its concerns about excessive liability with the deterrence function of fraud liability. Several commentators have suggested approaches to restricting defendants' liability for the market's irrational reaction to fraud. Macey and Miller argue that insiders might not be held liable for market professionals' failures to move an irrational market in the correct direction.¹³¹ Similarly, Langevoort speculates regarding the *Apple Securities* case¹³² that a court might hold that Apple's misrepresentations *should not* have affected its stock price in a very active and liquid market, so that if it did the reason was not the misrepresentations but noise trading and inadequate arbitrage.¹³³ Lev and deVilliers argue that defendants should not be liable for the "crash" component of market prices caused by investors' overreaction to bad news.¹³⁴ William Fisher proposes relieving defendants of liability for price declines resulting from overly optimistic analysts' forecasts except under some circumstances where the forecast can be linked to the defendant's misstatement.¹³⁵

None of these proposals definitively identifies or deals with noisy markets. The Macey and Miller and Langevoort discussions are merely speculations rather than concrete proposals. Lev and de Villiers explicitly discount the notion of investor irrationality and assume that crashes are consistent with informational efficiency in that investors sell when they see prices falling without knowing why.¹³⁶ They also assume that prices adjust over a much shorter period than the behavioral finance literature indicates.¹³⁷ Fisher characterizes analyst-added problems as an aberration in a basically efficient market and would qualify damages only where analysts' responsibility can be identified. And what some writers would characterize as noise, Fama and French might characterize as systematic risk.¹³⁸

¹³¹ See Macey & Miller, *supra* note 33, at 1090.

¹³² See Langevoort, *supra* note 2, at 907.

¹³³ See *supra* text accompanying note 105.

¹³⁴ Baruch Lev & Meiring deVilliers, *Stock Price Crashes and 10b-5 Damages: A Legal, Economic and Policy Analysis*, 47 STAN. L. REV. 7, 37 (1994). This proposal was a basis for a damage limitation provision in the Private Securities Litigation Reform Act. See 15 U.S.C. § 78u-4(e)(1).

¹³⁵ See William O. Fisher, *The Analyst-Added Premium as a Defense in Open Market Securities Cases*, 53 BUS. LAW. 35, 63 (1997). He relies on several securities cases and statutory provisions, including *Elkind v. Liggett & Myers, Inc.*, 635 F.2d 156 (2d Cir. 1980), in which the court refused to hold an issuer liable for failing to correct an analyst's forecast unless the issuer vouched for the analyst; cases holding defendant liable only for the loss attributable to its conduct; and loss causation provision in the Private Securities Litigation Reform Act, 15 U.S.C. § 78u-4(b)(4) (2000) and the Securities Act of 1933 § 12(b), 15 U.S.C. § 771(b) (2000).

¹³⁶ See Lev & deVilliers, *supra* note 134, at 22.

¹³⁷ Lev & deVilliers argue that prices adjust over a few days to a week or two. *Id.* at 34. By contrast, see SHEFRIN, *supra* note 5, at 98 (discussing evidence showing prices adjusting over 9 months).

¹³⁸ See Fama & French, *supra* note 16 (1992 & 1996).

There are several potential ways to deal with noise in proving loss causation. First, courts might reconstruct fundamental value based on earnings estimates unaffected by misrepresentations and a price-earnings ratio drawn from comparable companies.¹³⁹ But reconstructing market price involves what Justice White in *Basic* called the futile search for “true value.”¹⁴⁰ *Dura* strongly suggests, by requiring at least a corrective disclosure to establish value unaffected by the misrepresentation, that the courts should avoid reconstructing value to show loss causation.

A more productive approach would be to allow liability mainly to plaintiffs who sold as well as bought around when the fraud affected the stock price. Rather than attempting the nearly impossible task of precisely quantifying the effect of noise, this test identifies the group that was most likely affected by the fraud.¹⁴¹ Those who sold soon after disclosure are likely to have bought or continued to hold the stock because of the misrepresented facts. Conversely, many of the non-selling buyers are relatively long term holders for whom even a material misrepresentation that affects their purchase price has little effect on long-term returns. Moreover, these purchasers are likely to have held the stock as part of a diversified portfolio, and therefore are least likely to have been injured by the fraud, even if they held after the fraud was disclosed. Purchaser-seller plaintiffs still must prove damages by eliminating non-fraud effects on stock price. But given the hard work the loss causation test already has done, damages safely can be proved by backward-induction without worrying about further filtering out behavioral effects.

In short, the sale requirement addresses the combination of the inherent uncertainties of FOM and the additional problems of behavioral finance by moving part of the distance back to transaction causation. This would be consistent with *Dura*'s recognition that the Court may have erred in *Basic* by staking the fraud remedy on market efficiency.

Sale need not be a strict requirement, but might at least fill gaps left by other elements of the FOM cause of action. For example, the rule might require a sale only in very noisy markets. On the other hand, it may be difficult to identify the cases that are appropriate for requiring plaintiff to show both purchase and sale. This argues for an across-the-board sale requirement.

It might be objected that this application of *Dura* leaves too little of FOM to effectively deter fraud. Not only are non-sellers directly barred from suit, but some of the buyer-sellers may be noise traders who are eliminated by rebuttal evidence that they traded irrespective of market efficiency.¹⁴² But as discussed in the next Part, there are additional possible lines of defense against fraud.

¹³⁹ See Lev & deVilliers, *supra* note 134, at 36.

¹⁴⁰ *Basic, Inc. v. Levinson*, 485 U.S. 224, 255 (1988) (White, J., dissenting).

¹⁴¹ A test that focuses on whether plaintiff sold has the side benefit of addressing loss aversion by encouraging plaintiffs to sell in order to be eligible for damages. See Griffin & Zhu, *supra* note 24, at 21 (finding evidence of less sophisticated investors' reluctance to sell during the class period of securities fraud suits).

¹⁴² See *supra* subpart IV.B. However, as discussed in that subpart, it may be difficult for defendant to carry its rebuttal burden as to these plaintiffs' trading motivations.

Given the significant difficulties and uncertainties noisy markets present for FOM, the federal rule should be confined to the cases where liability is most soundly based, while permitting contracts, markets and state law to supplement liability.

V. STATE LAW AND OTHER ALTERNATIVES

A federal FOM theory is not the only potential protection against fraud. Criminal liability is available to deter the most egregious misconduct.¹⁴³ Numerous market and contractual protections are available.¹⁴⁴ Also, a market for regulation can address the defects of individual courts and regulators in much the same way that a market for securities ameliorates the judgment and information problems of individual investors. For example, Choi and Pritchard propose varying the presumption against regulatory intervention according to whether the regulators themselves face substantial competition.¹⁴⁵

More specifically, I suggest the possibility of relying on the same state regulators who are trusted with related issues of internal corporate governance. Thus, federal law should not preempt disclosure regulation enacted as a part of a state's business organization law and applicable to firms organized under that state's law. Like corporate governance cases, corporate disclosure cases would be litigated in the courts of the state of organization rather than wherever the plaintiff is able to sue a deep-pocketed defendant. In other words, the law and forum would be chosen *ex ante* by the contract embodied in the articles or certificate of organization rather than *ex post* at the time of litigation.

This type of choice-of-state-law approach would provide the basis for an efficient regulatory competition, as I have discussed elsewhere.¹⁴⁶ Indeed, it might be considered a market-type solution because parties choose the applicable rules contractually.¹⁴⁷ This approach would allow the states to compete and experiment with the problem of fraud in a noisy market in the face of the empirical and theoretical uncertainties of behavioral finance theory. The states also could work out the optimal level of liability, given the need both to deter fraud and to avoid over-deterring disclosure.

The above proposal would require a change in existing law because the Securities Litigation Uniform Standards Act (SLUSA) excludes most securities

¹⁴³ Criminal liability may be inappropriate for most run-of-the-mill securities frauds. However, the potential for criminal liability under existing law is relevant to the appropriate scope of additional civil FOM liability.

¹⁴⁴ See generally Larry E. Ribstein, *Market vs. Regulatory Responses to Corporate Fraud: A Critique of the Sarbanes Oxley Act of 2002*, 28 J. CORP. L. 1 (2002).

¹⁴⁵ See Choi & Pritchard *supra* note 4, at 50–51.

¹⁴⁶ See Larry E. Ribstein, *From Efficiency to Politics in Contractual Choice of Law*, 37 GA. L. REV. 363, 368 (2003).

¹⁴⁷ See Larry E. Ribstein, *The Important Role of Non-Organization Law*, 40 WAKE FOREST L. REV. 751, 788 (2005) (arguing that state organization law normally does not have significant effects on transaction form).

fraud class actions from state courts.¹⁴⁸ There is an important exception, the so-called “Delaware carve-out,” for class actions involving issuer purchases from or sales to its shareholders, or issuer recommendations or communications to its holders concerning their voting, response to tender or exchange offers, or dissenters’ or appraisal rights.¹⁴⁹ I propose extending the “Delaware carve-out” to any cause of action authorized by the state’s business association laws (including unincorporated firms) and applied to firms organized under those laws.

It is important to emphasize that this proposal would not involve an opt-out from existing federal securities regulation. Rather, the state action would supplement the federal action, and thereby provide a mechanism for imposing additional remedies for firms that view the FOM action as defined by *Dura* as too restrictive. The continued availability of a federal claim deals with the concern of a potential race-to-the-bottom in state disclosure laws, and the criticism that states do not internalize the costs fraud may impose on national securities markets. This is analogous to the legal situation of non-U.S. firms that elect to cross-list under U.S. law while remaining subject to the law of their home countries.¹⁵⁰

The proposed state remedy also deals with the concerns motivating SLUSA that state securities law might impose excessive burdens on corporations.¹⁵¹ Costs and benefits of the applicable state’s law would be reflected in the market value of the firms’ securities. Moreover, because only the law of the incorporating state would apply, firms need not comply with the law of every state where they have shareholders.

The Delaware Supreme Court opinion in *Malone v. Brincat*,¹⁵² which permitted shareholders to sue based on false financial statements in SEC reports and shareholder communications, indicates what states might do in this area. The court held that the disclosure duty was an aspect of the directors’ general fiduciary duties. It allowed recovery that SLUSA would have preempted because the fraud was not in connection with a recommendation for shareholder action.¹⁵³ However, the court accommodated the concern for excessive liability by holding that the plaintiff had to meet a high scienter standard.

Malone presents an alternative approach to balancing the competing policy considerations concerning FOM discussed in this Article. The Delaware

¹⁴⁸ See Securities Act of 1933 § 16(b), 15 U.S.C. § 77p(b) (2000); Securities Exchange Act of 1934 § 28(f)(1), 15 U.S.C. § 78bb(f)(1) (2000).

¹⁴⁹ See Securities Act of 1933 § 16(d), 15 U.S.C. § 77p(d) (2000); Securities Exchange Act of 1934 § 28(f)(3), 15 U.S.C. § 78bb(f)(3)(A)(ii) (2000).

¹⁵⁰ See Larry E. Ribstein, *Cross-Listing and Regulatory Competition*, 1 REV. L. & ECON. 1, 139 (2005), available at <http://www.bepress.com/rle/vol1/iss1/art7>.

¹⁵¹ See Jennifer O’Hare, *Director Communications and the Uneasy Relationship Between the Fiduciary Duty of Disclosure and the Anti-Fraud Provisions of the Federal Securities Laws*, 70 U. CINN. L. REV. 475, 510 (2002).

¹⁵² 722 A.2d 5 (Del. 1998).

¹⁵³ SLUSA technically did not apply because the action was filed before the effective date.

remedy is broader than the federal remedy because plaintiffs can sue even if they did not purchase or sell securities.¹⁵⁴ On the other hand, the state remedy deals with potential excesses of federal law by not applying the FOM presumption of reliance, imposing a higher scienter requirement, making the business judgment rule applicable to director judgments about disclosure, and allowing for the possibility of a duty of care opt out.¹⁵⁵ These aspects of state law explicitly allow courts to accommodate the corporate need to manage its information with the market's need for disclosure.¹⁵⁶

The Delaware rule suggests the possibility of other types of solutions to the problems discussed in this Article. For example, just as Delaware permits a remedy for non-sellers, Delaware could relax the *Dura* causation rule and clarify the situations in which defendants can be held liable for fraud on noisy markets. Moreover, Delaware offers the advantage of adjudication by expert judges who face corporate cases frequently, in contrast to the federal courts, and particularly the Supreme Court, which deal with these cases infrequently or rarely.¹⁵⁷

Although *Malone* suggests what states might do in this area, it is not a complete indication because the states have been constrained both by actual federal preemption since SLUSA and the omnipresent threat of federal preemption in corporate cases, particularly as to issues like securities fraud that are already dealt with in federal court.¹⁵⁸ Thus, the Delaware courts have been careful to respect the boundary between federal and state law.¹⁵⁹ A federal law clarifying the scope of preemption would free Delaware courts to develop rules in their designated sphere.

¹⁵⁴ See *Blue Chip Stamps v. Manor Drug Stores*, 421 U.S. 723, 731 (1975). Thus, Delaware would presumably allow a derivative remedy, which Booth suggests should be the only remedy for most securities fraud actions. See Booth, *supra* note 74. As this paper is going to press, the Supreme Court is considering whether a suit that cannot be maintained in federal court because it fails the purchaser-seller requirement is nevertheless barred from state court under the PSLRA. See *Dabit v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 395 F.3d 25 (2d Cir. 2005), *cert granted*, *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Dabit*, 126 S.Ct. 34 (2005). Whatever the Court decides, Delaware could entertain a suit arising under Delaware corporate law if Congress adopts the broad state law “carve-out” from the PSLRA this Article proposes.

¹⁵⁵ See O’Hare, *supra* note 151, at 481.

¹⁵⁶ See Macey & Miller, *supra* note 33, at 1061 (discussing the need for this accommodation).

¹⁵⁷ The difference in this respect between federal and state courts is particularly evident in contrasting Justice Breyer’s imprecise way of addressing fraud on the market in *Dura* with a contemporaneous opinion by Delaware Vice-Chancellor Strine that addressed in a sophisticated way the complex testimony of competing experts. See *In re Cox Commc’ns, Inc. S’holders Litig.*, 879 A.2d 604, 630 (Del.Ch. 2005).

¹⁵⁸ See Mark J. Roe, *Delaware’s Competition*, 117 HARV. L. REV. 588, 590 (2003).

¹⁵⁹ See *In re Oracle Corp.*, 867 A.2d 904, 925, 929 (Del. Ch. 2004).

VI. CONCLUSIONS AND IMPLICATIONS

Behavioral finance presents a challenge to courts and regulators regarding the appropriate scope of mandatory disclosure and fraud liability. Perhaps surprisingly, theories and evidence indicating that markets are not as efficient as was commonly accepted twenty years ago may present more of a problem for regulation's advocates than its opponents. That is because the argument for disclosure regulation and liability assumes knowledge of how markets will react to the information they are given. This may hold lessons about the implications for paternalism of the broader behavioral economics field.

This is particularly evident regarding the fraud on the market theory, which was explicitly based on an assumption of market efficiency. The Supreme Court's opinion in *Dura* suggests a significant contraction of that theory in ways that can be tailored to address the doubts raised by behavioral finance theory. Those concerned about undue reduction of fraud liability can turn to state corporate law, which can provide supplementary remedies in this area.

This analysis has more general lessons for determining the legal implications of behavioral economics and behavioral finance. Although the judgment errors and biases this literature identifies have been used to justify paternalistic laws,¹⁶⁰ in at least some contexts the literature may cast doubt even on remedies that are based on non-behavioral grounds. Although defendant may have exploited a judgment error, as through fraud or by manipulating a form contract, it may be difficult to separate out the effects of rational and irrational conduct. As with FOM, imprecision may result in excessive damages that deter socially productive behavior. In other situations, the defendant's conduct may not have caused any harm when analyzed from the standpoint of behavioral economics, even if the conduct seems suspect from a rationality perspective. In still other cases, it may be difficult to draw any legal conclusions from the current behavioral economics literature about what motivates conduct in the aggregate or in specific cases.

Finally, the rapid growth in behavioral finance theories should remind us how much we still do not know about how capital markets work. Just twenty years ago the Supreme Court in *Basic* was confident enough about the efficient capital markets hypothesis to make it a foundation of liability for securities fraud. Now both Congress and the Court have expressed significant reservations about FOM. We should remember this history before remaking securities fraud law in the image of behavioral finance and risking another round of expansion and retrenchment. Behavioral finance theory teaches that people can be overconfident. Courts and regulators should keep this in mind.

¹⁶⁰ See *supra* text accompanying note 1.