

Nicholas L. Georgakopoulos*

The Tortured Transition of Justifiable Reliance from Deceit to Securities Fraud

Abstract: *This article examines the reliance element of the securities fraud action. In order to understand its legal function, its origins in the "justifiable reliance" element of common law deceit are traced. An economic analysis comparing the economic function of common law deceit to that of securities fraud is used to appraise the current law and to propose refinements. Misrepresentations tend to influence financial markets more than markets for real goods. In financial markets, misrepresentations cause greater price movements that are more prolonged, misrepresentations attract global attention, are more frequent and more costly to uncover than misrepresentations in markets for non-financial goods. Therefore, financial misrepresentations cause greater verification waste than misrepresentations in markets for real goods. Moreover, the fear of fraud is at least as undesirable in financial markets as in markets for real goods. Participants in financial markets are not indifferent to fraud; they cannot diversify against it. The fear of fraud has the immediate undesirable consequences of inaccurate prices and of a reduction in trading and market liquidity. Both lead to lower prices and a greater cost of capital for issuers. The fear of fraud is shown, thus, to undermine both the contribution of the financial markets toward the optimal allocation of capital, as well as the financial markets' function as providers of low-cost capital to firms.*

*Associate Professor of Law, University of Connecticut; S.J.D. (Harvard 1992); LL.M. (Harvard 1988); Πτυχίο Νομικής (Athens 1987). Comments of Carliss Baldwin, Philip Blumberg, Deborah Calloway, Howell Jackson, Louis Kaplow, Reinier Kraakman, André Perold, Steven Shavell, Eileen Silverstein, Erric Sirri, and Steve Utz as well as those of participants in the Harvard Law and Economics, Harvard S.J.D., and the University of Connecticut Law School Faculty Seminars are gratefully acknowledged.

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Introduction

In 1976 the New York Nets had a very gifted basketball player, "Dr. J" Erving. After advertising their season tickets with the team's composition, the Nets traded Dr J. Disgruntled season-ticket buyers attempted to bring a class-action for deceit on behalf of all who bought tickets after the advertisement and before the announcement of Dr. J's trade. The court refused to certify the class because individual reliance questions predominated over questions common to the class.¹ Had the tickets been securities, the fraud-on-the-market theory would have presumed the ticket-buyers' reliance and the class action would be certified. Recently, the California Supreme Court refused to extend the use of the fraud-on-the-market presumption of reliance to deceit.² Why should reliance differ so radically between deceit and securities fraud?

This article compares the "justifiable reliance" element of deceit to its securities fraud³ counterpart, as securities fraud arises under section

¹Strauss v. Long Island Sports, Inc., 60 A.D.2d 501, 401 N.Y.S.2d 233, 235-36 (1977).

²Mirkin v. Wasserman, 1993 Cal. LEXIS 4451 (Sep. 9, 1993).

³Throughout the article, securities fraud will refer to fraud in a transaction in an organized exchange. Face-to-face transactions are analytically equivalent to the transactions envisioned by common law deceit and the securities fraud jurisprudence applies deceit-like rules to them. Therefore, they will not be distinguished from common law deceit. Although face-to-face transactions in securities regard investment goods (as opposed to the predominantly non-financial goods of common law deceit) the

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10(b) of the 1934 Securities Exchange Act.⁴ Justifiable reliance in securities fraud survives as two elements, reliance—which is (rebuttably) presumed by use of the "fraud-on-the-market" theory—and materiality.⁵

inherent lack of liquidity in such a market (which is implied by the nature of face-to-face negotiations) negates the desirability of a departure from common law.

⁴15 U.S.C. § 77j(b). The most famous securities fraud rule, issued under the authority of § 10(b), is Rule 10b-5, 17 C.F.R. § 240.10b-5. Other similar foundations for securities fraud consist of Rule 14e-3, 17 C.F.R. § 240.14e-3, or Rule 12b-20, 17 C.F.R. § 240.12b-20.

⁵The elements of common law misrepresentation are:

- (1) a false representation (an omission to disclose can be equivalent to a false representation),
- (2) knowledge of its falsity by its maker (or ignorance of its accuracy),
- (3) intention to induce action by the recipient of the misrepresentation,
- (4) reliance by the recipient on the misrepresentation in acting or refraining from action,
- (5) justifiability of the recipient's reliance (which is that the misrepresentation must be (5a) relevant and (5b) material),
- (6) damage,
- (7) causal relation of the damage to the actions induced by the justifiable reliance. See e.g., LOSS, FUNDAMENTALS OF SECURITIES REGULATION 712 (2d ed. 1988).

The environment of the securities markets causes different weight to be given to each of these elements as they are transferred into the world of securities fraud. Thus the elements of a Rule 10b-5 action are the following:

- (1) misrepresentation or nondisclosure in the face of a duty to disclose,
- (2) knowledge of the falsity or of the inaccuracy of representation and intent to deceive (scienter),
- (3) reliance,
- (4) materiality,
- (5) damage,
- (6) causation.

(See, e.g., 2 BROMBERG & LOWENFELDS, SECURITIES FRAUD AND COMMODITIES FRAUD 5:43, § 5.7(200) (citing Huddleston v. Herman &

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Economic analysis will be used to explain and justify the development of the fraud-on-the-market presumption of reliance, as well as to support its limitation to securities fraud. The recent refusal by the California Supreme Court in Mirkin v. Wasserman⁶ to expand fraud-on-the-market to deceit renders this analysis very timely.

On closer examination of the current fraud-on-the-market doctrine, this article finds that it exposes to fraud not only informed traders, i.e., the traders whose decisions to buy or sell are motivated by information, but also uninformed traders, i.e., those who buy or sell motivated by savings or consumption needs. Both effects are undesirable. Informed traders must be protected because they preserve the market's efficiency. Uninformed traders must be protected because their trading activity creates the market's liquidity and avoids the efficiency paradox. The interpretative corrections proposed by this article are also consistent with the logic and the origin of securities fraud jurisprudence.

MacLean, 640 F.2d 534 (5th Cir. 1981); Chiarella v. United States, 445 U.S. 222 (1980)) (Listing elements of private action in direct and personal transactions as "(1) misrepresentation or nondisclosure (2) of material fact (3) made with scienter (4) on which plaintiff relied (5) that proximately caused (6) damages to plaintiff."); see also 4 BROMBERG & LOWENFELDS, SECURITIES FRAUD AND COMMODITIES FRAUD 197 et seq., §§ 8.2 et seq. (Analyzing private actions in open market impersonal transactions into primarily Misrepresentation and Nondisclosure, Materiality, Scienter, Privity, Reliance, Causation, and Closed Transaction.) Not listed is the closed transaction element that Bromberg & Lowenfolds admit has many exceptions and "is being whittled away." Id. at 222.1 § 8.8. The fate of privity is similar. Id. at 206, § 8.5(120).)

⁶1993 Cal. LEXIS 4451 (Sep. 9, 1993).

Parts I and II explain and compare the role of reliance in the Common Law action of Deceit and in that of Securities Fraud. Part I reminds us that reliance in Deceit actions is, in fact, a test of causation. Part II shows that when reliance is presumed in frauds that take place in a securities market, the Fraud-on-the-Market presumption of reliance is just an adaptation of the law to the new environment of modern securities markets where causation has changed. Part II, however, also argues that the presumption of reliance has not yet completely adapted to the new surroundings. While uninformed long-term investors are adequately protected against fraud, informed speculators are inexplicably exposed to fraud with no recourse. Part III constitutes the Law-and-Economics heart of this article. Taking issue with recent arguments claiming that Securities Fraud rules are overprotective,⁷ Part III shows that Securities Fraud rules should be more "austere" than those of Deceit, meaning that Securities Fraud actions rather than Deceit actions should have greater probability of success and

⁷The primary article which favor relaxation of securities fraud rules while also focusing on fraud-on-the-market reliance is Paul G. Mohoney, Precaution Costs And The Law Of Fraud In Impersonal Markets, 78 Va. L. Rev. 623 (1992). In a similar spirit are Daniel R. Fischel and David J. Ross, Should The Law Prohibit "Manipulation" In Financial Markets?, 105 Harv. L. Rev. 503 (1991); Jonathan R. Macey, Geoffrey P. Miller, Mark L. Mitchell, Jeffrey M. Netter, Lessons From Economics: Materiality, Reliance, And Extending The Reach Of Basic V. Levinson, 77 Va. L. Rev. 1017 (1991); Jonathan R. Macey and Geoffrey P. Miller, The Fraud-On-The-Market Theory Revisited, 77 Va. L. Rev. 1001 (1991); Jonathan R. Macey & Geoffrey P. Miller, Good Finance, Bad Economics: An Analysis of the Fraud-on-the-Market Theory, 42 Stan. L. Rev. 1059 (1990); Richard A. Posner, Law and the Theory of Finance: Some Intersections, 54 Geo. Wash. L. Rev. 159 (1986); Daniel R. Fischel, Efficient Capital Markets, the Crash, and the Fraud on the Market Theory, 74 Cornell L. Rev. 907 (1989).

lead to larger damage penalties. The Fraud-on-the-Market presumption of reliance achieves both purposes, since, by making Securities Fraud class actions easier to certify, it increases both the probability they will be brought and the resulting damage award.⁸ The argument that Part III makes rests on the difference between the pricing mechanisms for financial goods⁹ and real goods. The comparison shows that the undesirability of deceit pales next to securities fraud. Not only is the fear of fraud in securities stronger, but this fear is very strongly undesirable because it increases the cost at which firms can raise capital by using the stock market, and because it reduces the market's efficiency, i.e., the accuracy of the prices of securities, which erodes the service that the market performs toward the optimal allocation of capital among firms. Moreover, it is not only the fear of fraud by the uninformed long-term investors that is undesirable but also its fear by the short-term informed speculators. Therefore, the protection of the informed against fraud does not only achieve the logical consistency for which Part II argues, but is also desirable from a policy perspective. The conclusion of this analysis is that fraud-on-the-market is a desirable development in securities fraud because

⁸Other elements that are shared by Securities Fraud and Deceit lead to a stricter regime in the former. An example is the evidentiary standard. Securities Fraud uses preponderance of the evidence, while Deceit must be shown with clear and convincing evidence, see, Herman & MacLean v. Huddleston, 459 U.S. 375 (1983).

⁹The terms "security" and "financial good" will be used as synonyms throughout this article, in their economic definition. The legal definition of a security is a much more complex issue which has reached the Supreme Court at least nine times, see LOSS, FUNDAMENTALS OF SECURITIES REGULATION, 165 et seq. (1988).

securities fraud rules should be stricter than deceit. By contrast, this article offers no support for the argument that fraud-on-the-market should expand so as to be used in common law Deceit, a conclusion that is in agreement with Mirkin v. Wasserman.¹⁰

I. Justifiable Reliance in Common Law Deceit

Deceit is one of the more logically intricate torts. The injury of the plaintiff has as its immediate cause the plaintiff's own actions. Recovery for self-inflicted injury is possible because the plaintiff's actions are alleged to have been a response to the defendant's false statement.¹¹ Thus, deceit involves two cause-and-effect chains. One from the false statement to the plaintiff's action and an other from the plaintiff's action to his own injury. Justifiable reliance is only relevant to the former causal link.

A. Reliance

Reliance is an essential element of the chain of causation that connects the misrepresentation to the plaintiff's injury: The

¹⁰1993 Cal. LEXIS 4451 (Sep. 9, 1993).

¹¹The defendant must have also made this statement with scienter, i.e., knowing its falsity (or disregarding its accuracy) and with the intent to influence the actions of the plaintiff. Although scienter, in specific, and intent, generally, are controversial topics that deserve analysis, they are outside the scope of this article. Therefore, the appropriate intent for culpability is assumed in this article's examples and its discussion. Regarding intent see, generally, SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* (1987); LANDES & POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* (1987); Shavell, Analysis of Causation and the Scope of Liability in the Law of Torts, 9 J. Legal Stud. 463 (1980); Robertson, Negligence Liability for Crimes and Intentional Torts Committed by Others, 67 Tulane L. Rev. 135 (1992).

misrepresentation influences the plaintiff only if it influences the plaintiff's actions, that is, if the plaintiff relies on the misrepresentation in acting or refraining from acting. Without the requirement of reliance, any misstatement might give rise to "crushing" liability¹² for the benefit of all possible plaintiffs whose actions coincided by chance with the choice of action suggested by the misrepresentation. The contention that the element of reliance is a test of causation is generally accepted.¹³

B. Justifiability as a Test of Avoidable Consequences

Notice, however, that reliance alone does not capture all the nuances of causation. Even if the plaintiff did undertake the injurious actions in response to a belief in the defendant's statements, this response may be "defective". The plaintiff may believe the statement erroneously, in that a "reasonable" plaintiff would detect or know its falsity. Furthermore, the plaintiff may have erroneously acted in response to the misrepresentation in that the misrepresentation was insufficiently relevant or significant for a "reasonable" plaintiff to act on it. Both the above errors of the plaintiff, the error of believing the misrepresentation and the error of responding to it, interrupt the chain of causation. In these cases the actions of the plaintiff

¹²The term "crushing liability" is used by Shavell in his pioneering article on economic analysis of causation to mean that if legal causation concepts are relaxed excessively, then the tortfeasor will be liable for an extraordinary number of remote "consequences" of the tort, a liability that would crush any tortfeasor. See Shavell, Analysis of Causation and the Scope of Liability in the Law of Torts, 9 J. Legal Stud. 463 (1980).

¹³The most respected corporate law commentator calls reliance "a part of the causal chain from violation to injury." CLARK, CORPORATE LAW 329 (1986).

and the damage they caused are an error of the plaintiff. They cannot be attributed to the misrepresentation and the defendant cannot be held liable for those damages, under the same rationale for which defendants are not liable for "avoidable consequence" injuries.¹⁴

An example will illustrate this point. Imagine that the misrepresentation suggests to the plaintiff that if she wants to reach the top of a rocky ledge, she should confidently climb the rocks because they are stable. If the plaintiff, injured by the unstable rocks, overlooked the existence of an obviously superior alternative to climbing, such as a nearby ladder, her deceit action will fail because her reliance is unjustified. The misrepresentation was not important enough to influence her actions, and she made an independent error in adjusting her actions to a consideration that is, however deceptive, immaterial. Her reliance exists but is not justified. Her injury cannot be traced to the wrong statement because her own error interrupts the chain of causation. Therefore, the climber cannot recover her injuries from the pedestrian.

In sum, the "justifiable reliance" element of the common law tort of deceit is not at all different from causation that has been rephrased from a question of fact into a question of law. All the attributes of common law causation are maintained. The plaintiff must plead that his actions were "caused by" the defendant by pleading that he *relied* upon the misrepresentation in acting. The defendant can assail this alleged causation by claiming that the plaintiff's actions were an error of the

¹⁴See PROSSER & KEETON, ON TORTS 458 (5th ed., 1984).

plaintiff and an "avoidable consequence" of the misrepresentation by pleading that the reliance of the plaintiff was not *justifiable*.

The incorporation of justifiable reliance as an element of the substantive securities fraud offence, rather than as an aspect of causation left for the fact-finder, would not have given rise to any problems if modern stock exchanges had not developed. However, the efficiency of securities markets changes the way in which a statement can cause injury. As the next part explains, in an efficient market a misstatement can cause injury without reliance. Therefore, defining the offence—securities fraud—including reliance as an element is underinclusive in that plaintiffs who may, in fact, be injured will not be able to recover. The courts answer this danger not by abolishing the reliance requirement in securities fraud actions—which would be the straightforward solution—but by presuming the securities-fraud plaintiffs' reliance.

II. Securities Fraud Reliance: Fraud-on-the-Market

In the transition to modern securities fraud rules, reliance loses much of the importance it commands in Common Law. Though causation itself retains its necessarily central role, the process by which modern markets set securities' prices renders the test of causation more objective and allows the circumvention of subjective tests, such as reliance, which seek to establish the cause of decisions of the plaintiff. The next paragraphs show that according to securities fraud jurisprudence, in the modern securities markets an individual's "choice of action" may be influenced by the misrepresentation even if the individual has not even heard the misrepresentation.

The fraud-on-the-market presumption of reliance was developed loosely and concurrently in several circuits with little homogeneity or consistency. Although supporting dicta appear in the early 1970s,¹⁵ the theory was established in the early eighties,¹⁶ with a lone forerunner in 1975.¹⁷ The Supreme Court in Basic Inc. v. Levinson¹⁸ offers a single coherent source for the theory.

In an efficient securities market, available information is assimilated into securities prices.¹⁹ Each piece of information adds to or subtracts from the price of the security. This does not mean that there is, by definition,

¹⁵See, e.g., Reeder v. Mastercraft Electronics Corp., 363 F.Supp. 574, 581 (S.D.N.Y. 1973).

¹⁶See Peil v. Speiser, 806 F.2d 1154, 1161 (3d Cir. 1986) (collecting citations); Finkel v. Docutel, 817 F.2d 356, 361 (1987) (collecting citations).

¹⁷Blackie v. Barrack, 524 F.2d 891 (9th Cir. 1975) cert. denied, 429 U.S. 816 (1976).

¹⁸485 U.S. 224, 108 S.Ct. 978, 99 L.Ed.2d 194 (1987) (Class Action of sellers who allegedly sold at prices depressed because of Basic's fraudulent denials of rumors about merger negotiations. The Supreme Court reversed the 6th Circuit's finding that statements denying correct rumors were per se material as well as the District Court's "bright-line" test that statements about corporate combinations are not material before a preliminary agreement, and set case-by-case standards of materiality, defined a rebuttable fraud-on-the-market presumption of reliance, and remanded.) ("Basic").

¹⁹See generally, Gilson & Kraakman, The Mechanisms of Market Efficiency, 70 Va.L.Rev. 546 at 568 et seq. (1984); Fama, Efficient Capital Markets: A Review of Theory and Empirical Work, 25 J. Fin. 383 (1970); but see Fama, Efficient Markets: II, 61 J. Fin. 1575 (1991) (finding exceptions to market efficiency). See also LORIE & HAMILTON, THE STOCK MARKET: THEORIES AND EVIDENCE (1973); Mandelbrot, Forecasts of Future Prices, Unbiased Markets, and "Martingale" Models, 39 J. Bus. 242 (1966); Samuelson, Proof that Properly Anticipated Prices Fluctuate Randomly, 6 Indus. Mgmt. Rev. 41 (Spring 1965).

one "true" price for a security. The price tends to be the market's best, but still imprecise, estimate of the present value of the future income stream that the security will produce.²⁰ Furthermore, statistical methods can only point to changes of prices in response to information—true price cannot be derived.

Public misrepresentations are assimilated into price as one more piece of information. By influencing prices, such misrepresentations influence all investors who trade at those influenced prices. But for the misstatement, all investors would have transacted at a different price, regardless of reliance on the misrepresentation or even awareness of it. In contrast to the Common Law environment where misstatements injure only those whose choice of action they influence, in an efficient securities market the effect of an erroneous statement influences all traders because it influences price. Traders "act on" the statement without having heard it because they transact at a price that is influenced by the statement.

The above reasoning has been adopted by the Supreme Court in Basic, Inc. v. Levinson.²¹ The Court, starting from the investors' confidence in the integrity of the market price, constructed a presumption of reliance on all public misrepresentations:

An investor who buys or sells at the price set by
the market does so in reliance on the integrity of

²⁰That the price will tend to be equal to the discounted future income stream of the security is a generally accepted principle of financial economics. See generally SCHWARTZ, EQUITY MARKETS passim (1988).

²¹485 U.S. 224, 108 S.Ct. 978, 99 L.Ed.2d 194 (1987).

that price. Because most publicly available information is reflected in market price, an investor's reliance on any public material misrepresentations, therefore, may be presumed for the purposes of a Rule 10b-5 action.²²

Reliance on the misrepresentation, thus, is presumed because of investors' "reliance on the integrity of [the market] price."²³

The dissenters in Basic, through Justice White, objected to what they saw as a claim that [the market] price acquire a "true value" through some metaphysical process:

While the scholastics of the medieval times professed a means to make such a valuation of a commodities "worth", I doubt the federal courts of our time are similarly equipped.²⁴

Justice White's objection was probably founded on a view that fraud-on-the-market meant that traders would be allowed to rely on the market for accurate pricing of their securities, and indirectly to the statements that may influence these valuations. Fraud-on-the-market, however, is

²²Basic, Inc. v. Levinson, 485 U.S. 224, 247 (1988).

²³Id. Some Circuit Courts have considered this phrase not to define reliance but to be a license to develop their own fraud-on-the-market theories. See Abel v. Potomac Insurance Co., 858 F.2d 1104, 1120 (5th Cir. 1988) ("Basic essentially allows each of the circuits room to develop its own fraud-on-the-market rules"; "a new, largely undefined, version of this presumption of reliance").

²⁴Basic, Inc. v. Levinson, 485 U.S. 224, 255 (1988) (footnote omitted) (White, J., dissenting).

distinguishable from indirect reliance, which is accepted in common law deceit.²⁵

1. Distinguishing Fraud on the Market from Indirect Reliance

The objection that courts should not have to determine *ex post* the accuracy of market prices would be valid for imposing an unreasonable burden upon the court. However, the fraud-on-the-market presumption of reliance does not require that the courts establish "a securities 'worth'." That the investors rely on the integrity, or propriety, of market price has little to do with the level, or accuracy, of that price. It is merely a claim that investors assume fraudulent information will not be encompassed in the price, an assumption which Basic acknowledges to be legitimate and protected by Rule 10b-5.²⁶ The courts only need to determine that a fraudulent statement has influenced price to the plaintiff's disadvantage

²⁵RESTATEMENT (SECOND) OF TORTS 2D § 533 ("The maker of a fraudulent misrepresentation is subject to liability for pecuniary loss to another who acts in justifiable reliance upon it if the misrepresentation, although not made directly to the other, is made to a third person and the maker intends or has reason to expect that its terms will be repeated or its substance communicated to the other, and that it will influence his conduct in the transaction or type of transaction involved.")

²⁶See Basic, Inc. v. Levinson, 485 U.S. 224, 245 (1988) ("The presumption of reliance employed in this case is consistent with, and, by facilitating Rule 10b-5 litigation, supports, the congressional policy embodied in the 1934 Act. In drafting that Act, Congress expressly relied on the premise that securities markets are affected by information, and enacted legislation to facilitate an investor's reliance on the integrity of those markets").

and the size of the influence of that statement on price.²⁷ Courts need not appraise the securities' "true" value.²⁸ Justice White's concern that the fraud-on-the-market presumption of reliance operates as a guarantee of accurate prices is wrong because the presumption operates as a guarantee that prices are not manipulated, even if they may be incorrect for other reasons.

The same confusion of fraud-on-the-market with indirect reliance seems to be at the center of the disagreement between the majority and the dissent in Mirkin v. Wasserman.²⁹ The dissent appears to disagree with the majority's refusal to adopt the fraud-on-the-market presumption of reliance in deceit arguing that indirect reliance has already been adopted.³⁰

²⁷Both the existence of an influence and its size can be easily measured by statistical methods of finance. See, e.g., Brown & Warner, Using Daily Stock Returns: the Case of Event Studies, 14 J. Fin. Econ. 3 (1986)

²⁸Notice that "true" value is distinguished from the price that the shares would command absent the misrepresentation. The courts must find the price that would prevail absent the misrepresentation, but that is a much easier feat than ascertaining "true" value.

²⁹1993 Cal. LEXIS 4451 (Sep. 9, 1993), *supra* note 2.

³⁰After discussing the case law on indirect reliance, the dissent concludes (at 73-74):

As this review of the relevant authorities demonstrates, the fraud-on-the-market principle that the federal courts developed in rule 10b-5 cases is fully consistent with the Restatement Second of Torts [§ 533] and with California law. In actions for intentional misrepresentation, our law has never required direct or "eyeball" reliance to sustain a claim, but has recognized the principle of indirect reliance, under which a fraudulent statement is no less actionable because it

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Indirect reliance in the deceit setting, however, is distinguishable because the causal chain and the injury to be recovered are different. The deceit plaintiffs seek to undo the consequences of their reliance, usually to rescind the transaction into which the misrepresentation led them. By contrast, the securities-fraud plaintiffs do not seek to undo their trades but seek to recover the portion of the price that they paid due to the inflation that the misrepresentation caused. Instead of reliance leading to the cause of the transaction (transaction causation), reliance in securities fraud litigation aims to the cause of the trading loss (loss causation). Whether without the misrepresentation the price would have been accurate (whatever that means) is irrelevant. At issue is the influence that the misrepresentation had on price. The economic analysis of Part III clarifies this difference. Even in the common law's acceptance of indirect reliance, parties to the ears of which the misrepresentation did not reach (directly or indirectly) cannot recover any overpayments they made due to the impact that misrepresentation had on prices. By contrast, this is the exact content

has passed through an intermediary and in the process has undergone a change in form before inducing reliance by a party who thereby suffers injury. The price of a security traded in an open and developed market may express the effect of a fraudulent statement just as surely as a credit rating (Rest.2d Torts, § 533, com. f), governmental certification (Learjet Corp. v. Spenlinhauer, 901 F.2d 198), doctor's prescription (Allen v. G.D. Searle & Co., 708 F.Supp. 1142), or even a child's importuning of a parent to purchase a particular breakfast cereal (Committee on Children's Television, Inc. v. General Foods Corp., 35 Cal.3d 197). In all such cases, the chain of causation is unbroken, and the element of reliance is established.

of the fraud-on-the-market presumption of reliance. Parties who ignore the misrepresentation can recover their overpayments due to the influence of the misrepresentation on prices.

To illustrate, we can envision a hypothetical investor who will purchase a security. Unknown to our investor, a false statement has elevated the price of this security, leaving the usual two choices to our investor: to buy or not. Price cannot be negotiated. If the investor buys, the misstatement will enter the investor's personal finances because it inflated the price at which the securities were purchased. In the traditional *caveat emptor* environment of Common Law, there would be no recourse since the investor would not have purchased the securities because of the misstatement. Our example illustrates a type of reliance different than the Common Law concept of reliance. Our investor did pay extra funds based on the misstatement, thereby "acting on" it. That the investor had not heard the statement should not matter: The market "heard" it and priced the securities accordingly, while the investor perforce "relied" on the market's information and paid the market price. The fraction of the price attributable to the misrepresentation is paid in reliance on it. The fact that the operation of the fraud-on-the-market presumption attributes the loss due to the inflated [or depressed] portion of the price at which the transaction took place to the misrepresentation, led courts and commentators to use the term "loss causation" in referring to this function of reliance. This term contrasts with "transaction causation" which refers to the function of reliance in deceit (and securities fraud in face-to-face transactions).

This "loss-causation" function of fraud-on-the-market must be distinguished from indirect reliance leading to "transaction causation." It is

easy to think that the role of fraud-on-the-market is to allow reliance on the "valuation" of the market. If indeed that was all that the fraud-on-the-market presumption did, its novelty would be marginal. That the acceptance of reliance on the market's valuation is not a significant change from the common law concept of reliance is best shown with an example. Returning to the example of the pedestrian and the lost driver, consider that the pedestrian—with the appropriate intent, as always—told a third-party driver the misrepresentation regarding the route's safety, knowing that all drivers exchange their information in a very efficient fashion—say in meetings of the American Automobile Association (AAA). If the party that suffered the landslide relied on the statement of a colleague who was reproducing the pedestrian's statement, this party would have indirectly relied on the guide's statement and would be allowed to recover under Common Law.³¹ Of course the example can be made closer to that of

³¹See, e.g., Varwig v. Anderson-Behel Porsche/Audi, Inc. 74 Cal.App.3d 578, 581, 141 Cal.Rptr. 539 (1977) (final buyer of an automobile had cause of action for deceit against initial seller who misrepresented car's title because of indirect reliance on the initial seller's statement to the intermediate buyer); Committee on Children's Television, Inc. v. General Foods Corp., 35 Cal.3d 197, 673 P.2d 660 (1983) (regarding children who watched misleading advertisements and requested their parents to buy serial; parents' cause of action for deceit plead reliance sufficiently because of indirect reliance upon the statement that was made to the children even if the children were not alleged to have repeated the statement to their parents; the court noted at 219: "Repetition, however, should not be a prerequisite to liability; it should be sufficient that defendant makes a misrepresentation to one group intending to influence the behavior of the ultimate purchaser, and that he succeeds in this plan."); RESTATEMENT (SECOND) OF TORTS § 533 (1977) ("The maker of a fraudulent misrepresentation is subject to liability . . . to another who acts in justifiable reliance upon it if the misrepresentation, although not made

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securities markets and prices: Say the pedestrian had actually recommended tires to the drivers, allowing the local shop to sell tires at an inflated price of \$10 while they would otherwise sell for \$5. In Common Law, the purchasers of the tires who do not rely (directly or indirectly) on the pedestrian's statement have no recourse against him for the \$5 financial loss they suffer when buying the tires.³² The fraud-on-the-market theory would allow such a recovery on the premise that the extra \$5 was paid because the market was influenced by the misstatement. The difference lies in that common law reliance operates under the premise not only that drivers who do not like the price of tires could try to find a different shop or negotiate the price, while investors who must buy securities have no alternative market and price is not negotiable but also that each individual's reasons for a transaction in real goods are purely subjective and may not be related to the price. In the Strauss example the Court noted that season-ticket buyers may have desired to see the opposing teams or to provide business entertainment rather than see J. Erving.³³

In economic terms—as Part III will elaborate—buyers are expected to buy if the utility they derive from the good exceeds the price. Sellers sell if

directly to the other, is made to a third person and the maker intends or has reason to expect that its terms will be repeated or its substance communicated to the other, and that it will influence his conduct.")

³²See, e.g., Strauss v. Long Island Sports, Inc., d/b/a The New York Nets, 60 A.D.2d 501; 401 N.Y.S.2d 233 (1978) (buyers of Nets' season tickets had insufficiently homogeneous motives for buying tickets for certification of class action alleging Net's deceit in advertising J. Erving as a member of the team and selling him before the season's start).

³³Supra, note 32.

prices cover their costs or utility. If all buyers and sellers behave in this way, goods are optimally allocated. Artificial prices—as in the tire example—cannot be maintained in the long term. Other sellers would step in and provide the tires at a lower price. The example of Strauss is distinguishable. If the fans motivated by Erving did not buy the tickets their price may not necessarily be lower. Their use would be lower to these buyers but the demand of buyers with other motives may have sustained the same price. Indeed, it is not hard to imagine non-native-New-Yorkers who may be fans of other teams and, therefore, prefer the Nets without Erving. The wrong advertisement may have resulted in tickets being bought by the "wrong" buyers but not necessarily a wrong price for the tickets.

Common Law appears not to allow the inference that since the tires' price is high, their use (utility) to the buyers is also great. This, however,—if true—is not a central choice but a corollary result of common law reliance, which is observable only because fraud-on-the-market brings it to the surface. Under securities fraud their reliance on the misleading statement of the high value of the tires would be presumed. The refusal of common law to allow buyers to draw inferences as to the goods' usefulness ("quality", "value", the "utility" they offer) from their price is in perfect agreement with the economic theory of pricing non-financial goods, where the utility each buyer derives from the good is unique and different from its price, just as Strauss illustrates. Exactly the opposite is the case with financial goods, a point which will be explained in Part III.

Exactly because the fraud-on-the-market presumption does not operate as a guaranty of accurate prices but as a guaranty of non-manipulated prices the implied concern of Justice White's dissent is not

valid. Were fraud-on-the-market to operate as a guaranty of accurate prices, then Justice White's objection that it renders federal courts into arbiters of value would be correct.

Justice White's dissent would be more penetrating if what he actually disliked in the fraud-on-the-market presumption that the Basic Court was constructing was the requirement of blind faith in the market's integrity.

2. The Problematic Requirement of Blind Trust in the Market's Integrity: the Zlotnick³⁴ Paradox

Justice White's objection to the fraud-on-the-market presumption of reliance raises—indirectly and unwittingly, perhaps—a different issue: namely, why the fraud-on-the-market presumption of reliance requires a *blind* trust in the integrity of the market.³⁵

The Basic Court made the presumption of reliance rebuttable rather than absolute. In the rebuttable presumption, defendants may interrupt the chain of reasoning that yields indirect reliance. There are two points in the chain of causation where the presumed reliance may be rebutted. The first is the obvious premise of the theory, market efficiency. Efficiency means that prices react to statements. Absent market efficiency, absent, that is, the distortion of prices by the misstatement, the fraud-on-the-market

³⁴Zlotnick v. TIE Communications, 836 F.2d 818 (3d Cir. 1988) ("Zlotnick").

³⁵Justice White's concern implicitly raises this issue if Justice White is interpreted as saying that, but for the "blind" faith that Basic requires, the courts would not have to make what appeared to Justice White as a determination of securities' true value.

presumption cannot operate. Since efficiency is far from ubiquitous, this type of rebuttal is certainly correct.³⁶ More interesting, however, is the

³⁶The issue of whether price was influenced by the false statement is central to this causal step of the fraud-on-the-market presumption and to its rebuttal. A very similar issue, of whether price would be influenced, is the object of materiality. Materiality is tested by whether the information at issue would significantly alter the "total mix" of available information about the firm. See, TSC Industries v. Northway, Inc., 426 U.S. 438, 449, 96 S. Ct. 2126, 2132, 48 L. Ed. 2d 757 (1976); see also, Basic, Inc. v. Levinson, 485 U.S. 224, 232 (1988) ("We now expressly adopt the TSC Industries standard of materiality for the § 10(b) and Rule 10b-5 context.") Presumably, significant alteration of information results in changes in prices, hence its affinity to this step of fraud-on-the-market which asks whether prices were, in fact, influenced. Further, the purpose of the element of materiality appears to be different from that of reliance. Instead of testing causation, materiality has the dual purpose of shielding trivial misrepresentations from liability and testing whether the misrepresentation is likely to affect price. By showing materiality, the plaintiff implicitly shows that the defendant's statements are likely to have influenced price. This rebuttal of the presumption of reliance allows the defendant to answer that, although likely, his statements did not, in fact, influence prices and that, therefore, the plaintiff was not injured by the statement. Maybe the market was not efficient and did not take it into account, or maybe the market was perfectly efficient and saw through its falsity. If the market price was not affected by the misstatement, the plaintiff cannot have been injured by simply transacting at the market price, and he must tender a different theory causally connecting the injury to the misstatement (or omission) of the defendant.

In practice this rebuttal is confused with the "alteration of the total mix of information" test of materiality. Thus, if prices were not influenced, plaintiffs who should fail for lack of presumed reliance fail for lack of materiality of the false statements, even if the statements were important but their falsity was decoded by the market. See, e.g., In re Apple Computer Securities Litigation, 886 F.2d 1109, 1115 (9th Cir. 1989), cert. denied, 496 U.S. 943 (1990) ("We conclude that in a fraud on the market case, the defendant's failure to disclose material information may be excused where that information has been made credibly available to the market by other sources. The issue with regard to the bulk of Apple's misstatements is

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question whether the presumption of reliance should be rebuttable even if the market price was influenced by the misrepresentation. Basic preserved this rebuttability by hinging the presumption of reliance on the "trust in the integrity" of market price.³⁷ Therefore, even if the market price is

whether, in light of the press' documentation of Lisa's risks, a rational jury could nonetheless find a "substantial likelihood" that full disclosures by Apple would have 'significantly altered the "total mix" of information made available.');" In re Convergent Technologies Securities Litigation, 948 F.2d 507, 513 (9th Cir. 1991) (following the Apple reasoning); Hannon v. Dataproducts Corp., 976 F.2d 497, 503 (9th Cir. 1992) (applying the Apple reasoning but rejecting defendants contention that the market had been otherwise informed). Notice, by contrast, that the appropriate solution is to reject the presumption itself due to the non-influence of the prices: Freeman v. Laventhol & Horwath, 915 F.2d 193, 198 (6th Cir. 1990) (non-existence of an efficient market makes the presumption of reliance unavailable, with further citations); Reingold v. Deloitte Haskins & Sells, 599 F.Supp. 1241 (S.D.N.Y. 1984).

³⁷The language used by Basic is clear in this aspect: rebuttal is possible if there was either lack of influence on price or if the plaintiff did not trust the "fairness" of the market price:

Any showing that severs the link between the alleged misrepresentation and either the price received ... or [the plaintiff's] decision to trade at a fair market price, will be sufficient to rebut the presumption of reliance.

Id. at 248.

Among the examples of possible rebuttals, scenarios very similar to those about to be analyzed under the second possible exception are given:

For example, a plaintiff who believed that [the defendant's] statements were false . . . and who consequently believed that [the defendant's] stock was artificially underpriced, but sold his shares nevertheless because of other unrelated reasons, e.g., potential antitrust problems, or political pressures to divest from shares of certain businesses, could not be said to have relied on the

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influenced, if the plaintiff does not trust the market price as being a "fair" appraisal of the securities' worth, the defendant may be allowed to rebut the presumption of reliance and force the plaintiff to plead and prove actual reliance.

The next paragraphs will use an actual case of a rebuttal under this scenario to argue that no rebuttal should be allowed on the grounds of plaintiff's lack of "trust in the integrity" of the market price. This rebuttal, I will argue, exposes informed traders to fraud.³⁸ This burden on informed traders is undesirable because informed traders are the source of market efficiency. Exposing informed traders to fraud undermines market efficiency.³⁹ This rebuttal is not only undesirable from a policy perspective

integrity of a price he knew had been manipulated.

Id. at 249.

³⁸Notice that these informed traders are not "insiders" under either § 16 or Rule 10b-5.

³⁹The activity of informed traders is desirable and beneficial in the context of most U.S. securities markets. However, the opposite problem, of too much informed trading is also possible. If all market participants are informed then prices will be accurate but trading volume will be negligible and at the limit cease, a state called the efficiency paradox. In the real-world markets that approach the theoretical state of the efficiency paradox nearly all participants should be presumed to have information and large trades will move prices excessively to the disadvantage of the trader. Because of this feature of such a market, uninformed traders would find it very costly to participate. (I often view the German stock exchange as an example of a market close to the efficiency paradox, displaying little volume and little volatility; the excessive volatility that some researchers see in the U.S. stock market—primarily by Professor Shiller, see ROBERT J. SHILLER, MARKET VOLATILITY (1989) (collecting his earlier work); Robert J. Shiller, Market Volatility and Investor Behavior, 80 AM. ECON. REV. 58 (1990); Robert J. Shiller, Speculative Prices and Popular Models, J. ECON. PERSP.,

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but it is also logically inconsistent, since market efficiency is the premise of the fraud-on-the-market presumption. Furthermore, the next paragraphs will argue that this rebuttal is also unnecessary from a legal-doctrinal perspective. Just as the causation that reliance used to show in common law has disappeared in securities fraud and has shown that the concoction of the fraud-on-the-market presumption is unnecessary (because causation solves the problem of underinclusiveness created by requiring actual reliance by the plaintiff),⁴⁰ so is the concoction of a rebuttal unnecessary. Returning to common law causation concepts and pleading a traditional *avoidable consequences* defence to reliance replicates the only useful function of this rebuttal.

Zlotnick⁴¹ illustrates that requiring the plaintiff to show blind trust [in the integrity of the market] before presuming his reliance is wrong

Spring 1990, at 55.—I see as a healthy sign of uninformed trading. Unfortunately these are personal beliefs that have not been—and maybe cannot be—substantiated by empirical work.) In essence it is the mix of informed and uninformed traders that ensures proper operation of the markets. Informed traders bring efficiency; uninformed traders save the market from the efficiency paradox. *See infra* note 84 and accompanying text.

⁴⁰The reach of the tort of securities fraud would be underinclusive if actual reliance were to be required. Because in securities markets misrepresentations may influence prices regardless of actual reliance, misrepresentations influence trades and injure market participants by causing them to pay a premium or forego receipts due to a discount whether they are aware of the misrepresentation or not. The fraud-on-the-market presumption cures this underinclusiveness.

⁴¹Zlotnick v. TIE Communications, 836 F.2d 818 (3d Cir. 1988) ("Zlotnick").

because it denies protection to the very class of traders that ensure this integrity, namely informed traders.

Zlotnick sold "short"⁴² and then repurchased at a loss the fraudulently inflated stock of a majority-owned subsidiary of TIE Communications. By the time Zlotnick made his repurchase, TIE had manipulated the price of its subsidiary to his loss. The Court held that by selling short Zlotnick had manifested his disbelief in the accuracy of market price not only at the time of the sale but also at the time of his repurchase. Since he did not trust the integrity of the market price, he could not use the fraud-on-the-market presumption. The result of this reasoning, however, is awkward. If investors trade because they think a price is attractive, they deny faith in accurate pricing and, thus, waive use of the presumption of reliance. Market participants who try to profit from (and, in the process, correct) market inefficiency are deprived of the benefit of a legal rule based on market efficiency. In essence, Zlotnick allows manipulators to outwit those who are aware of the manipulation.

The reasoning behind Zlotnick and Basic is consistent:⁴³ If the plaintiff does not believe that the market is efficient then he cannot use the

⁴²"Short" sellers sell shares they do not yet own by borrowing them. They bet, thus, that the price of the shares will decline, which will allow the "short-sellers" to repurchase the shares that they owe at a lower price, thus profiting from the price drop.

⁴³Basic upholds the result of Zlotnick by allowing the presumption of reliance to be rebutted in instances where the plaintiff has not relied on the integrity of the market. See Basic, Inc. v. Levinson, 485 U.S. 224, 249 (1988) ("Petitioners also could rebut the presumption of reliance as to

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fraud-on-the-market presumption of reliance. Under this formulation of the theory, the presumption exists, in essence, only for the benefit of uninformed investors, usually long-term diversified investors. Short-term speculators who bet on fast fluctuation of prices presumably believe prices are wrong and lose the benefit of the fraud-on-the-market presumption. However, the existence of efficient markets depends on the existence of traders willing to take advantage of information and to trade when prices are wrong. Their trading corrects prices and ensures market efficiency. They do not "trust" the integrity of market prices, they create it. As a policy matter they must be protected against manipulators, because their participation in the securities markets is desirable: their participation guarantees the efficiency which allows uninformed investors to participate.⁴⁴ It is not only on policy grounds that we must allow informed traders to use the fraud-on-the-market presumption of reliance. The causal chain that fraud-on-the-market represents exists in their case and, therefore, their reliance must be presumed.

3. The Causal Chain behind Informed Trading: Reliance Exists but an Avoidable Consequences Rebuttal may still be Desirable

As already explained, the causal chain connecting the plaintiff's damage to the defendant's misrepresentation is simpler when a developed securities market is interposed between the two than it would be in the

plaintiffs who would have divested themselves of their Basic shares without relying on the integrity of the market.")

⁴⁴A model simulating the interaction of informed and uninformed traders which makes this intuition explicit is presented in the Appendix.

case of transactions in real goods. The plaintiff trades at an influenced price. The defendant's statement influenced the price. The injury of trading at the disadvantageous price is attributable to the defendant's statement regardless of the plaintiff's "trust" in the market's "integrity" or efficiency.

It would be wrong to conclude that this simplified concept of causation gives problematic results when applied in cases where the plaintiff knows the misrepresentation's falsity. The question is whether traders who knew of the misrepresentation would be given perverse incentives if they were allowed to recover their losses. The question is justified because lack of the rebuttal appears to encourage trading that destabilizes the market in the following scenario: One could ask us to imagine that Zlotnick had not concluded from his own research that the price was excessive but he had concluded that TIE's optimistic statement was false; that after selling short the hypothetical Zlotnick immediately repurchased the stock with no profit or loss but—if the defendant could not rebut his fraud-on-the-market reliance—with a right of action under securities fraud. If Zlotnick had a right of action in a concurrent sale and repurchase, no rationale should bar a right of action with only a purchase and no sale. This would be a very undesirable result because it would reverse the service toward efficiency that informed traders provide: under such a construction, if informed traders were to conclude that wrong statements inflate a security's price they would not sell but buy it and sue under securities fraud. Their trading instead of correcting prices would further distort them. Even if this is considered a plausible scenario and the

fear it induces has led courts to bar recovery for securities fraud by informed traders, it also receives a simple answer.

The fear expressed in the above paragraph is the only justification for the bar to recovery currently built into the rebuttal of the presumption of reliance. This fear, however, is idle. Not only is the prospect of trying to profit through costly federal 10b-5 litigation extremely unlikely in practice, but also the causation of the injuries by the statements is lacking. Although a causal chain exists from the misstatement to the plaintiffs' injury, their injury is self-inflicted because they could have easily avoided it by not trading. Because they knew the influence on price and their consequent damage when they decided to trade, the chain of causation from the misstatement to their injury is interrupted. A simple example illustrates the point. Issuer DCT Corp. announces that its earnings rose 20%, causing an analogous rise in the price of its stock. Although the reasonable trading strategy by those who saw through the misrepresentation is to sell at the new price, because under the presumption of reliance they can acquire a claim for the premium by buying at the inflated price, they do so. (In order to avoid losses due to any future price correction, they should also sell the bought shares immediately at the same price.) Although it does appear that the purchase premium these buyers paid was paid due to the market's reliance on the misrepresentation, in fact, the buyers exposed themselves to this injury because they foresaw it and could have avoided it easily by not trading. Notice that instead of an elaborate theory of rebuttals of presumptions of reliance, the substitute theory advocated here remains very simple. The reader must have identified it as the good old Common Law defense of *avoidable*

consequences.⁴⁵ The trader cannot recover if she could have avoided the disadvantageous trade. Since she knew that price was influenced to her disadvantage, she must show other reasons that forced her into the disadvantageous trade.

A complication of this *avoidable consequences* defence to the fraud-on-the-market presumption of reliance is that some plaintiffs should be allowed to recover even if they knew of the misrepresentation's falsity when they traded, provided their trading was unavoidable. Plaintiffs may be forced into the disadvantageous trade despite their knowledge. The issue is how to determine which plaintiffs may recover and which may not. Consider, for example, the purchaser of stock on "margin" (i.e., credit) whose stockholdings are forcibly sold because the misrepresentation she correctly decoded depresses price further.⁴⁶ Although the purchaser knew the falsity of the misrepresentation, she should be allowed to recover because her sale was forced. There was no voluntary action of the plaintiff that interrupted the chain of causation from misstatement to influenced price. The issue is to determine when this defence can be avoided. Compare the following examples. (1) An index arbitrageur knows that a certain stock in the index

⁴⁵See generally PROSSER AND KEETON, TORTS, 451-59, § 65 (5th Ed. 1984); *id.* at 459 (The theory of avoidable consequences "denies recovery for any damages which could have been avoided by reasonable conduct on the part of the plaintiff."; "It is suggested, therefore, that the theories of contributory negligence and avoidable consequences are in reality the same").

⁴⁶See 12 C.F.R. § 220.4(a)(4)(d) ("If any margin call is not met in full within the required time, the creditor shall liquidate securities sufficient to meet the margin call") (1991).

she is trading is inflated because of a misrepresentation but buys it because her investment strategy requires it. (2) A corporation about to launch a takeover must divest shares for antitrust reasons and sells stock knowing it is depressed by a misrepresentation. (3) A university fund manager knows that some stock is depressed artificially but must sell it due to political pressures to divest. Basic offers the last two examples as clear rebuttals of the fraud-on-the-market theory for lack of trust in the market's integrity.⁴⁷ Under the analysis suggested by this article the solution is not clear.

From a policy perspective the presence of uninformed trading in the market is beneficial in a different way than the presence of informed traders. The uninformed are the "liquidity providers." The index arbitrageur is a prime example of a trader who provides invaluable liquidity to the market. Her "blind" trading of all the stocks in the index ensures a large trading volume that allows other funds to flow easily into and out of the market. Although the service of the investors in these examples to the market is less tangible than the direct increase in efficiency resulting from informed trading, it is equally important, if not more.⁴⁸ We should be reluctant to impose liquidity providers with the cost of having to scout for information.

From the perspective of causation we must examine the force that caused the trades of the examples. The defendant by her

⁴⁷See supra note 37.

⁴⁸Uninformed trading saves the capital markets from falling into the efficiency paradox trap. See note 39, supra and note 84, infra, and accompanying text.

misrepresentation created the influence of price that would have injured the plaintiff. If, however, the plaintiff was aware of the danger and did not avoid it, then the cause of his injury is not the defendant's statement but his own decision not to avoid trading at the influenced price. His decision to trade regardless of the disadvantageous price is a decision subsequent to the misrepresentation and it interrupts the chain of causation connecting the misrepresentation to the injury suffered by trading at the influenced price.⁴⁹ Therefore the *avoidable consequences* defence should bar recovery under fraud-on-the-market although it does not literally rebut the reliance presumption of the theory. Strictly speaking, the plaintiff's injury was still caused by the misrepresentation. This causation, however, is remote because the plaintiff could have avoided the injury by not trading. The issue is whether the plaintiff was able to avoid trading. If he could not avoid trading, if he was forced to trade, then the proximity of causation between the misrepresentation and his injury is retained and he should recover.

At issue is the definition of "forced" or "unavoidable" actions in the context of the financial markets, where all transactions are to a certain extent voluntary—even the liquidating transaction after a margin call can be considered voluntary if it was clearly foreseeable. At first blush it would appear that a simple cost/benefit measure could be applied to determine a "financially forced" action: if avoiding the trade would cost more than the

⁴⁹See PROSSER AND KEETON, TORTS, 452, § 65 (5th Ed. 1984) ("The greater number of courts have explained [contributory negligence] in terms of 'proximate cause,' saying that the plaintiff's negligence is an intervening, or insulating, cause between the defendant's negligence and the result.")

amount by which the misrepresentation influenced the security (and the damage) then the trade was "forced." One should not rush to such a conclusion because significant negative externalities appear to follow the avoidance of trading, as Part III explains. The typical trader whose actions may be forced is the uninformed trader, the one whose trading creates activity—liquidity—in the market. It is the very existence of slightly forced trading that ensures the trading volume necessary for the market's continued existence.⁵⁰ Focusing a subjective cost/benefit analysis exclusively on the plaintiff while this plaintiff also provides a public good, liquidity, ignores the beneficial effect that his trading has for the market. Financial economics is very close to being able to quantify the benefit to the public that additional trading volume creates by creating more liquid markets.⁵¹ But until then, law-and-economic analysis cannot quantify the desirable force threshold for the purpose of barring the avoidable consequences defence (even if it is called a rebuttal of the fraud-on-the-market presumption of reliance).

⁵⁰For a theoretical model exposing this exact effect of forced trading see Bhushan, Trading Costs, Liquidity, and Asset Holdings, 4 Rev. Fin. Studies 343 (1991) (where a model is constructed of several markets for different securities which may have different liquidity; but for the semi-forced trading of the "noise traders"—a class of market participants close to the uninformed traders of this article—all informed and uninformed trading would concentrate in a single market).

⁵¹Two recent empirical studies come closest to disentangling the puzzle of the contribution of trading volume toward liquidity, Hausman, Lo & MacKinlay, An Ordered Probit Analysis of Transaction Stock Prices, 31 J. Fin. Econ. 319 (1992-93), and Huang & Stoll, Market Microstructure and Stock Return Predictions, (Owen Graduate School of Management, Vanderbilt University Working Paper 91-26, 1992).

Part II took the reader through the interpretation of the element of reliance in securities fraud and, indirectly, argued that the fraud-on-the-market consists of the practical eradication of reliance as an issue of law and restores it as an issue of fact, of whether the misrepresentation influenced prices. In Part I we saw that Reliance under the Common Law torts of deceit and misrepresentation seeks to establish that the plaintiff who is injured by his own actions did indeed rely on the defendant's statement in taking the injurious actions. Thus, in Common Law, reliance is one link in the chain of causation connecting an actionable statement to the plaintiff's injury. At the other extreme is securities fraud, which presumes that the plaintiff relied on the statement if the plaintiff "trusted the integrity" of the market price, that is, if the plaintiff traded without knowing the falsity of the statement.

Part II explained that the operation of the fraud-on-the-market presumption of reliance in securities fraud consists of two propositions: if one trades without information, his reliance is irrelevant to the causation of his injury from the statement (because it will be presumed), while if one trades with information (believing that prices will give him an opportunity to profit), he cannot plead securities fraud (because his presumption of reliance will be rebutted). This article argued that these results are contradictory. If efficient securities markets cause false statements to move prices, the injury to all market participants is equally "caused by" the statements, regardless of whether the traders knew or ignored the statement's falsity.

Hinging the presumption of reliance on the plaintiff's ignorance of the statement's falsity is not only wrong from a perspective of interpretive

purity, but it is also undesirable for policy reasons. Securities fraud jurisprudence should aim toward market efficiency, which will in turn lead to optimal allocation of resources. Market efficiency is promoted by savvy informed traders who can accurately translate statements into prices, a point elaborated in the theoretical model of the appendix. These informed traders, however, are the very group that the current version of the fraud-on-the-market presumption of reliance does not protect. For the market to be efficient, informed traders must be protected. The fraud-on-the-market presumption of reliance itself needs an efficient market to operate: a market where statements influence prices. Statements influence prices through the trading of informed traders, and securities fraud must be interpreted so as to protect them. The presumption of reliance must only depend on whether the false statement influenced securities prices.⁵²

⁵²Oddly, reliance as proof of the cause of the transaction itself (transaction causation) must retain its importance in cases where there is no transaction. If a plaintiff were able to plead securities fraud as the reason for not entering into a transaction that would have been profitable, the plaintiff must show that he did not enter into the transaction by acting on the misrepresentation.

Although this may seem to be inconsistent with this article's earlier analysis, it is not. Transaction causation is unnecessary when there is an open market transaction. The mechanism by which the market sets "nonnegotiable" prices makes transaction causation lose its importance in favor of price causation. If there is no transaction on the market, price has not yet taken its exclusive role as the item of paramount importance. All the other elements of the transaction, most importantly the identity and number of the shares to be bought or sold, remain unspecified. The purpose, thus, of transaction causation in this instance is to specify all the elements of the "not entered into" transaction.

Thus, it is no inconsistency that no securities fraud cause of action exists in absence of a trade on the market. Plaintiffs who can state a common law misrepresentation claim can still prevail.

The above section presented an intuitive theory of reliance based on absolute "loss causation" that is only one small step ahead of the current version of the fraud-on-the-market theory but much closer to Common Law concepts of causation.⁵³ If a misrepresentation causes a price movement, there is sufficient proof of causation of an injury to each plaintiff equal to the fraction of the price that was influenced to the plaintiff's disadvantage. Knowledge by the plaintiff of the misrepresentation's falsity is a defence, which functions like *avoidable consequences*: the plaintiff's voluntary trade is an intervening cause interrupting the chain of causation connecting the misrepresentation to plaintiff's injury. The plaintiff can avoid this defence by showing that she was forced to trade. The measure of force necessary to invalidate the avoidable consequences defence must be set by accounting for the benefit that trading has for liquidity. Since this determination is currently impossible, the measure of force should be set on a case by case basis.

Having concluded the examination of the transition of the notion of reliance from the common law tort of deceit to the statutory tort of

⁵³Analogous arguments in favor of pure "loss causation" have been made previously, see, e.g., Fischel, *Efficient Capital Markets, The Crash, And The Fraud On The Market Theory*, 74 Cornell L. Rev. 907 (1989); Fischel, *Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities*, 38 Bus. Law. 1 (1982). By contrast to previous arguments, this article connects reliance in securities fraud to its common law counterpart and shows that "loss causation" is not a radical or even a big step, but one that follows by necessity if the common law causation principles are applied to securities markets.

securities fraud, this article turns to the economic comparison of deceit and securities fraud.

III. Comparing the Economic Function of Deceit to that of Securities Fraud

This Part focuses on the economic justification of the two torts, Deceit and Securities Fraud. The justification is founded on how prices are formed in the underlying markets, markets for real goods in the case of deceit and markets for financial goods in the case of securities fraud. Sections A and B review our understanding of how prices are formed, dealing, respectively, with real goods and with financial goods. Real goods are priced by the marginal seller and buyer, while other market participants assign different subjective values to the good. Financial goods, by contrast, are valued equally by all buyers and sellers. The conventional Law-and-Economics analysis argues that Deceit rules are desirable because they prevent wasteful verification by market participants. In order to examine whether preventing verification is more strongly desirable in financial markets, Section C examines the difference in the influence of misrepresentations. Real goods' prices are influenced for a shorter time and by a smaller amount than financial goods' prices. Moreover, misrepresentations draw local instead of global attention, are less frequent and the cost of verifying a misrepresentation about a real good is trivial compared to verifying information about an issuer's operations. Section D argues that society should try to eliminate verification expense in secondary securities markets. The danger of fraud (and the counteracting verification efforts of traders) operates as a transaction cost, not necessarily influencing directly the price of securities but directly decreasing the desirability of entering in transactions. Even so, the indirect results are

less efficient markets and lower securities prices (higher cost of capital for corporations). Effective securities fraud rules promote both efficiency and a lower cost of capital for corporations.

A. Real Goods' Price Formation: Marginal Pricing with Subjective Valuation

Real goods are such because their buyers put them to real use. They derive utility from real goods directly, by using them. By contrast to stocks, bonds, and bank deposits, which are held in order to be liquidated, real goods are owned because they make their owners happier. Buyers of real goods decide whether to buy them based on how much utility they will derive from the goods. Buyers of financial goods decide whether to buy them based on how much they expect the goods to bring in liquidation. Granted, the characterization of any single good as a financial or real good is rarely clear but this does not interfere with the analysis⁵⁴ (although one

⁵⁴Prices of durable real goods may be influenced by their expected resale values (car advertisements show that car manufacturers think that their clientele finds cars are more desirable if they have higher resale values). This would lead to them apparently taking characteristics of financial goods, as when the mechanic buys used cars in foreclosures to repair and sell. Similarly, financial goods may offer their owners real enjoyment: A controlling block of a corporation's shares, for example, comes with the prestige of the chairman of the board, a corner office, limousine and secretarial services. The legal environment, sensitive to this change of character, did not consider controlling blocks securities for the purpose of the Securities Acts. See, e.g., Sutter v. Groen, 687 F.2d 197 (10th Cir., 1982) (presumption that sale of 50% block does not involve a security); Christy v. Cambron, 710 F.2d 669 (10th Cir., 1983) (81% block not a security); Oakhill Cemetery of Hammond, Inc. v. Tri-State Bank, 513 F.Supp. 885 (N.D.Ill. 1981) (sale of 50% block not involving a security). This interpretation has been reversed by the Supreme Court in Landreth Timber Co. v. Landreth, 471 U.S. 681 (1985).

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of the legal definitions of a security is a good from which the owner does not derive "any material benefits",⁵⁵ i.e., a good that is not real).

While often real and financial characteristics coexist in a good and, therefore, its pricing mechanism does not have the purity of being one of the two described here, we need to assume a purely real and purely financial good in order to observe the theoretical markets. The character, be it real or financial, that dominates in each good will determine which is the dominant market mechanism for it. When extraordinary circumstances change the good's character, the pricing mechanism will change as well.

The rules of securities fraud, the severity of which this article supports based on the financial goods' pricing mechanism, may be excessive for real goods, but this does not create problems for the infrequent and temporary instances when financial goods take real goods' characteristics (as they may, for example, during a fight for corporate control or in a bankruptcy proceeding). Commentators have not ignored this distinction. Professor Arye Bebhuck, for example, builds a model analyzing the transfers of control based on the "private benefits of control," nothing else than the real utility the controller gets from the financial good. Bebhuck, Efficient and Inefficient Sales of Corporate Control, (Harvard Law School, Law and Economics Discussion Paper, 1993).

On the other hand, the insufficient severity of common law deceit has been recognized for goods to which securities fraud does not apply because they are not securities. A typical example is the "lemon laws" that change deceit rules if the object of the transaction is a car. For their voluminous commentary, see Comment, The Tennessee Consumer Protection Act: An Overview, 58 Tenn. L. Rev. 455 (1991); Newton, Survey Of Developments In North Carolina Law, 1987: Ii. Commercial Law: When Life Gives You Lemons, Make A Lemon Law: North Carolina Adopts Automobile Warranty Legislation, 66 N.C.L. Rev. 1080 (1988) (collecting citations).

⁵⁵Silver Hills Country Club v. Sobieski, 55 Cal.2d 811, 361 P.2d 906 (1961) ("It bears noting that the [Securities] Act extends even to transactions where capital is placed without expectation of material benefits.") This definition is known as the "Risk Capital" test of whether something is a security. See, HAZEN, SECURITIES REGULATION 40 (2d ed. 1990) (quoting Silver Hills and offering further citations).

In addition to their being held for their use, real goods' pricing is so different from financial goods because real goods are usually subject to the "law" of diminishing returns, according to which the gains from using or producing additional units of the good decline. A family, for example, may place great value on their first car but the fourth would be seen as a luxury or even a parking nuisance. As buyers this family will buy their first car as soon as they have the money, while their fourth only if they have satisfied most other needs. As sellers they will be easily persuaded to part with their fourth car but they would have strong disincentives of being left with no car.⁵⁶

Let us study the interaction of these typical market participants in an example of a purely real good.⁵⁷

Example of Price-Formation in Real Goods: A real good has five potential buyers and five sellers. Buyer 1 would receive \$1 of use from a unit of the good, buyer 2 would receive \$2 and so on. A second unit is of negligible use to any of the buyers (which is manifestation of the "law" of diminishing returns). Seller 1 produces a single unit of the good for a cost of \$1, seller 2 for \$2, and so on. The cost of producing a second unit is extraordinary for all sellers (again, diminishing returns). In this market, three units of the good would be produced. Buyers 5, 4 and 3 would buy the units which would be sold by sellers 1, 2, and 3. The price for the good will be \$3. A graphical representation of this market would use the supply and the demand curves to show how many goods would be

⁵⁶{cite standard econ texts

⁵⁷The analysis that will be used, the simple downward-sloping demand, upward-sloping supply, is the simplest core concept of microeconomic theory. For a more technical version of the same discussion, see, e.g., KREPS, A COURSE IN MICROECONOMIC THEORY 263 *et seq.* (1990).

bought or sold at each price. The market "clears" at the price for which the number bought is equal to the number of goods sold.

The Supply/Demand Pricing Mechanism for Real Goods

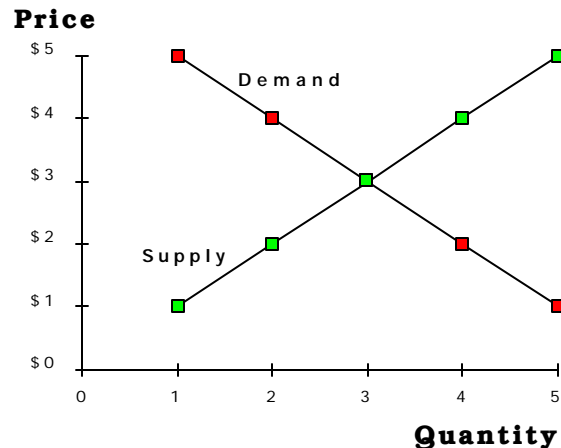


Figure 1: A graphical representation of the pricing mechanism that applies to real goods. The supply and the demand curves depict the number of units of the goods that would be bought or sold at each price. The market "clears" at the price that allows all goods that are offered for sale to be bought (here at a price of \$3). The numbers correspond to the example in the text.

The point of the example is that each market participant may place a purely subjective value on the good, different than its price, while price coincides with the valuations of the "marginal" buyer and seller. That some may value the good more than its market price does not allow them to profit because their diminishing returns ensure that additional units bought would produce less value for them than the market price. The same applies for the sellers; they cannot profitably produce additional units.

B. Financial Goods' Price Formation: Uncertain but Objective Valuation and Pricing

The fact that financial goods perform the same function of carrying wealth through time makes them equally valuable for all buyers and sellers.

Their only distinguishing features are the return (i.e., price appreciation plus distributions such as dividends or interest) that they promise and the risk at which they expose their owners' capital. Financial goods that offer the same return at the same risk are fungible. Furthermore, since each unit of a financial good performs the same function, they are not subject to diminishing returns.

The economic theory which describes the pricing mechanism of financial goods is the Capital Asset Pricing Model, the CAPM (cap-EM). Its author, Professor William Sharpe, received the Nobel Memorial Prize for Economics in 1990 together with Prof. Harry Markowitz, the author of its foundation, the Modern Portfolio Theory.

The Modern Portfolio Theory laid the foundation for the CAPM by separating the risk of securities into two categories, only one of which matters for typical investors. The volatility of securities prices is attributed either to circumstances unique to the issuing corporation, or to circumstances associated with the overall economy. The Modern Portfolio Theory explains that the former "idiosyncratic" risk can be disappear with diversification. The holder of the hypothetical War Co., which will perform poorly in peace, does not fear peace if she also holds Peace Co. Peace Co's success in peace will cancel out War Co's hardships.

Fluctuations caused by the performance of the economy, however, cannot be diversified since they will influence all securities in the same direction. The sensitivity of each security to the performance of the economy is undiversifiable, "systematic" risk. This sensitivity can be easily measured using statistical methods by comparing changes in the security's

returns to the returns of an index including all the securities in the market weighed by their corporation's size (capitalization). If the security's returns change on average as much as the market's, then their correlation is perfect and the security will have a "beta" of 1. If it moves half as much, its beta is .5, if twice 2.⁵⁸

The CAPM explained that since investors are only sensitive to the systematic risk of each security, securities with equal beta should offer equal returns. If they deviated from the price that offers equal returns, then a profitable no-risk trading strategy (an "arbitrage" opportunity) would arise. If, for example, the security's price were too high for its beta, one could sell it and with the proceeds buy a mixture of (a) risk-free debt of credit (lend or borrow) which by definition has zero beta; and (b) the market index. The mix of the market and debt must have the same beta as the security sold.⁵⁹ Since the security and the mixture have the same beta they have equal expected returns. The arbitrageur has only to wait for the mispricing to disappear and cash her profits. Empirical evidence has verified the proposition that securities are priced according to their beta.⁶⁰

⁵⁸See, e.g., Daniel R. Fischel, Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities, 38 Bus. Law. 1, 3-5 (1982).

⁵⁹Say that the sold security has a beta of .5; that would correspond to a portfolio of 50% index and 50% risk-free debt (Securities issued by the government are considered risk-free because of the government's capacity to print money and satisfy its obligations. This ignores inflation risk but is the closest proxy of risk-free debt.)

⁶⁰See Fama and MacBeth, Risk, Return and Equilibrium: Empirical Tests, 81 J. Pol. Econ. 607. Their results are reproduced, along with a

(footnote continues on next page)

The supply-and-demand pricing mechanism does not disappear in financial goods. The assumption of costless arbitrage and the disappearance of diminishing returns, however, change the picture dramatically. Supply and demand curves are horizontal. Any decrease in price results in unlimited buying, any increase in unlimited selling. The next figure depicts the supply-demand interpretation of the CAPM.

The Horizontal Supply and Demand of the CAPM

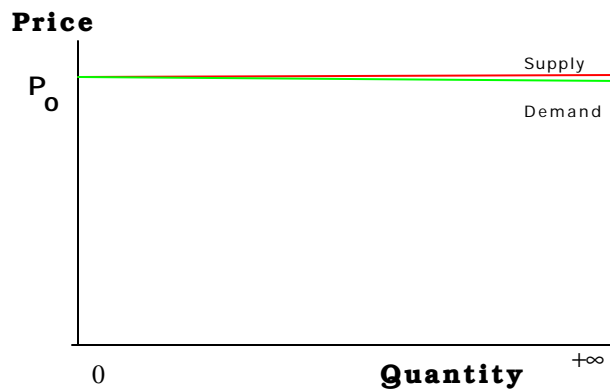


Figure 2: The graphical representation of the Capital Asset Pricing Model also shows the Efficiency Paradox, see *infra*, text accompanying note 84. According to the CAPM, everyone values the securities equally, here as having the value P_0 . Any price above P_0 leads to infinite selling, which is indicated by the horizontal supply curve which shows supply going to infinity at prices above P_0 . Any price below P_0 leads to infinite demand. The Efficiency Paradox is obvious: How much trading takes place if price is at P_0 (where it should be according to the CAPM)? None, according to the CAPM.

Having briefly described the theoretical foundations of the two types of markets in which common law deceit and securities fraud operate, we must now compare the effects of misrepresentations. Since we know that

description of the CAPM in BREALEY & MYERS, PRINCIPLES OF CORPORATE FINANCE 162 (3d ed., 1988).

the purpose of the two torts is the elimination of verification waste, let us first examine how verification incentives are different in the two markets. After the next section shows how this incentive is stronger in financial markets, Section D argues that the heightened concern about verification waste in financial markets is appropriate and justifies the more severe rules of securities fraud compared to deceit.

C. Differences in Verification Incentives

It is intuitive that misrepresentations have adverse impact on participants in both real and financial markets. Let us examine the effect of misrepresentations in the context of the simple examples we have already set up.

Example of a Misrepresentation in a Real Good: Starting with the 5-buyer/seller example we used to illustrate the pricing mechanism about real goods, we will introduce a misrepresentation. A lie reaches one potential buyer and changes her beliefs about the good's usefulness. Suppose this is buyer 1, who would only buy one unit at a price of \$1 but is now persuaded to buy it at any price up to \$5.⁶¹ Now two units are demanded at

⁶¹This example is distinguishable from Strauss, supra note 32, where the Nets advertised Erving as a member of the team and then traded him. The same misrepresentation—"come see Erving play for the Nets"—implies higher utility for some basketball fans and lower for others, the fans of the Nets' opponents. Thus, the misrepresentation may not influence prices despite failing to allocate the tickets to their highest valuing users.

The Nets example is one degree more complex than the above example but also underlines one more difference of real from financial goods. The complexity consists of the fact that the single statement of the Nets operates as two different statements depending on whether the recipient is a Nets fan. Once the two effects are separated, the analysis is analogous to the one in the text.

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\$5, one by buyer 1 and one by buyer 5. A third is demanded at \$4, a fourth at \$3 and a fifth at \$2. Notice that the misrepresentation shifted the demand curve right by one unit, the demand by buyer 1 that it moved (from point A to B in the figure). While without the misrepresentation this market cleared at a price of \$3, after the misrepresentation there is still demand at that price. A price of 4, however, is too great, since it produces excessive supply (four units to the three demanded). Since any price between \$3 and \$4 clears the market, let us posit a price of \$3.50.

A Misrepresentation about a Real Good

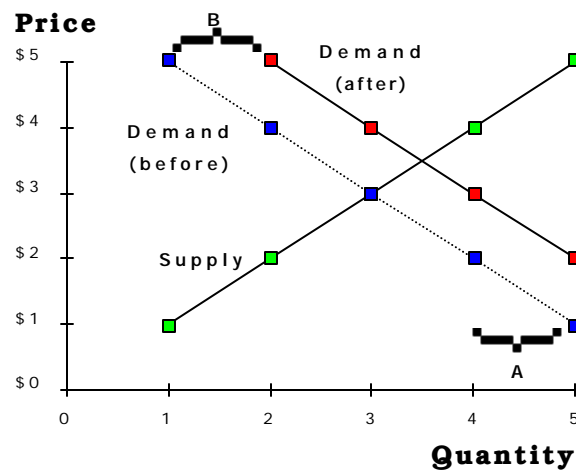


Figure 3: This is the graphical representation of a misrepresentation's interference with the typical market for real goods. Before the misrepresentation takes place, the Demand (before) and the Supply curves determine the price and the quantity of the good produced. According to the example, three units are produced and they sell for \$3 each. The effect of the misrepresentation is to change the subjective valuation of the good by one buyer, the one who would buy one unit if price dropped below \$1. This buyer's contribution to the Demand(before) curve is market by A, indicating the fifth unit at \$1. The misrepresentation, however, persuades this buyer that the good is worth \$5, making the buyer

The subjectivity with which the same piece of information influences the goods' desirability is a characteristic of real goods that Strauss brings to focus. In financial goods the only relevant statements regard their future returns and their risk. Two investors who agree on the meaning of a statement cannot reevaluate the asset in opposite directions. If it implies higher returns or lower risk it makes the asset more desirable for every investor.

demand the second unit at a price of \$5. This contribution to the demand curve after the misrepresentation is market by B. The result is a shift to the right of the demand curve and a higher market-clearing price.

Two are the striking features of this misrepresentation. First, it only influenced buyer-1's decision because buyer 1 would not have bought. If the misrepresentation had reached buyers 5, 4 or 3 it would have had no impact. Then, compare the misrepresentation's size to its effect on price. It changed the valuation of the good by buyer 1 from \$1 to \$5, a \$4 change while price changed only fifty cents. But that is only the beginning of the differences in the misrepresentation's effects between real and financial markets.

Trying to frame the financial good example in terms of supply and demand or of the CAPM is elusive. Traders who hear the misrepresentation will have horizontal supply and demand curves at the price (P_M) implied by the misrepresentation. Those who have not heard it have horizontal supply and demand curves at the original price (P_O). At any price between the two, one group would engage in unlimited selling and the other in unlimited buying. Neither the CAPM nor supply/demand offer any guess as to what the price would be in such a market.

A Misrepresentation about a Financial Good

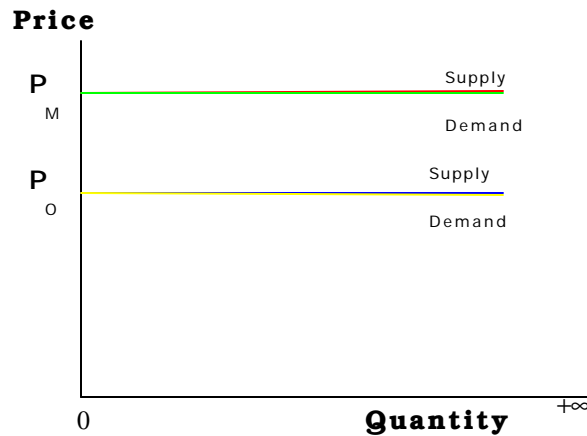


Figure 4: Trying to see graphically the implications of a misrepresentation in the terms of the CAPM does not result in an equilibrium. Those who do not believe the misrepresentation continue to consider the financial good worth its old price P_O . Those who are persuaded by it, consider it worth its misrepresented value, P_M . But the CAPM would have all the former selling infinite quantities and the latter buying infinite quantities at any price between P_O and P_M . This disequilibrium is resolved by Market Microstructure, which explains the limits on trading activity among market participants with different valuations.

The inability of traditional economic methods to deal with heterogeneously informed traders in financial markets spurred the creation of yet a new method in economics, a method that focuses with even more detail than microeconomics on the interaction between market participants. It is known as Market Microstructure and its disciples use game-theoretical methods. The quest is not for the equilibrium price but for the equilibrium strategy: the strategy that each type of trader will follow to break even. Once such a strategy is devised, every participant must react to the others' strategies and break even without giving the grounds to any other to revise their strategy for the better. Every strategy is the best response to every other one.

The problem of heterogeneously informed traders has been the object of Professor Sanford Grossman's work. His analysis, collected in his seminal book *THE INFORMATIONAL ROLE OF PRICES*,⁶² brings together the CAPM, heterogeneous information and risk aversion. Professors Anat Admati and Paul Pfleiderer bring into the analysis the competition among informed traders and the liquidity that uninformed trading generates.⁶³ Time pressure is brought into the analysis by Kyle, who posits that even insiders will cause prices to reflect their inside information if there is a time past which they cannot trade.⁶⁴

⁶²SANFORD GROSSMAN, *THE INFORMATIONAL ROLE OF PRICES* (1989).

⁶³Admati & Pfleiderer, *A Theory of Intraday Patterns: Volume and Price Variability*, 1 *REV. FIN. STUDIES* 3 (1988). Their conclusions are validated empirically by Barclay, Litzenberger & Warner, *Private Information, Trading Volume, and Stock-Return Variances*, 3 *Rev. Fin. Studies* 233 (1990).

⁶⁴Kyle, *Continuous Auctions and Insider Trading*, 53 *ECONOMETRICA* 1315 (1985). Interpreting Kyle's work as showing that timing pressure ferrets out information from informed traders may be unconventional. Kyle's article claims to show that insider trading is not undesirable because prices will be corrected by the insider by the end of trading. A permanent end to trading, however, is a rare event in the stock market, only exhibited in de-listings. If we accept that public announcement of the information also eliminates further profits by the insiders, announcement may also be equal to Kyle's end of trading. I have countered Kyle's conclusion regarding insider trading regulation by arguing that the relevant metric in order to decide whether to prohibit insider trading is the aggregate profits of informed traders. A prohibition on insider trading may reduce them, leading to greater liquidity of the market at the cost of little efficiency. Georgakopoulos, *Insider Trading as a Transaction Cost: A Market Microstructure Justification and Optimization of Insider Trading Regulation*, 26 *Conn. L. Rev.* 1 (1993).

To summarize the two decades of work that followed the CAPM in one paragraph, let us say that (a) risk aversion of informed traders reduces their impact on price, (b) the market's liquidity increases their number (their competition) and their increased competition increases their impact, (c) time pressure (such as an impending public announcement of their information) increases their impact. Of course, the wealth of informed traders also increases their impact.

The light that Microstructure sheds suggests that the market's reaction to a misrepresentation is very pronounced. First consider the fraction of traders who will believe the misrepresentation. If the fear of competition presses traders into fast decisions we should expect them to decide in favor of believing the misrepresentation and a greater fraction may believe it when competition is greater, that is in the more liquid stocks. Second consider traders' risk aversion. Are those who believe the misrepresentation more or less risk-averse than those who do not? If suspicion and disbelief are attributes of risk-aversion, the former will be less risk-averse and have a stronger influence on price. The third consideration, time pressure, does not even allow a guess as to its effect. Some misrepresentations may create the impression of time pressure in their believers if they anticipate a further announcement or verification. If a trader has falsely believed a statement that a merger is imminent, this trader may fear that an official announcement will eliminate trading profits by correcting prices to their post-merger levels. This trader feels the pressure to profit from his false information and will influence prices more than the traders who do not believe the information. Other statements may produce this effect in their disbelievers. The trader who does not

believe a statement denying merger negotiations, fears that official announcement of the merger will erode trading profits. In this case it is the disbelievers who feel the pressure to profit from their information before it becomes public. Since the former scenario seems a little more likely, those who believe in the misrepresentation seem to face the greater time pressure. In sum, misrepresentations in financial markets should be expected to move prices closer to the valuation they imply (the P_M of the previous figure) than to remain close to their original level (P_O).

Notice that the Courts applying the Fraud-on-the-Market have been sensitive to these issues. If the market is not liquid, they have refused to apply the presumption.⁶⁵ On the other hand, if the informed traders are persuaded that the misrepresentation is not true, again the presumption of reliance is rebutted.⁶⁶

Having seen the effect of a misrepresentation in a real and a financial market we have laid the foundation for our analysis. If verification efforts are equally undesirable in both, stricter securities fraud rules would

⁶⁵See, e.g., Freeman v. Laventhol & Horwath, 915 F.2d 195 (6th Cir. 1990) (market for municipal bonds insufficiently efficient for statements to be reflected in price, therefore the fraud-on-the-market presumption of reliance is rebutted).

⁶⁶See, e.g., In Re Apple Computer, 886 F.2d 1109 (9th Cir. 1989) (despite Apple's misrepresentations the press had informed investors about the failure of new products); In Re Donald J. Trump Casino Securities Litigation, 7 F.3d 365 (3d Cir. 1993) (other statements in offering sufficiently warned investors of risk so that no liability arose for some omissions), Roots Partnership v. Land's End, Inc., 965 F.2d 1411 (7th Cir. 1992) (inaccurate resatements by Land's End did not create liability when market knew the actual results).

be justified if the securities markets created stronger verification incentives. After the next paragraphs explain that misrepresentations in financial markets will tend to create stronger verification incentives than misrepresentations in real markets, the subsequent section will argue that verification incentives are at least as desirable in financial markets as they are in markets for real goods.

False statements in markets for real goods are less detrimental than in markets for financial goods: (1) False statements influence the price of real goods for a shorter time, only while their recipients are in the market. Financial goods' prices are influenced continuously until the false statements are corrected. (2) The influence of false statements on the price of real goods will tend to be small compared to the change in value that the misrepresentation implies. By contrast financial goods' prices have few safeguards to prevent them from changing to reflect the entire change in value that the misrepresentation suggests. (3) The influence of a misrepresentation about a real good is usually local and the misrepresentation only draws local attention and verification, while financial misrepresentations receive global attention and are verified internationally. (4) Misrepresentations about financial goods should be expected to be more frequent than misrepresentations about real goods. (5) Verification costs in real goods are smaller.

1. The Temporary Nature of Deceit's Interference with Real-Goods' Prices

The "false" prices that misrepresentations create in real goods are corrected as soon as the deceived participants leave the market. The reason lies in the way in which they influence prices. The presence of the

deceived party changes price because of the deceived party's contribution to demand or supply. As soon as the deceived leaves, price should return to its uninfluenced level. By contrast, financial goods' prices change by information, meaning that once they are influenced more than the simple absence of the deceived is necessary for their correction.

According to economic theory, the determination of prices is associated with the concept of "clearing" of the market. Prices will have to be set so that given the price everyone who would buy or sell at that price has done so.⁶⁷ Clearing, however, is not well defined in practical terms. Does the market for groceries clear every evening when the grocery store closes, or after every transaction when a customer walks away? Or does the market only clear when the season's produce is sold out? To the extent these questions can be answered, the answers will have caveats connecting each time period with the next: The grocer refuses to lower prices in order to sell more to the current customer to the extent she knows she can sell at higher prices to subsequent customers. Similarly, the grocer feels little pressure to lower prices in order to sell all produce before the end of the day. She knows that at little cost she can store the produce and sell it the next day. Similarly, even at the end of the season, for low enough prices someone will freeze produce for the next season. Again prices will not drop below that level.

⁶⁷Those who have not bought or sold have not because the price is too high for them to buy or too low for them to produce and sell. When everyone who would buy or sell has bought or sold, the market has cleared. {cite market clearing

To see that the influence of deceit depends on the presence of the deceived party in the market imagine a good for which the "carrying" that the grocer and the frozen food merchant did too costly. Markets must clear independently at the end of each period. Imagine that once the good is bought it serves its purpose for three periods, while three periods are also necessary for its production. Each buyer of this good is likely to not return to the market for two periods after each purchase. Deceiving one buyer may influence price in the current period, but will not influence the prices in the following two. Consider the five-buyers/five-sellers example, above. The shift in the demand curve only takes place on the period when the deceived buyer participates in the market.

The temporary influence of deceit on prices in real goods is limited by the degree of separation between periods. The carrying of the goods from one period to the next will carry the demand (or supply) of the deceived. Prices will no longer be independent by period. Provided carrying is costly, however, the possibility of carrying is not sufficient to fully equalize prices across periods. Carrying will not eliminate the difference in prices that allows it to be profitable. In other words, a sufficient difference must remain in prices to cover the cost of carrying.

Example of Failure to Equalize Prices due to Costly Carrying: Consider the good which has a cycle of usefulness of three periods. The supply and demand each period is identical to that of the five-buyers/five-sellers example, above. One buyer has been deceived in period one. (He will return in periods 4, 7 and so on.) The result is a price of \$3.50 on period 1 while the price was \$3 before. Carrying the good from one period to the next costs \$1 per unit. Since the price on the deceit-infected periods will be \$3.50 and on the uninfected \$3, carrying is not profitable and will not take place. The difference in prices across periods will persist. The price on periods 2 and 3 will be \$3, while on period 4 it will return to \$3.50.

A further reason reducing the duration of the influence of deceit on prices is the speed with which the deceived party usually discovers the truth. If I am told that an elixir will increase my strength within a month, the truth of this statement will be obvious a month later. My disillusionment will eliminate my contribution to the shift in the demand curve.

Neither of these two effects are the rule in the market for securities. Not only is carrying securities across trading periods costless (since securities need no costly storage) but also, frequently, the content of a false statement does not allow the listener to ever establish its truth or falsity. The problem is most acute for "forward-looking" information about the future prospects of the firm, the most important type of information for the determination of the price. Information about the past performance of the firm is practically irrelevant for its valuation. Investments are made for future returns. Information about this future performance determines the price at which investments are desirable. The uncertainty associated with any estimate of future performance has the effect of prohibiting management from making any predictions about the firm's performance. Any such prediction runs the risk of securities fraud liability. Given this problem, and acknowledging that forward looking information is the most important for the accurate pricing of securities, the SEC has tried to encourage predictions by shielding them from liability in several ways.⁶⁸

⁶⁸For example, Rule 175, 17 C.F.R. § 230.175 (1994) provides a safe harbor for forward-looking statements by shielding them from liability if they are made in good faith. See, Safe Harbor Rule for Projections,
(footnote continues on next page)

The commission's efforts, however, do not solve the problem investors have when trying to verify the valuation of securities. When looking at a single security it is impossible to distinguish an accurately priced security from an erroneously priced security. The accuracy of the security's price depends on the accurate calculation of the probability with which each different future price will materialize. Even after the fact, however, one cannot know whether the probabilities were right. One outcome materialized and can now be observed, but this is irrelevant information with regard to the probability with which this outcome would have materialized, which is the information that matters for accurate pricing.

Example of the Indistinguishability between Accurately Priced Securities Realizing Unexpectedly Good Results and Underpriced Securities: XYZ Corp. will be worth \$100 per share next year with 80% probability. In the unlikely event that a research project develops favorably (10% probability), XYZ will be worth \$150 per share. In the unlikely even that environmental liability arises from its facilities (10% probability), XYZ will be worth \$50 per share. Obviously, the risk-neutral valuation of XYZ is the present value of \$100. If a year goes by and the price is now at \$150 was the lower price wrong?

In sum, misrepresentations about real goods should be expected to influence their prices for a shorter time period for two reasons, because the influence on prices depends on the deceived party's presence in the market,

Securities Act of 1934, Release No. 6084 (June 25, 1979). The treatment of appraisals is analogous. Appraisals are uncertain valuations since they regard assets that have not yet been liquidated. Similarly to predictions, appraisals' uncertainty prohibits their announcement for fear of liability. The S.E.C. has reduced the likelihood that appraisals made in good faith give rise to liability by removing them from the note to Rule 14a-9 in which they used to be listed as examples of misleading statements. See also, Adoption of Amendments to Proxy Rules, Securities Exchange Act of 1934, Release No. 5276 (Jan. 17, 1956).

and because usually the statement's truth is ascertainable quickly. Misrepresentations about real goods are prone to also have a smaller influence on price than misrepresentations about financial goods.

2. The Small Price Impact of Deceit Compared to Securities Fraud

We saw in the example illustrating the movement of the demand curve caused by deceit, price did not change as much as the change in value implied by the deceptive statement. Two reasons contribute to the small effect of misrepresentations on the prices of real goods. First, a misrepresentation rarely influences all potential buyers. Therefore, the shift in the demand curve does not fully reflect the effect of the misrepresentation. Furthermore, the rise in prices will usually induce an increase in supply which would mitigate the effect of the misrepresentation.

President Lincoln expressed well in lay terms the reason why only a partial movement of the demand curve is the likely response to a misrepresentation: "you cannot fool all the people all of the time."⁶⁹ It is unusual that a misrepresentations would persuade all of the potential buyers of a good. Indeed, it is hard to specify what we should mean by a complete shift of the demand curve. If a misrepresentation persuades all buyers that the goods are "worth" \$4, its effect on the demand curve of our five-buyers/five-sellers example is not a parallel shift but a rotation: the curve will pivot counterclockwise to become horizontal at a level of \$4. A parallel shift should be envisioned in an unlikely example: the

⁶⁹Lincoln to a Caller at the White House, from Alexander McClure, *Lincoln's Years and Stories*, in *BARTLETT'S FAMILIAR QUOTATIONS* (1993).

misrepresentation persuades that the good performs a valuable function in addition to the ones it already performs and the use of this additional function is of equal value to each buyer. Only then, in the context of our five-buyer/seller example, will each buyer value the good \$1 more than before the misrepresentation, with the effect of a parallel shift up of the demand curve by \$1.

Securities markets provide the opposite environment, one where local and national borders are crossed at little—if any—cost, one where securities can be held for the long term at no cost. The profound internationalization of securities markets is proof of the lack of borders in securities trading.⁷⁰ The additional fact that a central clearing corporation holds all securities in most exchanges, eliminates any cost associated with storing securities.⁷¹ Furthermore, a fundamental difference of securities from real goods, the lack of diminishing returns, influences dramatically the capacity of small misinformed groups of buyers or sellers to influence prices. Since buying more units of the financial good, i.e., more shares, does not make additional ones any less desirable, even small groups who

⁷⁰See, e.g., Richard Bernard, International Linkages Between Securities Markets: "A Ring of Dinosaurs Joining Hands and Dancing Together"?, 1987 Colum. Bus. L. Rev. 321 (discussing ways in which the internationalization of securities trading is already implemented—most notably the possibility that clients of US brokers have to trade many non-US stocks in US exchanges through American Depository Receipts—and barriers to further unification).

⁷¹See e.g., Egon Guttman, Federal Regulation of Transfer Agents, 34 Am. U. L. Rev. 281 (1985); The regulation of clearing houses and transfer agents consists of Securities Exchange Act § 17A, 15 U.S.C. § 78q-1 (1994) and the rules the S.E.C. has promulgated thereunder.

think some security to be undervalued, have an incentive to buy as much of it as they can and exert great buying pressure on prices. This stands in stark contrast to the situation in real goods, where each buyer has use for only limited amounts of the good (diminishing returns) and, therefore, exerts limited pressure on prices. Even if many potential buyers were persuaded that a real good was worth more than its price, each would only buy a few units.

Even in the case where all buyers of the real good are persuaded by the misrepresentation and its the demand curve shifts by the entire amount that the misrepresentation implies, prices will rarely change as much. The reason lies in the increase in production that usually follows an increase in prices. This increase in production will usually have a depressing effect on prices to counter the inflationary effect of the misrepresentation. Thus, despite the full effect of the misrepresentation on demand, the increased supply mitigates its effect.

Economic theory illustrates this intuition by pointing to the upward (positive) slope of the supply curve. Its interpretation is that an increase in prices leads to an increase in the quantity supplied. The downward (negative) slope of the demand curve takes care of lowering prices in response to more supply. Therefore, the mitigating effect of supply increases on the effect of the misrepresentation on prices depends on the slope of the supply and the demand curves.⁷² The case of a horizontal

⁷²A more horizontal supply curve would lead to less of a price change in response to the movement of the demand curve (provided it slopes down). (A horizontal supply curve corresponds to sellers with unlimited production
(footnote continues on next page)

supply curve meeting a horizontal demand curve is a special case, a phenomenon that is practically unique to the securities markets.

By contrast, financial goods are not subject to sloping supply or demand curves.⁷³ A misrepresentation may well impact price fully, a point that was elaborated above, see text accompanying notes 64-65. An additional reason that makes the concern about wasteful verification stronger in financial goods is that their market is not local but global. A misrepresentation about a financial good has a global audience and induces global verification efforts.

3. Local versus Worldwide Attention to Misrepresentations

An additional difference in markets for real and financial goods is their size, whether they are a global or a local institution. Financial markets have already become international. Markets for real goods are usually local. A misrepresentation by a Connecticut snow-removal-

ability at the current price.) At the opposite extreme, a more vertical supply curve would fully translate any movement of the demand curve to a change in prices. (A vertical supply curve corresponds to producers unable to increase production in the face of higher prices.) Analogous caveats apply to the slope of the demand curve. A horizontal demand curve would lead to prices fully reflecting the change in demand (provided supply slopes up). Analogous results obtain if the deceived are not the buyers but the sellers, in which case we talk about shift in the supply curve. A horizontal demand curve would, in this case, result in no price changes (provided supply slopes upward), a vertical demand would result in prices fully reflecting the change in the supply and a horizontal supply would result in prices fully reflecting the change in the supply (provided demand slopes down).

⁷³{cite supra, distinguish evidence of slopes as occurring when financial goods become real goods.

equipment manufacturer with stock traded in the New York Stock Exchange is as relevant in Connecticut as it is in California as it is in Germany. German and U.S. investors are equally interested in the valuation of the firm because they can all trade in it at equal cost. By contrast, a misrepresentation about an impending snowstorm will only influence the demand (and price) of snow-removal equipment in the affected area.

The source of the difference is, again, carrying costs. Real goods must be carried to the place where they will perform their service and this carrying is costly. Financial markets, by contrast have organized transfer and clearing systems which eliminate any need for physical delivery of the certificates underlying the securities.⁷⁴ When an investor buys a security, regardless of his location, a simple entry in the books of the clearing corporation will transfer ownership of the security. Contrast this to the purchase of snow-removal equipment. In order for it to perform its services to its owner it must be transported. A misrepresentation may increase demand for snowblowers in Hartford, allowing dealers to forego sales and even enjoy markups. Boston and New York snowblower-dealers, however, cannot costlessly step in and satisfy the unexpected demand. They must undertake the cost of moving their inventory before selling it. They will not carry their snowblowers to Hartford unless the Hartford price is higher than their local price by more than the cost of carrying. If additional snowblowers arrive in Hartford, they will alleviate the effect of the misrepresentation by increasing supply and restraining price increases.

⁷⁴{cite clearing rules

The carrying cost, however, sets how close prices in Hartford can be to Boston and New York prices. The cost of carrying is the limit below which the difference in snowblower prices between Hartford and the other markets cannot be profitably reduced.

The global reach of financial misrepresentations means that the incentive to avoid them is global. All investors want to know equally strongly the truth about the security they buy. A snowblower buyer in Colorado is indifferent to misrepresentations that influence snowblower prices in the Northeastern United States. He has no incentive to verify the statement that has influenced snowblower prices in the Northeast.

The lesson for the law of deceit is that fear of misrepresentations in financial markets is more widely dispersed and, therefore, it will induce more verification. Distrust in statements about a security will induce verification the world over. Distrust in statements about the need for snowblowers leads to verification by local buyers only. Since verification is wasteful, the misrepresentation that produces less of it is comparatively benign and should be treated with more lenience by the law.

4. The Greater Frequency of Financial Misrepresentations

The incentive to verify is also influenced by the expected frequency of misrepresentations. If information is false only 1% of the time in which case it causes a loss of \$100, the incentive to verify is one dollar strong: If verification costs more than \$1, a risk-neutral market participant will not verify. If this information may be wrong half the time, the risk-neutral

individual would spend up to \$50 to separate the lies from the truths. Risk-aversion accentuates the importance of frequency.⁷⁵

The question of which type of misrepresentation should be expected with greater frequency is very abstract, because the difference between the regulation of misrepresentations in real and financial markets makes observing the frequency that results from current incentives irrelevant. We must start by imagining identical rules in both financial and real misrepresentations. Going back in time and comparing the pre-securities law world is practically impossible and inconclusive since the securities markets have evolved dramatically in the meanwhile. Attempts to draw empirical evidence by the reaction to the passage of federal securities laws remain controversial.⁷⁶ The only available approach is to theorize and extrapolate inferences from the incentives for misrepresentations that the two markets offer to misrepresenters.

Misrepresentations in real goods offer small gains to their maker. The price changes they cause (and the profits the misrepresenter will receive) tend to be small, temporary and local, as we saw in the previous paragraphs. Financial misrepresentations tend to have larger impact until correction on all influenced goods. The larger gains that financial misrepresentations appear to offer, however, are tempered by the fact

⁷⁵Compare two lotteries, one paying \$1,001.11 with probability 99% or \$900 with probability 1% to one paying \$1,050 or \$950 with probability 50% each. While a risk-neutral investor would consider the two equivalent, a risk-averse one would prefer the former.

⁷⁶{cite

that—since we are talking of misrepresentations in secondary markets—the issuing corporation does not receive all the gains from the higher prices the misrepresentation may cause. Indeed, it is unclear where these gains lie. Insider trading rules bar both shareholders and managers from taking advantage of mispricings directly.⁷⁷ Usually the gains are indirect: an acquirer inflates the price of their own stock before offering it for the target's stock; higher prices in one's employing corporation lead to larger performance-tied compensation, such as bonuses or options. Despite the indirect nature of the benefits, the size of the gains from financial misrepresentations is staggering compared with those available from misrepresentations about real goods.

If the incentives to make financial misrepresentations are stronger, they should be expected with greater frequency than misrepresentations about real goods. If financial misrepresentations are undesirable, the legal system must either increase penalties or increase the certainty (probability) with which financial misrepresentations will be penalized. The fraud-on-the-market presumption of reliance, which allows securities fraud class actions to go forward easier than deceit class actions, increases the probability that financial misrepresentations will be penalized.⁷⁸ Increased

⁷⁷{describe insider trading rules, cite

⁷⁸Identical is the effect of an easier for plaintiffs to meet standard of proof in securities fraud than the one of Common Law Deceit. See Herman & MacLean v. Huddleston, 459 U.S. 375 (1983) (Preponderance of the evidence is the standard of proof applicable to Securities Fraud actions despite that Common Law Deceit must be shown with clear and convincing evidence).

probability of liability leads to stronger deterrence, which is needed to counteract the stronger incentives for financial misrepresentations.

An additional concern makes the verification waste associated with financial misrepresentations larger than that of real misrepresentations. Financial information is prohibitively costly to verify.

5. The High Cost of Verifying Financial Information

How difficult is it to verify information about real goods? Everyone has verified information in some type of transaction. Used car buyers can verify the state of the mechanical operation of a very complex machine for about \$35. Home buyers can check houses with respect to every aspect of mechanical soundness (pest infestation, structural integrity, etc.) for under \$200. Consider these amounts as a percentage of the purchase price. The \$35 would be 3.5% of a \$1,000 car or 1% of a \$3,000 car. A \$100 appraisal of is 0.1% a \$100,000 house. Verification for \$150 of information about a ½ million dollar house costs 0.0003% of the purchase price.

Verifying information about securities, however, is prohibitively costly, practically impossible. The numerous examples of financial fraud that we see in litigated cases show that the false information could not be verified without the cooperation of its maker. Consider the example Equity Funding, an insurance company which overstated its assets. The fraud was communicated by disgruntled ex-employees to Dirks, a securities analysts. When Dirks tried to bring the information to light, respected newspapers and the S.E.C. ignored him. When he had his clients trade on it, the S.E.C. prosecuted him for insider trading.

In perfect agreement with what the previous sections explained, the effect of the misrepresentation on the price of the stock of Equity Funding was full, continuous and global. The stock of Equity Funding fully reflected the misrepresentation by trading at the price which assumed it to be true. The misrepresentation continuously influenced price for at least 3 years.⁷⁹ Its effect was global, since Equity Funding was based in California while the fraud influenced the price of its stock on the New York Stock Exchange. Despite the fact that huge profits were in store for whomever uncovered the misrepresentation, this had not been done. The costs that Dirks had to undertake to uncover it were very significant. After he received the tip, he left his New York office and went to California where he interviewed several employees of Equity Funding. He pursued his efforts for two weeks, despite the fact that senior management denied wrongdoing, until he could corroborate the allegations of fraud.⁸⁰

The example of Equity Funding is striking. Governmental auditors had reviewed the corporation's books and missed the fraud. How likely was it that anyone could uncover it without the help of an insider? Equity Funding's example shows that financial frauds can be prohibitively expensive or impossible to uncover.

⁷⁹The S.E.C. first received information about a fraud at Equity Funding in 1971. The uncovering of the fraud led the New York Stock Exchange to suspend trading in Equity funding on March 27, 1973. Dirks v. S.E.C., 463 U.S. 646 at 650 and n. 3 (1983).

⁸⁰Id., 463 U.S. 646 at 649-650.

The previous sections explained that financial misrepresentations have a larger and longer impact on prices, have a more global audience than real misrepresentations, would be more frequent and are costlier to verify than misrepresentations about real goods. It should be obvious that financial fraud poses a greater threat than real fraud and its rules should increase the likelihood that its plaintiffs succeed. But still, the objection could be raised that fraud in secondary securities markets does not matter for social welfare and efforts to curb it are unnecessary. The next section refutes this contention and argues that verification is at least as wasteful in secondary securities markets as it is in markets for real goods.

D. Verification Waste in Secondary Markets for Securities is Undesirable

If misrepresentations about financial goods influence their price more, for longer periods, have a wider audience, would occur more frequently and are costlier to verify than those about real goods, it should be obvious that the legal system should provide a stronger disincentive for financial misrepresentations. A presumption of reliance that allows class actions to go forward while they would fail if the rules of deceit were to apply seems a perfect answer. But the proponents of laissez-faire securities fraud rules would counter that fraud in secondary securities markets does not matter because investors diversify the risk of fraud away.⁸¹ This section rebuts this argument. Fraud in secondary securities markets matters because investors cannot diversify the risk of fraud. On the one hand, the arbitrage ("informed trading") necessary for the preservation of

⁸¹{cite mohoney

accurate prices is undiversified. On the other hand, even diversified trading is subject to the risk of fraud if it is biased. Although neither reaction may directly lead to lower prices, they will lead to a less efficient and less liquid market and, indirectly, to lower prices and a higher cost of capital for corporations.

1. Market Efficiency Depends on Undiversified Trading

One of the greatest inroads of financial theory was the explanation that diversification eliminates the risk associated with holding stocks. By holding numerous stocks, investors lose no sleep over the performance of any single one. Price changes of one stock are compensated by opposite changes in the price of others.⁸² Those who argue that diversified investors also diversify the risk of fraud overlook that diversified holdings does not necessarily imply diversified trading. A diversified portfolio can be construed by buying stocks one at a time. Liquidations of a diversified portfolio can happen one stock at a time. Although the popularity of mutual funds allow investors to trade the diversified portfolios of the mutual funds, that is definitely not the rule. Even if, for the sake of argument, we concede that investors always trade diversified, then the question becomes who trades to correct wrong prices and return market to its efficient state. The CAPM assumes that arbitrageurs, informed traders, will step in whenever prices deviate from accuracy and correct them. By definition, these traders are exposed to the risk of the single security in which they

⁸²See BREALEY & MYERS, PRINCIPLES OF CORPORATE FINANCE 162 (3d ed., 1988), *see supra* note 60 and accompanying text.

trade. But in order to understand the definition of informed traders and why they are not diversified we must return to Market Microstructure, the new area of Finance which examines the interaction of market participants in even greater detail than microeconomics, and the answer Microstructure gave to a related puzzle of financial theory, the efficiency paradox.

The efficiency paradox is an outgrowth of the CAPM, which only examines trading motivated by information. In the world of the CAPM wrong prices are averted because traders arbitrage them against portfolios with equal risk (beta). The efficiency paradox asks what happens if in such a world market prices are perfectly efficient, i.e., perfectly accurate. The CAPM would answer that there would be no trading since there are no arbitrage opportunities. But no trading implies that the market breaks down, which leads to the paradox that in its most desirable state of perfect efficiency a market would cease trading.

Market Microstructure explained that the above is a simplistic view of the motivation for market participation. Granted, some traders are motivated by trading profits. But others use the market as a long-term depository for their savings. Since history shows the stock market offers a return of 8% above bonds it is a desirable passive long-term investment. These long-term investors' trading is not motivated by information. They buy when they have disposable income to save and they sell when they need to dip into their savings. Their trading is motivated by decisions to save or consume, not by information.

The presence of uninformed traders averts the efficiency paradox. Even if prices are perfectly accurate, there will be buying and selling by the

uninformed. In the very short term—the time-horizon of Microstructure—their trades move prices, creating "noise," the small jagged price movements from trade to trade.⁸³ Informed traders survive by counteracting the noise, correcting the errors in prices that the uninformed create. When the error in the prices is large enough it gives rise to profitable informed trading (the arbitrage of the CAPM).

There is no paradox in the interaction of the informed and the uninformed traders. The uninformed, through their long-term investment, share in the economic growth which propels the stock market. But this participation is only possible because of the intermediation of the informed traders. Although the informed traders' profits come, effectively, out of the pockets of the uninformed, from the perspective of the uninformed this cost is the price for participating in a market with accurate prices while not pursuing information. Their interaction is equivalent to a contract by which the uninformed hire the informed to ensure that the uninformed trade at accurate prices. That the uninformed trade at slightly "noisy" prices compensates the informed for keeping prices accurate enough for the uninformed to participate.⁸⁴

⁸³That trades move prices in the short term has been irrefutably proved by countless empirical validations. Those which use Microstructure methods are Hausman, Lo & MacKinlay, An Ordered Probit Analysis of Transaction Stock Prices, 31 J. Fin. Econ. 319 (1992-93) (at 357: "[T]rading a larger quantity [of stock] always yields a larger price impact."); and Huang & Stoll, Market Microstructure and Stock Return Predictions, (Owen Graduate School of Management, Vanderbilt University Working Paper 91-26, 1992).

⁸⁴The solution of the efficiency paradox and the division of traders into informed and uninformed by Microstructure has been carried into legal academic writing. {cite

The effects of financial misrepresentations must be examined in this context. Diversification is obviously not a panacea that eliminates the need for fraud rules. Between the informed and the uninformed, only the uninformed can trade diversified. The informed traders, by definition, only trade in the securities that have wrong prices. They cannot diversify themselves against the risk of fraud. The question is how do the informed react to the risk of fraud.

Informed traders must be compensated for losses they incur due to misrepresentations or they will not provide their service of preserving correct prices. Their compensation can come from two sources. First, informed traders could reevaluate all securities downward, buying only if prices fall to a lower level. Since securities will pay the same dividend, at the new lower price that same dividend will be a greater rate of return. A \$1 annual dividend on a \$40 stock is a 2.5% annual return. The same dividend is a 5% return if the stock was bought at \$20.

This lowering of prices, however, only increases the payoffs to informed traders if they are buyers of the security and hold it for long enough to receive its returns which are a function of time. But informed traders are not long-term holders. They want to get out of their undiversified position as soon as possible. Moreover, informed traders are only buyers some of the time. Frequently informed traders would be short-selling overvalued securities.⁸⁵ As short-sellers, they not only do not receive the higher return, but they owe it to the investor from whom they

⁸⁵{explain short-selling

borrowed to sell short. The higher returns do not help but hurt short-sellers. In sum, lower prices do not help informed traders.

The alternative informed traders have is to refrain from correcting small errors in prices and to wait for larger deviations. If they only buy significantly undervalued securities and only sell significantly overvalued securities, they increase their expected profit per trade. Since their exposure to fraud takes place on each trade, the increased profit counteracts their losses due to fraud.

Example where Correcting Greater Price Errors Compensates Fraud-Related Costs: Informed traders exhibit risk-aversion⁸⁶ having a utility-of-wealth function $u(w)$ of the form $u(w) = -\frac{1}{w}$. Moreover, they know that the potential of misrepresentations makes their valuations subject to an error of 20%, so that firms they consider worth \$100 are worth \$80 or \$120 (each with probability 50%). If they were to gamble their entire wealth without any further borrowing on such a trade, they would prefer that there was no possibility that misrepresentations cause them erroneous valuations. If they were certain that their valuations were accurate, they would be able to know that, after their trade when prices returned to their accurate level, their terminal wealth w_t would be their initial wealth, w_i , times the inverse of the undervaluation, so that if they bought stock at 99% of its value, their terminal wealth would be $w_t = w_i / .99$. If they were to buy \$99 worth of this stock, they would end up with \$100 (i.e., $\$99 / .99$). But their risk-aversion makes them dislike the possibility that they could end up with \$80 or \$120. Their expected utility $E(u)$

⁸⁶The utility-of-wealth function used in this example exhibits constant relative risk aversion, meaning that individuals react the same way to the gamble of increasing or decreasing wealth by a relative amount (e.g., 20%), regardless of their wealth. Constant absolute risk-aversion would have individuals react identically to gambles for given amounts, regardless of initial wealth, which is obviously not the case. Disagreement still exists among economists whether individuals exhibit constant relative risk aversion or declining relative risk aversion. {cite

from the trade under the risk that misrepresentations make price changes to 80% and to 120% of their valuation, each expected with .5 probability, is

$$E(u) = .5 u(.8 w_t) + .5 u(1.2 w_t)$$

$$= -\frac{.5}{.8w_t} - \frac{.5}{1.2w_t} \quad , \text{ or, } E(u) = \frac{-1.041}{w_t} . \text{ Compare this to the utility of}$$

remaining with the initial wealth, i.e., not trading:

$$u(w_i) = -\frac{1}{w_i} . \text{ Trading reduces utility as much as a 4.1\% reduction in wealth. In}$$

order to be persuaded to trade, the expected utility of wealth must be greater than the utility of current wealth. How much smaller must initial wealth be to make trading worthwhile? In other words what percentage of terminal wealth must current wealth be, or at what a percentage x of their inaccurate valuation must shares be bought, to compensate for the traders' risk-aversion? This is the solution to

$$u(x w_t) = .5 u(.8 w_t) + .5 u(1.2 w_t) \quad , \text{ which using } n=1 \text{ implies}$$

$x=.96$, which means that the risk-averse traders must buy shares at less than 96% of their valuation to compensate for the risk of misrepresentations.⁸⁷ The identical analysis applied to short sales, assuming again that the trader must put up all her wealth to sell short an amount of shares equal to her wealth, leads to the same result that an overpricing of more than 4% is necessary to compensate the risk of misrepresentations.

⁸⁷More formally, if a discount of d is expected with probability p and a premium of r is expected with probability q , while with probability $1-(p+q)$ the valuation is accurate, then we have :

$$u(x w) = p u((1-d) w) + q u((1+r) w) + (1-p-q) u(w), \Rightarrow$$

$$x = \frac{d-r+dr-1}{(1-p+(1-p-q)r)d - (1+q)r - 1} \quad , \text{ or if } r=d \text{ and } q=p, \text{ then}$$

$$x = \frac{d^2-1}{(1-2p)d^2-1} . \text{ Both } x \text{ are positive and smaller than 1 for the}$$

relevant values of the parameters (remember that $2p \leq 1$ or $p+q \leq 1$).

The Discount Risk-Averse Informed Traders Require in order to Trade

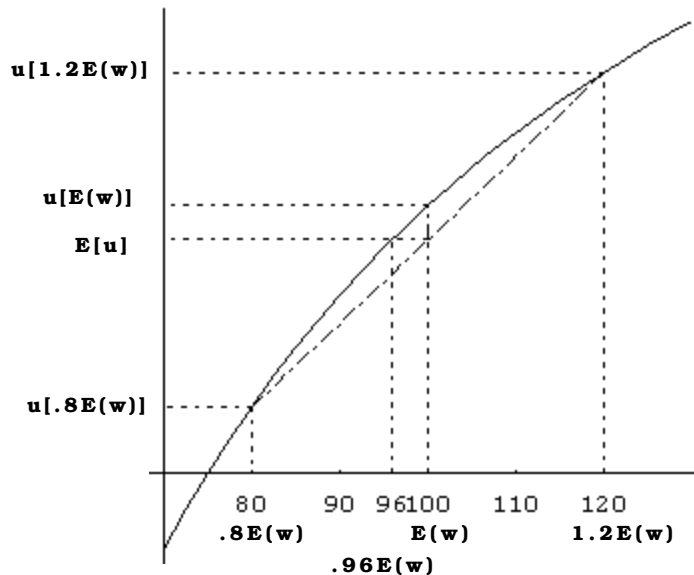


Figure 5: The graphical representation of risk-aversion shows how a utility-of-wealth function with upward but declining slope transforms what appears to be a fair gamble into a reduction in wealth. Our trader puts her wealth on the line because she has appraised a stock to be worth 100% of its value. If she buys at a discount the stock she values at \$100, the expected value of her holdings is \$100, $E(w)$, despite the fact that she makes a $\pm 20\%$ error. While if her valuation were accurate she would reap all the utility of her expected wealth, $u[E(w)]$, the error reduces her expected utility, $E[u]$, to the average of the utility she would derive from a 20% drop in the stock price, $u[.8E(w)]$, and the utility she would derive from an increase of 20% in the stock, $u[1.2E(w)]$. Because this expected utility is less than the utility of the stock's expected value, she will only buy if the discount is sufficient to cover the difference, here if the stock is below 96% of its expected value, $.96E(w)$. This value at which a risk-averse actor is indifferent between the uncertain outcome and the certain but lesser wealth is often referred to as the "certainty equivalent" of the uncertain outcome. This figure uses the utility function of the above example, $u[w] = -1/w$.

The point of the above example is that risk-aversion can be overcome by informed traders not by lower prices but by wronger prices. In the example the risk-averse traders would only trade if prices deviated by more than 4% from their valuation. This 4% is the profit margin the informed would require in order to trade in a world where misrepresentations influence their valuations by 20%. If valuations are inaccurate for more

reasons, then informed traders already require a margin of error in order to trade. The additional risk of inaccuracy due to misrepresentations increases the margin of error the informed require before trading. A wide margin of error in prices means that prices can deviate significantly from their accurate level. The efficiency of the stock market is eroded. But the undesirable effect on informed traders is not the end of the ills that the danger of misrepresentations bring. They also have an undesirable effect on uninformed traders, despite their diversification.

2. The Danger of Misrepresentations is Undesirable even for Diversified Uninformed Traders

So far the rebuttal of the laissez-faire-securities-fraud arguments respected the assumption that diversified trading eliminates the risk of misrepresentations. The premise of this assumption, however, is that misrepresentations induce errors in prices that on average cancel out (have a mean of zero) and that are independent, meaning that inflation of one security does not make inflation of other securities easier or more likely. Finally, but most importantly, this argument rests on the premise that numerous securities will be influenced by misrepresentations at any one time. Unless the influenced securities are numerous, diversification of securities does not lead to diversification of exposure to fraud. There is no empirical support for any of these conditions which the laissez-faire-securities-fraud scholars assume. Errors caused by misrepresentations may have means different than zero, and may be biased. In fact, some

evidence exists that points to this direction.⁸⁸ Moreover, the strong incentives that informed traders have to detect misrepresentations suggests that many would be corrected by the market even if lax deceit rules allowed them to be made.⁸⁹ The result would be a small number of influenced securities, insufficient for diversification.

The existence of mean-zero errors and of independence between errors is necessary for diversification to eliminate the effect of misrepresentations. If misrepresentations make prices on average higher or lower, then risk-averse uninformed traders will be averse to trading lest they buy stocks that are on average inflated or sell on average undervalued stocks. Even if the errors that misrepresentations induced were on average zero, diversified traders would still fear misrepresentations if their effects on the price of stocks were not independent. They would no longer count on the inflations to cancel with undervaluations. The lack of independence means that even if on average the influence on stocks cancel out, at the time that they are trading it is likely that more stocks will be either over- or undervalued. Cycles of manias and crashes are manifestations of such an

⁸⁸{cite co-presenters

⁸⁹In fact, case-law offers numerous examples of Securities Fraud litigation about statements that failed to influence price. See, e.g., In Re Apple Computer, 886 F.2d 1109 (9th Cir. 1989) (despite Apple's misrepresentations the press had informed investors about the failure of new products); In Re Donald J. Trump Casino Securities Litigation, 7 F.3d 365 (3d Cir. 1993) (other statements in offering sufficiently warned investors of risk so that no liability arose for some omissions), Roots Partnership v. Land's End, Inc., 965 F.2d 1411 (7th Cir. 1992) (inaccurate resatements by Land's End did not create liability when market knew the actual results).

effect.⁹⁰ Again, risk-averse traders fear buying when most stocks are overpriced or selling when most are underpriced. Finally, diversification only works in quantity. If despite the investors' simultaneous trading of numerous stocks, only one or two are influenced by misrepresentations, the investors' diversification does not increase the likelihood that the few influences cancel out, even if they have an expected mean of zero and are independent.

Uninformed traders can react in two ways to the fear of misrepresentations. On the one hand they can try to derive compensation from the market which would counter their fear of trading. But first we should examine a different countermeasure informed traders may have. They may want to filter out stocks influenced by misrepresentations from their trades.

a. The Undesirable Incentive to Become Informed

If even uninformed diversified traders fear misrepresentations they can try and avoid them by avoiding influenced stocks. But detecting stocks influenced by misrepresentations means informed trading. Instead of trading diversified, these traders would pick which stocks to buy or sell based on their assessment of their being influenced by misrepresentations. The fear of trading at influenced prices has been transformed into an incentive to become informed traders.

⁹⁰{cite irrationalities literature

The incentive to become informed is undesirable because uninformed trading is a healthy component of market activity. We saw that without uninformed trading the market would fall into the trap of the efficiency paradox. If incentives to abandon uninformed trading are given to uninformed traders, then the markets will move closer to the efficiency paradox. This is an undesirable consequence.

b. Compensating the Uninformed through higher Returns: An Increase in the Cost of Capital

If the uninformed do not choose to ferret out information, they will require compensation for trading despite their fear of fraud. This compensation can come from two sources. The uninformed can require lower prices in order to derive a higher return from their holdings. Alternatively they can avoid trading and trade less frequently. While the uninformed can do both, requiring somewhat higher returns and somewhat reducing their trading, both reactions have undesirable consequences.

c. Compensating the Uninformed through Longer Holding Periods: Illiquidity that Leads to Inefficiency

Uninformed traders can also counter the cost of exposing themselves to the danger of wrong prices by reducing the activity that does expose them to this danger. Since the uninformed traders are exposed to losses from fraud only when they trade, a simple way to reduce this undesirable exposure is to trade less. Trading less is achieved by lengthening their holding periods. An example illustrates:

Example of Cancelling the Cost of Fraud by Lengthening Holding Periods:⁹¹

Consider that, analogously to informed traders, uninformed traders are also risk-averse and prefer some reduction in wealth to trading. Assume that because of their trading a small proportion of their wealth in each stock while few may be influenced by fraud, the uninformed traders equate trading to a 1% reduction in wealth. Suppose, however, that by placing their wealth in the stock market they enjoy an 11% return, which is greater than their other investment alternatives. If they place all their wealth in the stock market for one year, they will incur two transactions, for two 1% reductions in wealth, but they will enjoy a 11% increase in wealth, leaving them approximately 9% better off. If they were to wait two years before liquidating, however, then they would enjoy a 22% increase in wealth with the same 2% fraud cost. If investors need a return after costs of 10% annually to put their funds in the market, these investors will only place funds in the market if they can be left there for two years. A further increase in the risk of fraud, which would lead to double the fear of fraud, namely 2% per trade, could again be overcome without increasing the return of the market but by further lengthening the holding period to 4 years. Over the 4 years investors' wealth would increase 44% while their two trades operate as a 4% reduction in wealth, leaving the same 10% return after costs to the investor.⁹²

⁹¹For a thorough and formal modeling of the influence of transaction costs on the length of holding period and the rate of return see Amihud and Mendelson, Asset Pricing and the Bid-Ask Spread, 17 J. Fin. Econ. 223 (1986).

⁹²For simplicity of computation, I assume no compounding of the interest rate and the cost of fraud is taken in both transactions to be a proportion of the initial wealth. In fact the cost of fraud in the liquidating transaction should be a proportion of the wealth after it has increased. A simple adjustment would show the same conclusions are true after annual compounding. If the cost of fraud is equal to a reduction of wealth by a proportion f , so that the trader's wealth after fraud costs is $w - fw = w(1-f)$, where w is current wealth, the return after fraud costs r^* is $r^* = [(1+r)^n - f(1+r)^n - f]^{(1/n)} - 1$, where r is the return of the market before costs and n is the length of the investment period in years. This is the relevant solution for r^* of $w(1+r^*)^n = w(1+r)^n(1-f) - wf$, where w is the initial wealth. If, according to the examples' hypothesis, the market return is 11% ($r = .11$) and

(footnote continues on next page)

That longer holding periods compensate uninformed traders for fraud costs they bear does not mean that fraud is not undesirable. Even if the reaction of the uninformed were exclusively to adjust their holding periods, the result is undesirable despite the fact that it has no direct effect upon prices and the cost of capital. The undesirability of longer holding periods takes us back into Market Microstructure and three recent empirical findings: (i) trading volume increases market liquidity, (ii) liquidity lowers the costs of informed traders and, therefore, attracts them to the market and increases their number; and (iii) more informed trading leads to more accurate prices, i.e. more efficient markets. But before examining this chain that leads to inefficiency from decrease in trading, let us get a better grasp on market liquidity.

Liquidity is the capacity of the market to satisfy trading requests. When an investor wants to buy or sell the market will provide a counterparty. Liquidity means that this counterparty will be found easily. The opposite state is illiquidity. Illiquidity implies difficulty in finding someone to fulfill the investor's trading request. This difficulty or ease can take two forms, one temporal and one regarding price. The temporal aspect of the difficulty in finding a counterparty is delay. The investor may submit his trading request but may have to wait a long time to find a counterparty. The price aspect of this difficulty means that a price concession will have to

fraud costs are 2% ($f=.02$), an after-costs return of 10 percent ($r^* > .10$) is achieved if the investor holds for longer than $n=3.76$ years. If the fraud costs are 1% then an after costs return of over 10% is achieved in 2.02 years.

be given in order to attract a counterparty. The investor who wants to buy may be unable to do so at the current market price and may have to offer to buy at a premium before someone accepts to trade with him.⁹³ Time and price are substitutes in this setting. The trader who is in a hurry will have to accept buying at a premium. But buying at a premium can be avoided if the investor is willing to wait.

The organization of stock exchanges reflects these features of liquidity. They are most obvious in the exchanges that are organized around specialist market-makers, individuals who have an obligation to trade at the prices and up to the quantities they announce with any investor. The IBM specialist, for example, on January 4, 1993 at 10:00 am, was willing to buy 800 shares at \$51¼ ("Bid") and to sell 3,300 shares at \$51½ ("Ask").⁹⁴ Since the specialist must always stand ready to buy as well as to sell, he cannot accept to do so for any number of shares or he would fall prey to informed traders.

Exchanges with specialists make it easy to understand liquidity. It shows in the specialist's willingness to trade. A willing specialist is representative of a liquid market. He would fulfill larger trades with

⁹³The most obvious expression of this is that large "block" trades cause price moves. This long known fact used to puzzle economists before the advent of Microstructure. See, e.g., {in Lorie Dodd. The same effect today is considered a natural component of liquidity. More recent empirical work tries to find how adversely the market reacts to trades of all sizes, large as well as small. See, e.g., {Hausbrook, Lo, {Huang & Stoll, {Barclay at al.

⁹⁴Data from the New York Stock Exchange Trade And Quotation database on CD-ROM.

smaller price concessions than an unwilling specialist, who would correspond to an illiquid market and would only accept to trade small quantities while rapidly readjusting prices to the traders' disadvantage.

Compare the following hypothetical trading scenarios, a hypothetical specialist's behavior in a liquid and in an illiquid market.

Liquid Market Example: Trader wants to buy 1,000 shares at a price of \$100 a share and approaches the specialist for this purpose. The specialist, having announced an "Ask" of \$100 for 1,000 shares, accepts but adjusts his Ask to \$100½ for 500 shares.

Illiquid Market Example: The trader approaches the specialist for an identical trade. The Ask is again at \$100, but for only 500 shares. After Trader buys 500 shares the specialist raises the Ask to 100½ and for only 300 shares. After Trader buys another 300 shares, the specialist changes the Ask again to \$101 for 300 shares. Trader finally completes the purchase of 1,000 shares but in the illiquid market it took 3 trades and an average price of \$100.35.

The undesirability of fraud depends on the finding that less trading will lead to less liquidity. The intuition that liquidity depends on trading volume is old,⁹⁵ and has received empirical proof from recent statistical

⁹⁵A casual search on LEXIS reveals voluminous statements connecting volatility with trading volume. See, e.g., Securities Exchange Act Release No. 21,324, 49 Fed. Reg. 37,200 (Sept. 21, 1984) ("The BSE [Boston Stock Exchange] shall bill the Montreal member for standard trade recording and value charges . . . The . . . linkage will enable the BSE to attract additional order flow which in turn enhances the depth and liquidity of the markets of BSE specialists."); Jonathan Macey & Hideki Kanda, The Stock Exchange As A Firm: The Emergence Of Close Substitutes For The New York And Tokyo Stock Exchanges, 75 Cornell L. Rev. 1007 at 1015 (1990) ("The more frequently trading opportunities are generated by a firm, the more liquid we would expect the firm's shares to be.").

evidence.⁹⁶ The legal system must not create incentives to trade less frequently because they erode this most valuable attribute of financial markets.

Liquidity is desirable almost by definition. Lack of liquidity means that traders must pay a premium to trade, whether this premium is money or time. Payment of a premium for trading is a transaction cost. Transaction costs are widely recognized as drag-forces on the economy and this one is no different.

The above example shows that, if prices are equally depressed in a liquid and in an illiquid market, the illiquid market would not offer informed traders enough profits in order to entice them into trading and correcting prices. In order to find out the difference in the characteristics of the liquid from the illiquid market, we must define the reaction of informed traders to liquidity. The question is how does liquidity influence the strategy of informed traders. The above phenomenon, that illiquidity does not allow correction of small price deviations, can be countered by the informed by one of two ways. First, the informed traders may require larger deviations before attempting to correct prices. Alternatively, they can compromise on the temporal aspect of illiquidity and not require speedy execution of their trades. In either case, the market's efficiency is compromised, since larger

⁹⁶Hausman, Lo & MacKinlay, An Ordered Probit Analysis of Transaction Stock Prices, 31 J. Fin. Econ. 319 (1992-93) ({write parenthetical}); Huang & Stoll, Market Microstructure and Stock Return Predictions, (Owen Graduate School of Management, Vanderbilt University Working Paper 91-26, 1992) ({write parenthetical}).

deviations from prices mean less accurate prices, and slower trading means delays in correcting prices.

The theory of Market Microstructure, supported by evidence,⁹⁷ points to an additional but less obvious consequence of illiquidity: as liquidity decreases due to less trading activity by the uninformed, the profits of the informed may decrease in the aggregate, but their decrease is less than proportionate to the decrease in uninformed trading. As a result, when the profits of the informed are counted per uninformed trade, they increase compared to the liquid market. For example, if in the liquid market the uninformed traded 200,000 times over a one month period, the informed would have a profit of \$20,000 from their monthly trading, or \$0.10 per uninformed trade. If for any reason, such as increased fear of fraud, the uninformed halve their trading to 100,000 trades per month, the profit of the uninformed will be reduced by the resulting illiquidity, but its reduction would be less than proportional to the reduction in uninformed trading, so that the informed may end up with profits of \$15,000 per month, or \$0.15 per uninformed trade. But the profits of the informed traders come, in essence, of the returns of the uninformed. In absence of trading profits by the informed, the uninformed would expect to precisely track the performance of the overall market. Given that the informed will take their cut, the uninformed expect to trail the market's performance by the profits

⁹⁷The theory is contained in the theoretical model of Admati & Pfleiderer, A Theory of Intraday Patterns: Volume and Price Variability, 1 REV. FIN. STUDIES 3 (1988). Their conclusions are validated empirically by Barclay, Litzenberger & Warner, Private Information, Trading Volume, and Stock-Return Variances, 3 Rev. Fin. Studies 233 (1990).

of the informed. The profits of the informed, however, are viewed by the uninformed as one more transaction cost. They are treated as a transaction cost because the uninformed only allow the informed to profit if they trade, by trading and to the extent they trade. Each uninformed trader knows that he can avoid trailing the market by not trading. If the uninformed never trades he is assured of matching the performance of the market. It is by trading that he allows the informed to take some value away.⁹⁸ Since illiquidity led the informed to profit more per uninformed trade, the illiquidity increases this transaction cost that burdens

⁹⁸A simple example illustrates how the uninformed view the per-uninformed-trade profits of informed traders as a transaction cost.

Assume a firm with total capitalization of \$100, \$90 of which are held by uninformed traders and \$10 by informed traders. Informed traders, predicting a price drop, sell \$5 of their holdings, resulting in their holding \$5 for the uninformed traders' \$95. Informed traders' expectations materialize and the market falls 20%, leaving uninformed traders with 95% of \$80, or \$76, and informed traders with \$4. Informed traders readjust their holdings to 10% (\$8) and participate with the initial ratio in dividends until they predict a price rise, whereupon they increase their holdings to 15%, i.e., \$12. The market rises, returning to its original \$100 level. Informed traders now hold \$15 and uninformed traders \$85. In the course of the two price moves informed traders first avoided losing \$1 and, subsequently, gained \$1 extra by trading on their information. The uninformed traders trail the market by \$2 and the informed traders lead it by \$2.

Informed traders gain at the expense of uninformed traders because they take advantage of price movements. Their profits take the form of a transaction cost burdening uninformed traders. The cost to the group of uninformed traders is equal to the total profits of informed traders. If informed traders outperform the market by \$100, uninformed traders as a group trail it by \$100. The expected cost of each transaction of a member of a group is this loss divided by the number of uninformed trader transactions. Thus, if informed traders beat the market by \$100 in a period during which uninformed traders make 100 trades, the uninformed traders expect to trail the market by \$1 for each trade.

uninformed traders, and, thus, has a feedback effect: If uninformed traders reduce their trading due to their fear of fraud, they will reduce liquidity and the reduced liquidity will result in larger costs of trading which the uninformed must counter the same way as they countered their fear of fraud, by either requiring higher returns or by reducing their trading.⁹⁹

Before closing we must cover one more undesirable effect that the fear of fraud would have by resulting in longer holding periods. It would reduce the amount of capital that would be available to the stock market. When fear of fraud leads investors to lengthen their holding periods, it precludes them from placing in the market funds they will soon need. The limitation in holding periods is a limitation in quantity of funds. Short-term funds will go to other investments, such as bonds or bank deposits. The longer the holding period that investors are induced to designate for stock-market funds, the more of their funds will have to be labeled short-term and go to these alternative investments.

But from the social perspective, we are not indifferent between more investment in the stock markets (leading to a lower cost of equity capital) and more investment in the debt markets and the potentially lower cost of debt capital. The reason lies in the undesirability of having firms focus their financing on short-term debt because it leads firms to place short-

⁹⁹Although direct evidence of this complex chain of reactions does not exist, the theory upon which the evidence offered by Admati & Pfleiderer, A Theory of Intraday Patterns: Volume and Price Variability, 1 REV. FIN. STUDIES 3 (1988). It has been validated empirically by Barclay, Litzenberger & Warner, Private Information, Trading Volume, and Stock-Return Variances, 3 Rev. Fin. Studies 233 (1990).

term strategy above the long-term.¹⁰⁰ A further decrease in the cost of borrowing and increase in the cost of equity financing will aggravate this

¹⁰⁰There is an inherent bias for firms to respond to issues that influence the value of debt more than to issues that influence the value of stock because of the greater efficiency of the debt market. Debt is easy to value because its future income stream is known, captured by the interest rate. Moreover, if debt valuation is wrong, it is easy to make riskless arbitrage trades to take advantage and correct the errors. Such trades have limited risk because the debt securities will mature in the relatively near future and allow the arbitrage transaction to wind up. (An arbitrage transaction involves buying and selling two nearly identical goods or securities. Arbitrageurs sell the overvalued one and buy the undervalued one. When the under- or overvaluations are over, the arbitrageurs reap their profits by selling the one they bought and buying back the one they sold. The ingenuity of this double transaction is that the arbitrageurs are indifferent to changes in the value of the good. Since they have both bought and sold it, they have no position in it and, therefore, changes in its value do not influence their wealth. Arbitrageurs only have a stake in the relative change in value between the good they bought and the one they sold.)

By contrast, the valuation of stock is much more difficult. Neither the future earnings or the risk of the firm can be observed. Arbitrage transactions are hampered by the indefinite duration of the stock investment (unlike debt, which is converted to cash on its due date, stocks are rarely converted to cash, only in takeovers or liquidations). Since the arbitrageurs cannot predict the time at which the value of the assets they are trading will take their "true" value, arbitrage transactions are more risky and less attractive. The result is that less arbitrage takes place in the stock market than in the debt markets. Since arbitrageurs monitor the accuracy of prices, debt prices are more accurate than stock prices. Professors Shleifer and Vishny start from this premise and argue that the result of this difference in efficiency between debt and equity markets is detrimental because firms and corporate managers become more sensitive to fluctuations in the value of debt rather than in fluctuations in the value of stock. Since firms and managers want to have high values for their securities (whether debt or equity) so as to have a lower cost of capital, firms will respond more to those issues which change the value of debt rather than those issues which change the value of equity. This is

(footnote continues on next page)

problem. If investors are encouraged to place their funds in short-term investments because large transaction costs burden long-term investments, the result would have to be lower rates of return on the short-term investments than otherwise. A decrease in the cost of debt will accentuate the inherent incentive of management to focus on the short term.

Although no empirical evidence can be collected that fear of fraud leads to a lower cost of capital, it is worth closing this article by noting that the United States do have the lowest cost of capital in the world and by a staggering margin. The cost of capital in the United States is 8% above inflation. The rest of the world follows nearly 50% behind at almost 12% above inflation.¹⁰¹ Economists try to explain the difference through volatility, but they have not been successful in so doing. Maybe law-and-economics can offer a better explanation: a better legal system, including a reduced fear of fraud.

Conclusion

This article has made the argument that the fraud-on-the-market reliance of securities fraud conforms to the causal chains observed in markets for financial goods. Furthermore, the incentives that result from

undesirable, argue Shleifer and Vishny, because the short-term nature of debt makes managers and firms focus on the short term while they should focus their strategic efforts on the long term. Shleifer & Vishny, Equilibrium Short Horizons of Investors and Firms, 80 Am. Econ. Rev. 148 (papers and proceedings 1990) (high efficiency and sensitivity of short-term financial instruments leads firms' managers to be predominantly concerned with the short term).

¹⁰¹{cite Ibbotson

fraud-on-the-market address the social concerns arising from false statements regarding goods in financial markets by minimizing the danger of transacting at manipulated prices. The structure which actual reliance imposes upon the tort of deceit, on the other hand, conforms to the causal chains observed in markets for non-financial goods and addresses the social concerns arising from false statements in those markets: False statements result in allocation of goods to other than their highest-valuing users. Fraud-on-the-market reliance matches securities fraud's concerns and goals. Actual reliance matches deceit's concerns and goals. Several side-effects of this match show that it is correct and appropriate.

Consider the remedies afforded deceit plaintiffs: rescission or out-of-pocket damages.¹⁰² Rescission directly remedies the misallocation caused by the deceit. Out-of-pocket damages compensate the victim for the misallocation caused by the deceit and operate as a substitute for rescission when it is unavailable or impracticable. (Example: The buyer of a good who would derive \$1 of use from it but buys it although at a price of \$3 due to a misrepresentation that she could derive \$5 of use from the good would receive out-of-pocket damages of \$2. This remedies the misallocation of a \$1 user buying a \$3 good.)

¹⁰²See Prosser & Keeton, Torts § 110, p. 765 *et seq.* Benefit-of-the-bargain damages are also awarded in deceit actions. Their award, however, has to be attributed to those circumstances where deceit is not easy to distinguish from a contract claim of warranty. In this case their economic justification would take us into the economics and the law of Contracts.

None of these remedies is appropriate in securities fraud. Allowing only those traders who traded in *actual* reliance on the misrepresentation to recover has no effect on the overall undesirability of trading induced by the danger of wrong prices. Only if all those who traded at the influenced price can receive the difference due to the influence will their fear of trading at wrong prices be addressed, which is fraud-on-the-market's achievement. Notice that such a remedy corresponds to none of the conventional damages measures. It is not rescission, which would not allow the defrauded buyers to retain any gains from the trade subsequent to the misrepresentation's uncovering, nor out-of-pocket, which would mitigate the misrepresenters' damage payments by any subsequent gains his victims may have derived from the trade, nor benefit-of-the-bargain, which should give those who did hear the misrepresentation the stock's implied value according to the misrepresentation and thus promote wrong prices by their trading. (Example: If trader A knows she will recover the value implied by the misrepresentation for a stock she will face no incentive to find the truth or adjust her trading for the danger that the information is false. The false statement will have the maximum impact upon price.)

The incentive effects that result from the differences of fraud-on-the-market from actual reliance also correspond to the socially desirable incentives. Were a misrepresenter in deceit to pay all buyers the difference in the prices they paid due to his misrepresentation (which would be the case if fraud-on-the-market were to apply in deceit), since his misrepresentation may have marginal or no effect on price he would face marginal or no incentives to not misrepresent. Conversely, an issuer misrepresenting the value of its stock would expect to pay minimal damages

were it only liable to those traders who traded acting on the false statement (which would be the case if actual reliance was required in securities fraud). At the extreme, the issuer could impose a halt of trading, make the false announcement and expect the new opening price to be the one implied by the misrepresentation, at which price, no trader who believed the misrepresentation would trade.

From the courts' perspective the administration of an actual-reliance deceit action is preferred over the fraud-on-the-market alternative, as is the fraud-on-the-market securities fraud action over the actual-reliance alternative. Finding evidence about and deriving the price that a non-financial good would have *but for* a misrepresentation is extremely difficult. It is very easy for financial goods, where standard statistical methods answer exactly that question.¹⁰³ Rescinding a transaction in non-financial goods is simple, while in financial goods it may require rescinding a series of subsequent transactions. Admittedly, the determination of out-of-pocket damages in real goods may be difficult since it is hard to observe the actual benefit and cost that accrue to the owner of a good. It is nearly impossible, however, in financial goods, where it is anyone's guess how the injured investors would have traded but for the misrepresentation. It is their gains from these other transactions which would be their damages in an actual-reliance out-of-pocket damage calculation. Were benefit-of-the-bargain damages to be considered in a securities fraud case, the court would have, again, absolutely no guidance in determining the price that the stock

¹⁰³See, e.g., Brown & Warner, Using Daily Stock Returns: the Case of Event Studies, 14 J. Fin. Econ. 3 (1986)

should have attained had the misrepresentation been true. The statistical inferences available for such cases are very weak.

A more difficult appraisal is required for the understanding of the function of securities fraud. The question is how much should society spend to enforce securities fraud rules and provide securities fraud justice. In essence, the issue is to balance the benefit of greater liquidity and lower cost of capital (which would follow better securities fraud rules and their more diligent enforcement) versus the costs of securities litigation and compliance. Although the benefits of a lower cost of capital are readily quantifiable, the current state of economic and financial knowledge does not allow us to appraise the value of liquidity. Therefore, answering this question must be designated as a topic for further research.

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This article has taken the reader through a transition of legal and economic concepts. Although the article has identified imperfections in the law—the erroneous rebuttal of the fraud-on-the-market presumption of reliance which disadvantages informed traders—the law is nevertheless surprisingly accurate in its response to the changes in the economic mechanisms. From the perspective of law-and-economic commentators, this laudable result may be a dramatic validation of economic analysis of law, if the legal developments were attributed to a better understanding of economics and their legal ramifications.

The opposite result, indicating that economic analysis of law is of little practical use, would follow a finding that the law adjusted without consulting economics, by using other methods which, nevertheless, yielded the economically correct result.

Both economic and legal thought were slow in realizing the difference of securities markets from markets for real goods. Economists, however, were first in describing the new mechanisms and understanding their function. Both the Efficient Capital Markets Hypothesis (consisting of empirical work which observed that prices in securities markets responded to information rather than supply and demand) and the Capital Asset Pricing Model (the theoretical understanding of the pricing mechanisms of the securities markets) were products of the sixties. The legal response, which culminated with Basic, came in the eighties, with only a shy

messenger appearing in the mid-seventies in Schlick v. Penn-Dixie Cement Corp.¹⁰⁴ Therefore, in the case of the adjustment of securities fraud to the economic mechanisms of the capital markets we find a validation of the practical importance of economic analysis of law.

¹⁰⁴Schlick v. Penn-Dixie Cement Corp., 507 F.2d 374 (2d Cir. 1974), cert. denied, 421 U.S. 976, 95 S.Ct. 1976, 44 L.Ed.2d 467 (1975).