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**IN RE SILICON GRAPHICS INC. :
SHAREHOLDER WEALTH EFFECTS
RESULTING FROM THE
INTERPRETATION OF THE PRIVATE
SECURITIES LITIGATION REFORM
ACT'S PLEADING STANDARD**

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I. INTRODUCTION

This Article presents an empirical study of changes in shareholder wealth resulting from the Ninth Circuit Court of Appeals decision in *In re Silicon Graphics Inc. Securities Litigation*,¹ which interpreted the pleading provision established in the Private Securities Litigation Reform Act of

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1. *In re Silicon Graphics Inc. Sec. Litig.*, 183 F.3d 970 (9th Cir. 1999). The case was a securities fraud class action brought by shareholders who claimed misstatements about company performance inflated the value of the company's stock and that corporate insiders profited from the inflated price through insider trading. The court dismissed the claims based on the rigorous standard it adopted. *See id.* at 980.

1995 (the "Reform Act").² Congress passed the Reform Act as part of an ongoing effort to protect corporations from abusive suits alleging "fraud by hindsight."³ In such suits, plaintiffs claimed that a sudden drop in a company's stock price was evidence that the issuer and its management covered up the bad news that led to the price drop. The Reform Act discourages such suits by requiring complaints alleging fraud to "state with particularity facts giving rise to a strong inference that the defendant acted with the required state of mind."⁴ Courts have interpreted the Reform Act's pleading standard in diverse ways.⁵ The Ninth Circuit's interpretation in *Silicon Graphics* is the most stringent, requiring plaintiffs to allege facts that would show the defendants were "deliberately reckless" in making the misrepresentation that gave rise to the fraud claim.⁶ This pleading standard allows courts to dismiss fraud suits at an early stage if the court deems they lack merit, but it also increases the risk courts will dismiss meritorious suits as well.

In this Article, we examine the effects of the stringent *Silicon Graphics* standard using event study methodology to provide empirical evidence regarding investors' perception of the Ninth Circuit's interpretation of the pleading standard. Event study methodology previously has been used to assess the effect of state corporate law on shareholder wealth.⁷ Our study differs from that prior work because it tests the market reaction to a decision *before* the United States Supreme Court has conclusively decided the question. Given the clear split in the circuit courts over the interpretation of the pleading standard, the Supreme Court is likely to eventually grant certiorari to resolve the issue. In the face of textual ambiguity in the statute and confusion in the legislative history, shareholder wealth provides one potential normative criterion the Supreme Court could consider to determine the "correct" interpretation of the Reform Act's pleading standard. In this case, social science has the potential to directly influence the path of the law.⁸

2. See 15 U.S.C.A. § 78(u)-4(b)(1) & (2) (West 1999).

3. Congress recently passed the Securities Litigation Uniform Standards Act, *see id.*, in an effort to prevent such suits from being filed in state court. See generally David M. Levine & Adam C. Pritchard, *The Securities Litigation Uniform Standards Act of 1998: The Sun Sets on California's Blue Sky Laws*, 54 BUS. LAW. 1 (1998).

4. 15 U.S.C.A. § 78u-4(b)(2).

5. See *infra* text accompanying notes 55-64.

6. *In re Silicon Graphics Inc. Sec. Litig.*, 183 F.3d at 974.

7. See *infra* text accompanying notes 87-89.

8. Cf. Oliver Wendell Holmes, Jr., *The Path of the Law*, 10 HARV. L. REV. 457, 469 (1897) (predicting the influence of statistics and economics on the direction of law). Our study also responds to Judge Posner's criticism that "so much legal scholarship and judicial analysis is unoriginal,

We recognize that the use of wealth maximization as a normative criterion for judicial decisionmaking is controversial.⁹ But wealth maximization for *shareholders* may be more acceptable as an appropriate norm in the context of securities laws because investors unquestionably purchase securities in an effort to increase their wealth. In particular, we believe shareholder wealth provides the appropriate baseline for interpreting the Reform Act because it best serves Congress' purposes in adopting the law, and it best reflects the interests of investors, who are the principal beneficiaries of the securities laws.¹⁰ At a minimum, courts should *consider* the effect that securities law decisions have on shareholder wealth when empirical evidence is available, as it is here, and Congress has not clearly expressed a contrary intent.

Two competing hypotheses may explain the effect of *Silicon Graphics*' rigorous pleading standard on shareholder wealth: (1) the high standard primarily discourages suits that, regardless of their merits, are not cost-justified in terms of deterring fraud, thereby enhancing shareholder wealth on average; or (2) the high standard chills suits that are both meritorious *and* cost-justified in addition to non-cost justified suits, thus undermining deterrence and diminishing shareholder wealth. To determine the effect of the *Silicon Graphics* decision on the wealth of shareholders, we look at the stock prices of a sample of high technology companies from the computer hardware, computer software, and pharmaceutical industries, and a sub-sample of those companies headquartered in the Ninth Circuit. A positive stock price reaction would support the first hypothesis, while a negative reaction would support the second.

The *Silicon Graphics* decision has implications beyond the law of any particular circuit. It offers a unique opportunity to evaluate the wealth effects of the varying interpretations of the Reform Act's pleading standard for three reasons. First, the *Silicon Graphics* "deliberate recklessness" standard for pleading scienter is generally regarded as the most difficult interpretation for plaintiffs to satisfy. The Securities and Exchange Commission and other critics of the "deliberate recklessness" standard have warned that the Ninth Circuit's interpretation will harm investors because it

unempirical, conventional, and unworldly, overwhelmingly verbal and argumentative (indeed, verbose and polemical), narrowly focused on doctrinal questions, mesmerized by the latest Supreme Court decisions, and preoccupied with minute and ephemeral distinctions—rather than bold, scientific, and descriptive." RICHARD A. POSNER, *THE PROBLEMS OF JURISPRUDENCE* 468 (1990).

9. See POSNER, *supra* note 8, at 374-87 (discussing the use of wealth maximization in legal decisionmaking). See *id.* at 374 n.23 (collecting articles criticizing wealth maximization as a normative criterion).

10. See *infra* text accompanying notes 114-17.

will discourage the filing of meritorious suits.¹¹ Since the plaintiff cannot use discovery to determine what the defendants knew when they were making the allegedly fraudulent statements, the case will be dismissed unless the defendant can find evidence in public sources of the defendants' fraudulent intent.¹² If cases of genuine fraud were dismissed or never filed, deterrence would be undermined.

Second, the decision was unexpected. Given that the Ninth Circuit previously had the least stringent requirements for pleading fraud, its decision to adopt the most stringent interpretation under the Reform Act caught many securities lawyers by surprise.¹³ Accordingly, the decision was unlikely to have been anticipated by stock market participants and reflected in stock prices prior to its announcement.¹⁴ Finally, the Ninth Circuit encompasses Silicon Valley, so the *Silicon Graphics* decision governs a substantial number of companies commonly targeted by attorneys bringing securities fraud class actions.¹⁵ Thus, the decision is likely to be of economic significance.

This Article proceeds as follows. Part II discusses the economics of securities fraud, the role of class actions in deterring that fraud, and why

11. See, e.g., *Oversight Hearing on Securities Litigation Abuses Concerning S. 1260, The Securities Litigation Uniform Standards Act of 1997, Before the Subcomm. on Sec. of the Senate Comm. on Banking, Hous., and Urban Affairs*, 105th Cong. 13 (1997) ("A uniform federal standard that did not include recklessness as a basis for liability would jeopardize the integrity of the securities markets, and would deal a crippling blow to defrauded investors with meritorious claims.") (statement of the SEC).

12. See Elliot J. Weiss & Janet E. Moser, *Enter Yossarian: How to Resolve the Procedural Catch-22 that the Private Securities Litigation Reform Act Creates*, 76 WASH. U. L.Q. 457 (1998). See also Hillary A. Sale, *Heightened Pleading and Discovery Stays: An Analysis of the Effect of the PSLRA's Internal-Information Standard on '33 and '34 Act Claims*, 76 WASH. U. L.Q. 537 (1998). Plaintiffs will not have access to discovery because of the Reform Act's discovery stay, which bars discovery while a motion to dismiss is pending. See 15 U.S.C.A. § 78u-4(b)(3)(B) (West 1999).

13. See, e.g., Patrick J. Coughlin, *Ninth Circuit Panel's Opinion in In re Silicon Graphics, Inc. Conflicts With Other Circuits*, 1136 P.L.I./Corp. 81 (Sept.-Oct. 1999) (plaintiffs' lawyer bemoaning court's "surprising holding").

14. See Elliot J. Weiss & Lawrence J. White, *Of Econometrics and Indeterminacy: A Study of Investors' Reactions to "Changes" in Corporate Law*, 75 CAL. L. REV. 551, 569 (1987) (market is less likely to have anticipated judicial decision "where a decision appeared to depart from or reverse well-established authority"). See also Roberta Romano, *The Political Economy of the Takeover Statutes*, 73 VA. L. REV. 111, 182 (1987) (discussing importance of identifying correct announcement date for a particular legal change). The prior decisions of the Second and Third Circuits, which adopted the existing Second Circuit tests, were likely anticipated by stock market participants and were therefore unlikely to have produced a stock price reaction.

15. Section 27 of the Exchange Act allows plaintiffs to bring suit in any district "wherein any act or transaction constituting the violation occurred" or "in the district wherein the defendant is found or is an inhabitant or transacts business." 15 U.S.C.A. § 78aa (West 1999). While this may allow plaintiffs to sue the issuer in a number of districts, plaintiffs are likely to bring suit in the district in which the company is headquartered in order to name the individual defendants, such as the officers and directors.

the effectiveness of that deterrent should be reflected in the price of securities. Part III provides background on the legislative history of the Reform Act's "strong inference" pleading standard and explains how that legislative history has created a dispute over the proper interpretation of that standard.

Part IV describes the sample data and presents our findings. We find that the interpretation of the Reform Act's pleading standard adopted in *Silicon Graphics* produced positive abnormal stock returns for a sample of high technology companies, particularly those headquartered in the Ninth Circuit. We also find that this stock price reaction is more positive for firms with a higher probability of *being sued* in a securities fraud class action, but that this positive effect diminishes as the probability of being sued for *committing* fraud increases. We conclude in Part V with some observations on the use of event studies in statutory interpretation and, specifically, on the use of shareholder wealth maximization as a normative guide to the interpretation of the Reform Act.

II. SECURITIES FRAUD, CLASS ACTIONS, AND SHAREHOLDER WEALTH

An analysis of the effects of the Reform Act's pleading standard on shareholder wealth requires a balancing of the benefits from deterring securities fraud through class actions against the costs of such suits. Securities fraud class actions are a beneficial enforcement device only if the deterrence they produce is greater than the deadweight losses they impose. In this Part, we analyze the costs of securities fraud, as well as the benefits and costs of using class actions to deter that fraud.

The leading securities law treatise states, "[t]here is no science yet known for quantifying the dollar value of fraud avoided; so in a sense, policy judgments in this area are based on often widely varying guesses as to whether increased fraud avoidance can be justified."¹⁶ We disagree with the premise that the "dollar value of fraud avoided" cannot be quantified and we believe policymakers can do better than "guess" when making policy in this area. The presence of fraud has the potential to seriously depress stock prices by impairing managerial accountability, distorting capital allocation, and reducing liquidity. Insofar as securities fraud class actions provide an efficient enforcement device, stock prices generally should reflect the effectiveness of those suits in deterring fraud.

16. LOUIS LOSS & JOEL SELIGMAN, SECURITIES REGULATION 701 (3d ed. Supp. 1999).

A. COSTS FROM SECURITIES FRAUD

The typical securities fraud class action involves an alleged misrepresentation regarding the company's operations, financial performance, or future prospects that inflates the price of the company's stock in secondary trading markets.¹⁷ Left unchecked, misrepresentations by company managers potentially have a number of negative effects on the company's stock price. First, misrepresentations may impair the ability of outside shareholders to monitor the firm's performance and, more specifically, the performance of the firm's managers. Insofar as fraud on the market makes it more difficult to scrutinize managerial performance, it also may significantly impact the market for corporate control.¹⁸ Deterring misrepresentations therefore may enhance monitoring of managers, which may increase corporate profitability by reducing agency costs. Enhanced monitoring through more accurate disclosure should be reflected in higher share prices.

Fraud may also affect investors' resource allocation decisions. Fraud harms capital allocation by enabling firms to raise money for investment projects that are not cost-justified. Firms that issue securities tend to have more forthcoming disclosure policies.¹⁹ Insofar as those disclosures are fraudulent, investors will pay an inflated price for those securities. Managers who fraudulently inflate their stock price may be able to invest in projects that are not cost-justified, instead of paying cash flows to shareholders in the form of dividends.²⁰ Alternatively, managers may use fraud to keep the firm in business when its assets should be reallocated through the bankruptcy process. Capital markets infected by fraud will raise firms' cost of capital, which, again, should be reflected in lower stock prices.

Most cases alleging fraud on secondary trading markets, however, are not based on the fraud's effect on capital allocation: Firms are selling

17. A smaller number of securities class actions involve a misrepresentation made in connection with an offering of securities by the company. Section 11 of the Securities Act makes issuers strictly liable for misstatements in a registration statement for a public offering. See 15 U.S.C.A. § 77k (West 1999).

18. See Merritt B. Fox, *Rethinking Disclosure Liability in the Modern Era*, 75 WASH. U. L.Q. 903, 909 (1997) (discussing the role of accurate stock prices in facilitating market for corporate control).

19. See Mark Lang & Russell Lundholm, *Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures*, 31 J. ACCT. RES. 246, 266 (1993) (finding statistically significant increase in analysts' disclosure ratings for firms during periods of securities issuance).

20. See Merritt B. Fox, *Securities Disclosure in a Globalizing Market: Who Should Regulate Whom*, 95 MICH. L. REV. 2498, 2545-50 (1997).

securities in only a fraction of cases. Fraud on the market cases differ from typical fraud cases in that the wealth transfers overwhelmingly occur between equally innocent investors. For every shareholder who *bought* at a fraudulently-inflated price, another shareholder has *sold*: The buyer's individual loss is offset by the seller's gain. Assuming all traders are ignorant of the fraud, over time they will come out winners as often as losers from fraudulently-distorted prices.²¹ In the classic case of fraud, by contrast, the people committing the fraud, not an innocent bystander, directly benefit from the fraud by transferring wealth from the victim to themselves. While the victim suffers an individual cost, the social cost of the transfer is zero because the trader committing the fraud receives an offsetting benefit. The social cost of fraud is not in the wealth transfer it effects, but rather in the responses by individuals to that potential wealth transfer. The wealth transfer induces the fraudulent trader to spend real resources in executing the fraud, and potential victims to spend real resources to avoid being victimized.²² Requiring traders who commit fraud to compensate the victim discourages both the trader from investing in fraud and the victim from incurring socially wasteful precaution costs against fraud.²³

But in the typical fraud on the market case, the corporation has not been trading in its own securities. Consequently, the corporation has not transferred wealth to itself and, therefore, has no incentive to spend real resources in executing the fraud. In theory, shareholders should have no expected loss from fraud on the market if the fraud is perfectly concealed until disclosure, so they would have no incentive to take precautions against the fraud. Thus, fraud on the market should not create the usual distorting effects of fraud.

But fraud is difficult to conceal completely. Fraud on the market, left unchecked, will induce some investors to try to beat the market by investigating the statements made by the company. Informed traders, who are already expending substantial resources to evaluate a company's stock

21. See Donald C. Langevoort, *Capping Damages for Open-Market Securities Fraud*, 38 ARIZ. L. REV. 639, 646 (1996). "At least active traders with large diversified portfolios have roughly the same chance of being winners as losers from securities fraud, and over time these gains and losses will tend to net out toward zero even in the absence of litigation." *Id.*

22. See Paul G. Maboney, *Precaution Costs and the Law of Fraud in Impersonal Markets*, 78 VA. L. REV. 623, 630 (1992) "If fraud is not deterred, market participants will take expensive precautions to uncover fraud so as to avoid entering into bargains they would not have concluded in an honest market." *Id.*

23. See FRANK H. EASTERBROOK & DANIEL A. FISCHEL, *THE ECONOMIC STRUCTURE OF CORPORATE LAW* 321 (1991).

price, are likely to reallocate some of their efforts from investigation to verification in the presence of fraud on the market. Company insiders will know of the fraud because of their role in its commission.²⁴ Fraud on the market, therefore, may create information asymmetries between traders that would not otherwise exist. These information asymmetries mean potential profits for informed traders and corresponding losses for the uninformed.²⁵

To avoid these trading losses, uninformed traders would prefer to trade only with other uninformed traders. Because securities markets are largely anonymous, however, outsiders have no way of knowing when they are trading with a counter-party possessing superior information. They do know, however, that they will systematically lose when trading with the better informed.²⁶ Market makers who supply liquidity to the markets on an uninformed basis will increase their spreads to reflect the possibility of dealing with traders who have superior information.²⁷ In addition, uninformed shareholders will discount the amount they are willing to pay for shares by their expected losses from trading with the informed.²⁸ They may also attempt to avoid these trading losses by trading less frequently. If uninformed investors trade less frequently, a greater proportion of trading volume will be made up of informed traders, creating an adverse selection problem as more uninformed traders exit the market to avoid trading with the better informed.²⁹ Less trading means less liquidity, and less liquid securities markets create higher execution costs for trades.³⁰ Thus, one of the principal social costs of fraud on the market is the increased cost of

24. See Scott L. Summers & John T. Sweeney, *Fraudulently Misstated Financial Statements and Insider Trading: An Empirical Analysis*, 73 ACCT. REV. 131 (1998) (finding that in the presence of fraud, insiders reduce their holdings of company stock through high levels of selling activity).

25. See generally Patricia M. Dechow, Richard G. Sloan & Amy P. Sweeney, *Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC*, 13 CONTEMP. ACCT. RES. 1 (1996) (reporting that short selling begins to increase two months before the announcement of earnings manipulation).

26. See Michael Manove, *The Harm from Insider Trading and Informed Speculation*, 104 Q.J. ECON. 823, 826 (1989) ("Insider traders buy at the right time and sell at the right time. . . . [I]t follows that on the average, outsider traders are being induced to do the opposite.").

27. See MERTON H. MILLER, *FINANCIAL INNOVATIONS AND MARKET VOLATILITY* 157 (1991) (discussing wider spreads and reduced liquidity caused by informed trading).

28. See Frank H. Easterbrook, *Insider Trading, Secret Agents, Evidentiary Privileges, and the Production of Information*, 1981 SUP. CT. REV. 309, 325 (arguing that shareholders will pay less for stock when insider trading is expected).

29. See Lawrence R. Glosten & Paul R. Milgrom, *Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders*, 14 J. FIN. ECON. 71, 74 (1985) (describing adverse selection problem created by the presence of informed traders).

30. See Dechow et al., *supra* note 25, at 29 (reporting that bid/ask spreads increase by .7% of the company's stock price after announcement that company has engaged in earnings manipulation).

trading securities.³¹ This higher liquidity cost will also be reflected in lower stock prices.³²

In sum, investors should value devices that reduce the incidence of fraud. Evidence for this claim can be found in the practice of providing financial statements audited by reputable accounting firms and governance devices like audit committees of outside directors to provide independent oversight of company disclosures. Shareholders should also value external monitoring devices that deter fraud, including SEC enforcement and criminal prosecution of fraudsters.³³ Class actions also have the potential to deter fraud. The effectiveness of all of these devices can be measured by their impact on shareholder wealth. We discuss the factors that may undermine the cost effectiveness of class actions in the next section.

B. BENEFITS AND COSTS OF SECURITIES FRAUD CLASS ACTIONS

Class actions are a central component of the federal securities laws' anti-fraud regime. The SEC considers private class actions a "necessary supplement" to its own efforts in policing fraud.³⁴ In fraud on the market class actions, plaintiffs' attorneys sue the corporation and its officers under Rule 10b-5 of the Securities Exchange Act.³⁵ The plaintiffs are classes of investors who have paid too much for their shares or (less frequently) sold their shares for too little because of price distortion caused by the misstatements.

In the typical case, the corporation being sued neither bought nor sold its securities and, accordingly, did not gain from the fraud. Nonetheless, fraud on the market suits allow investors to recover their losses from the corporation based on its managers' misstatements. Given the trading volume in secondary markets, the potential recoverable damages in such suits can be a substantial percentage of the corporation's total capitalization, easily reaching hundreds of millions of dollars. Thus, class actions are a potential punitive sanction that should provide a substantial deterrent to fraud.

31. See Charles M. C. Lee, *Market Integration and Price Execution for NYSE-Listed Securities*, 48 J. FIN. 1009, 1014 (1993). The loss of uninformed traders may lead to greater quoted spreads and higher liquidity costs. See *id.*

32. See Yakov Amihud & Haim Mendelson, *A New Approach to the Regulation of Trading Across Securities Markets*, 71 N.Y.U. L. REV. 1411, 1429 (1996).

33. Other devices may be available, including regulation by the securities exchanges. See A.C. Pritchard, *Markets as Monitors: A Proposal to Replace Class Actions with Exchanges as Securities Fraud Enforcers*, 85 VA. L. REV. 925 (1999).

34. *Lamp v. Gilbertson*, 501 U.S. 350, 376 (1991) (Kennedy, J., dissenting).

35. 17 C.F.R. § 240.10b-5 (2000).

The effectiveness of that deterrence will be determined by how closely class action suits correlate with the actual incidence of fraud. Congress passed the Reform Act because it believed that the targeting of class actions was not very precise. Plaintiffs' lawyers were filing suits "citing a laundry list of cookie-cutter complaints" against companies "within hours or days" of a substantial drop in the company's stock price.³⁶ Moreover, plaintiffs' lawyers had incentives to "file frivolous lawsuits in order to conduct discovery in the hopes of finding a sustainable claim not alleged in the complaint."³⁷

Sorting fraud from mere business reversals is difficult. The external observer may not know whether a drop in a company's stock price is due to a prior misstatement about its prospects—fraud—or a result of risky business decisions that did not pan out—bad luck. Unable to distinguish the two, plaintiffs' lawyers are forced to rely on the limited publicly available objective indicia when deciding to sue.³⁸ Thus, a substantial drop in stock price following previous optimistic statements may well lead to a lawsuit.

The scienter standard establishes the defendants' requisite knowledge of falsity at the time of the misstatement and is the primary means by which courts sort fraud from non-fraud. But the standard is notoriously amorphous. It is somewhat more stringent than negligence, but even in theory it is difficult to say how much more, and it is nearly impossible in practice.³⁹ Knowingly false statements and unfortunate business decisions both create a risk of liability and, thus, provide a basis for filing suit. An uncertain standard for liability therefore makes filing a diverse portfolio of cases a reasonable strategy for plaintiffs' lawyers.

Filing numerous cases is profitable for plaintiffs' attorneys because of the incentives that defendants face. If plaintiffs can withstand a motion to

36. H.R. REP. NO. 104-50, at 16 (1995). Compare Janet Cooper Alexander, *Do the Merits Matter? A Study of Settlements in Securities Class Actions*, 43 STAN. L. REV. 497 (1991) (arguing that settlement values are unrelated to strength of case), with Joel Seligman, *The Merits Do Matter*, 108 HARV. L. REV. 438 (1994) (arguing settlement values are related to strength).

37. S. REP. NO. 104-98, at 14 (1995).

38. See Jordan Eth & Michael Dicke, *Insider Stock Sales in Rule 10b-5 Corporate Disclosure Cases: Separating the Innocent from the Suspicious*, 1 STAN. J.L. BUS. & FIN. 97, 111 (1994):

Many plaintiffs' attorneys look for a convergence of three factors in determining whether there is a good securities fraud case: (1) optimistic statements by management; (2) a subsequent disclosure of "bad news" about the prospects of the company that causes a sharp stock price drop; and (3) stock sales by insider during the time management made the allegedly misleading optimistic statements.

Id.

39. See Mahoney, *supra* note 22, at 650 (arguing that the line between negligence and intent in securities fraud has become blurred).

dismiss, defendants generally will find settlement cheaper than litigation. Any case plausible on the pleadings will have a positive settlement value if only to avoid the costs of discovery and attorneys' fees, which can be substantial in these cases.⁴⁰ Securities fraud class actions are expensive to litigate because the most common fighting issue will be scienter. The most helpful source for uncovering this fact will be the documents in the company's possession.⁴¹ Producing all documents relevant to the knowledge of senior executives over many months or even years can be a massive undertaking.⁴² Having produced the documents, the company can then anticipate a seemingly endless series of depositions, as plaintiffs' counsel seeks to determine whether the executives' recollections square with the documents.⁴³ The cost in lost productivity may dwarf the expense of attorneys' fees and other direct litigation costs.⁴⁴

Beyond the cost in executives' time, the mere existence of the class action may disrupt relationships with suppliers and customers, who may be somewhat leery of dealing with a party accused of fraud.⁴⁵ The Supreme Court has recognized that securities fraud suits pose "the threat of extensive discovery and disruption of normal business activities."⁴⁶ Ignoring the costs of litigation, the enormous potential damages also make settlement an attractive option for the company, even when it seems that the prospects of prevailing are good.⁴⁷ Thus, defendants' inclination to settle gives plaintiffs' lawyers an incentive to file even weak cases.

40. See Dale E. Barnes, Jr. & Constance E. Bagley, *Great Expectations: Risk Management Through Risk Disclosure*, 1 STAN. J.L. BUS. & FIN. 155, 156 (1994) (describing corporation's costs of responding to securities class action).

41. See Sherrie R. Savett, *The Merits Matter Most and Observations on a Changing Landscape Under the Private Securities Litigation Reform Act of 1995*, 39 ARIZ. L. REV. 525, 526 (1997).

42. See John F. Olson, David C. Mahaffey & Brian E. Casey, *Pleading Reform, Plaintiff Qualification and Discovery Stays Under the Reform Act*, 51 BUS. LAW. 1101, 1112-13 (1996) (describing discovery request to which defendant corporation produced 1,500 boxes of documents).

43. See Elliot J. Weiss & John S. Beckerman, *Let the Money Do the Monitoring: How Institutional Investors Can Reduce Agency Costs in Securities Class Actions*, 104 YALE L.J. 2053, 2086-87 (1995).

44. See Richard M. Phillips & Gilbert C. Miller, *The Private Securities Litigation Reform Act of 1995: Rebalancing Litigation Risks and Rewards for Class Action Plaintiffs, Defendants and Lawyers*, 51 BUS. LAW. 1009, 1027-28 (1996) ("Officers, directors, and employees of companies are sidetracked from focusing on their core activities. Corporate officials must spend untold hours in a variety of litigation exercises that otherwise could be devoted to productive uses.").

45. See *id.* at 1028 (describing collateral costs to corporation's business from being a securities fraud defendant).

46. *Blue Chip Stamps v. Manor Drug Stores*, 421 U.S. 723, 742-43 (1975).

47. See Janet Cooper Alexander, *Rethinking Damages in Securities Class Actions*, 48 STAN. L. REV. 1487, 1511 (1996) ("The class-based compensatory damages regime in theory imposes remedies that are so catastrophically large that defendants are unwilling to go to trial even if they believe the chance of being found liable is small.").

The settlement dynamic in securities class actions reduces the deterrent value of such suits. The cost of litigating securities class actions and the potential for enormous judgments mean that even weak cases may produce a settlement if they are not dismissed before trial.⁴⁸ Congress believed the difficulty in assessing the merits of a lawsuit by looking at the complaint allowed a substantial number of weak cases to make it through to settlement.⁴⁹ Thus, settlements may do a poor job of sorting strong claims of fraud from non-fraudulent statements that were proved wrong only in hindsight.⁵⁰ If both weak and strong cases lead to settlements, the deterrent effect of class actions will be diluted because both innocent and wrongful conduct will lead to sanctions.⁵¹ Worse yet, firms have incentives to commit fraud to conceal poor performance if poor results can lead to a securities fraud class action. If that happens, imprecise deterrence is worse than no deterrence at all.

III. THE REFORM ACT'S PLEADING STANDARD

Congress attempted to improve the screening process for securities class actions when it enacted the Private Securities Litigation Reform Act. The Reform Act adopted a series of procedural obstacles to securities fraud class actions designed to weed out nonmeritorious actions at an early stage. Early dismissal greatly reduces the expense to corporations forced to defend such suits, thereby limiting the settlement value of weak cases.

The pleading standard established by the Reform Act gives the judge a more significant role in deciding the merits of the lawsuit than is typical

48. On the subject of incentives to bring nonmeritorious cases, see Lucian Arye Bebchuk, *Suing Solely to Extract a Settlement Offer*, 17 J. LEGAL STUD. 437, 448 (1988); Avery Katz, *The Effect of Frivolous Lawsuits on the Settlement of Litigation*, 10 INT'L REV. L. & ECON. 3, 14 (1990); D. Rosenberg & S. Shavell, *A Model in Which Suits Are Brought for Their Nuisance Value*, 5 INT'L REV. L. & ECON. 3, 9-10 (1985).

49. See H.R. REP. NO. 104-50, at 17 (1995).

50. The percentage of securities fraud suits settling for nuisance value testifies to the weakness of judicial procedures as a screening device. See Joseph A. Grundfest, *Why Disimply?*, 108 HARV. L. REV. 727, 742-43 (1995) (reporting results of studies finding that between 22% to 60% of securities suits are settled for nuisance value); Willard T. Carleton, Michael S. Weisbach & Elliott J. Weiss, *Securities Class Action Lawsuits: A Descriptive Study*, 38 ARIZ. L. REV. 491, 511 (1996) (finding "smaller settlements/damages ratios [defined as roughly equivalent to the defendants' costs in defending the suit] for cases in which settlements were less than \$2 million, which is consistent with the presence of nuisance suits settled on the basis of plaintiffs' attorney's expenses rather than on the economic damages suffered by plaintiffs").

51. See I.P.L. Png, *Optimal Subsidies and Damages in the Presence of Judicial Error*, 6 INT'L REV. L. & ECON. 101, 101 (1986) ("[T]o the extent that an individual who has not violated the law will be made to pay damages, the cost of violating the law, relative to not doing so, will be reduced. The result will be more violations of the law.").

under the Federal Rules of Civil Procedure. Under the Reform Act's pleading standard, plaintiffs must specify in their complaint each statement alleged to have been misleading and the reasons why the statement is misleading.⁵² In addition, if an "allegation is made on information and belief, the plaintiff shall state with particularity all facts on which the belief is formed."⁵³ Finally, the pleading standard requires plaintiffs to state with particularity facts giving rise to a "strong inference" that the defendant acted with "the required state of mind."⁵⁴ By requiring plaintiffs to plead facts demonstrating scienter, the motion to dismiss becomes a substantive challenge to the merits of the lawsuit, a substantial departure from the "notice pleading" ordinarily required by the Federal Rules. The significance of this departure is enhanced by the fact that plaintiffs are left without the usual access to discovery to bolster their complaint.

A. HISTORY OF THE PLEADING STANDARD

Not surprisingly, the Reform Act's pleading standard was among the most contentious of the provisions debated by Congress. The pleading standard was intended to resolve a dispute that had arisen in the courts of appeals. While every federal appellate court that addressed the question has held that "recklessness" satisfies the scienter requirement for liability under Section 10(b) of the Exchange Act,⁵⁵ they had differed on the question of what was required to plead an adequate complaint under that section. Rule 9(b) of the Federal Rules of Civil Procedure requires that plaintiffs plead the circumstances giving rise to a claim of fraud "with particularity," but allows state of mind to be "averred generally."⁵⁶ The Second Circuit held that pleading scienter under Section 10(b) requires "plaintiffs to allege facts that give rise to a strong inference of fraudulent intent."⁵⁷ The Ninth Circuit disagreed, finding the Second Circuit's interpretation inconsistent with the plain language of Rule 9(b). It instead

52. See 15 U.S.C.A. § 78u-4(b)(1) (West 1999).

53. *Id.*

54. 15 U.S.C.A. § 78u-4(b)(2) (West 1994).

55. See, e.g., *Hollinger v. Titan Capital Corp.*, 914 F.2d 1564, 1569-70 (9th Cir. 1990) (en banc).

The most commonly cited definition of recklessness is the one from *Sundstrand Corp. v. Sun Chemical Corp.*:

[A] highly unreasonable omission, involving not merely simple, or even inexcusable negligence, but an extreme departure from the standards of ordinary care, and which presents a danger of misleading buyers or sellers that is either known to the defendant or is so obvious that the actor must have been aware of it.

553 F.2d 1033, 1045 (7th Cir. 1997) (quoting *Franke v. Midwestern Okla. Dev. Auth.*, 428 F. Supp. 719, 725 (W.D. Okla. 1976)).

56. FED. R. CIV. P. 9(b).

57. *Shields v. Citytrust Bancorp.*, 25 F.3d 1124, 1128 (2d Cir. 1994).

held that plaintiffs could adequately plead a complaint "simply by saying that scienter existed."⁵⁸

The legislative history of the Reform Act is contradictory. At times it suggests Congress was trying to codify the Second Circuit standard, and at other times it suggests Congress was setting an even more rigorous standard.⁵⁹ Most courts, including the Second and Third Circuits, have construed the Reform Act's pleading provision as adopting the Second Circuit's tests for satisfying the strong inference standard.⁶⁰ Prior to passage of the Reform Act, the Second Circuit had held that its strong inference standard could be met by pleading facts that would satisfy either of the two tests. In the absence of direct evidence of the defendant's fraudulent intent, the plaintiff must allege either: (1) facts that constitute strong circumstantial evidence of conscious or reckless misbehavior, or (2) facts showing motive and opportunity to commit the fraud.⁶¹ Other courts, including the First, Sixth and Eleventh Circuits, have rejected portions of the Second Circuit's approach. While not rejecting the circumstantial evidence of the recklessness test, these courts have held that motive and opportunity do not necessarily suffice to create the strong inference of scienter required by the Reform Act.⁶² These courts have held that motive and opportunity should be used only as factors to be considered in evaluating circumstantial evidence of conscious behavior or recklessness.⁶³ Finally, the Ninth Circuit, in *Silicon Graphics*, rejected both the motive and opportunity test and recklessness as bases for pleading scienter under the Reform Act. Instead the court required plaintiffs to plead that the defendants knew that the statements were false, or that the defendants were "consciously" or "deliberately" reckless in disregarding the truth or falsity of the statements.⁶⁴

Congress clearly modeled the Reform Act's pleading standard on the demanding "strong inference" requirement of the Second Circuit. The Reform Act's "strong inference" standard for pleading scienter originated

58. *In re Glenfed, Inc. Sec. Litig.*, 42 F.3d 1541, 1547 (9th Cir. 1994) (en banc).

59. *See In re Advanta Corp. Sec. Litig.*, 180 F.3d 525, 531 (3d Cir. 1999) ("The Reform Act's legislative history on this point is ambiguous and even contradictory.")

60. *See Press v. Chem. Inv. Serv. Corp.*, 166 F.3d 529, 537-38 (2d Cir. 1999) (dicta); *In re Advanta Corp. Sec. Litig.*, 180 F.3d 525, 534-35 (3d Cir. 1999).

61. *See, e.g., Shields*, 25 F.3d at 1128.

62. *See In re Comshare, Inc. Sec. Litig.*, 183 F.3d 542, 551 (6th Cir. 1999); *Bryant v. Avado Brands, Inc.*, 187 F.3d 1271, 1285-87 (11th Cir. 1999); *Greebel v. FTP Software, Inc.*, 194 F.3d 185, 196 (1st Cir. 1999).

63. *See, e.g., Comshare*, 183 F.3d at 551.

64. *In re Silicon Graphics Inc. Sec. Litig.*, 183 F.3d 970, 974 (9th Cir. 1999).

in Senate Bill 240, the Senate precursor to the Act. As reported by the Senate Banking Committee, Senate Bill 240 mandated that the complaint “specifically allege facts giving rise to a strong inference that the defendant acted with the required state of mind.”⁶⁵ When the Senate bill reached the floor, Senator Specter offered an amendment purporting to codify the tests used by the Second Circuit in applying the strong inference standard, which the Senate adopted.⁶⁶ But Specter’s amendment codifying these tests was deleted by the Conference Committee.⁶⁷ The Statement of Managers produced by the Conference Committee that reconciled the House and Senate versions of the Reform Act explained this decision:

The Conference Committee language is based in part on the pleading standard of the Second Circuit. The standard also is specifically written to conform the language to Rule 9(b)’s notion of pleading with “particularity.”

Regarded as the most stringent pleading standard, the Second Circuit requirement is that the plaintiff state facts with particularity, and that these facts, in turn, must give rise to a “strong inference” of the defendant’s fraudulent intent. Because the Conference Committee intends to strengthen existing pleading requirements, it does not intend to codify the Second Circuit’s case law interpreting this pleading standard.⁶⁸

Thus, the Conference Committee made it clear that it was adopting the Second Circuit standard, at least “in part,” but it did not want to incorporate the Second Circuit’s cases applying that standard. A footnote appended to the above quoted portion of the Statement of Managers elaborated: “For this reason, the Conference Report chose not to include in the pleading

65. S. 240, 104th Cong. § 104 (1995). The Senate Banking Committee’s report makes clear that Congress modeled the Act’s pleading standard on the Second Circuit’s:

The Committee does not adopt a new and untested pleading standard that would generate additional litigation. Instead, the Committee chose a uniform standard modeled upon the pleading standard of the Second Circuit. Regarded as the most stringent pleading standard, the Second Circuit requires that the plaintiff plead facts that give rise to a “strong inference” of defendant’s fraudulent intent. The Committee does not intend to codify the Second Circuit’s case law interpreting this pleading standard, although courts may find this body of law instructive.

S. REP. NO. 104-98, at 15 (1995) (footnotes omitted).

66. See I41 CONG. REC. S9200 (1995).

67. The Conference Committee also changed the language of the standard from “specifically allege” to “plead with particularity” based on the recommendation of the Judicial Conference that the provision be amended to conform to Rule 9(b)’s particularity language. 141 CONG. REC. S19066-67 (1995). This does not appear to have intended any substantive change.

68. 141 CONG. REC. H13702 (1995).

standard certain language relating to motive, opportunity, or recklessness.”⁶⁹

Congress' actions with regard to the pleading standard create two conflicting interpretive presumptions. First, absent contrary evidence, courts ordinarily presume Congress intended to adopt the settled judicial constructions of a rule when it incorporates that standard into a statute.⁷⁰ Because the settled judicial construction of the Second Circuit's pleading standard includes both the circumstantial evidence of scienter test and the motive and opportunity test, it could be assumed that Congress intended that courts would rely on those tests in interpreting the pleading standard of the Reform Act. The second presumption arises from the Conference Committee's deletion of the Specter amendment. When Congress expressly declines to adopt specific statutory language, “its action strongly militates against a judgment that Congress intended a result that it expressly declined to enact.”⁷¹ Thus, this interpretive presumption suggests that the courts should not rely on the Second Circuit's tests.

President Clinton cited the Statement of Managers as one of his reasons for vetoing the Reform Act. In his veto message, he stated:

First, I believe that the pleading requirements of the Conference Report with regard to a defendant's state of mind impose an unacceptable procedural hurdle to meritorious claims being heard in Federal courts. I am prepared to support the high pleading standard of the U.S. Court of Appeals for the Second Circuit—the highest pleading standard of any Federal circuit court. But the conferees make crystal clear in the Statement of Managers their intent to raise the standard even beyond that level. I am not prepared to accept that.

The conferees deleted an amendment offered by Senator Specter and adopted by the Senate that specifically incorporated Second Circuit case law with respect to pleading a claim of fraud. Then they specifically indicated that they were not adopting Second Circuit case law but instead intended to “strengthen” the existing pleading requirements of the Second Circuit. All this shows that the conferees meant to erect a higher barrier to bringing suit than any now existing—one so high that even the

69. 141 CONG. REC. H13705 n.23 (1995).

70. See *Cottage Sav. Ass'n v. Commissioner*, 499 U.S. 554, 562 (1991) (“Because these decisions were part of the ‘contemporary legal context’ in which Congress enacted [the statute] . . . we may presume that Congress intended to codify these principles. . . .”); *Lorillard v. Pons*, 434 U.S. 575, 581 (1978) (“[W]here, as here, Congress adopts a new law incorporating sections of a prior law, Congress normally can be presumed to have had knowledge of the interpretation given to the incorporated law, at least insofar as it affects the new statute.”).

71. *Gulf Oil Corp. v. Copp Paving Co.*, 419 U.S. 186, 200 (1974).

most aggrieved investors with the most painful losses may get tossed out of court before they have a chance to prove their case.⁷²

Given that Congress subsequently overrode the President's veto, the most obvious interpretation of its action would be that it favored the President's interpretation of the pleading standard. But in the floor debate following the President's veto, Senator Dodd and the other managers of the Reform Act distanced themselves from that interpretation. Senator Dodd argued the President had "reversed course on the pleading standards" which the President had previously endorsed.⁷³ The Senator explained that the Conference Committee had omitted the Specter amendment because it "did not really follow the guidance of the second circuit."⁷⁴ The pleading provision, contrary to the President's belief, "met [the Second Circuit] standard. . . . We have left out the guidance. That does not mean you disregard it."⁷⁵ Senator Domenici reiterated that the Reform Act's pleading standard "is the Second Circuit's pleading standard" and was a "codification of the Second Circuit rule."⁷⁶ Evidently rejecting President Clinton's arguments, Congress voted to override his veto.⁷⁷ Given the remarks of the Reform Act's Managers urging an override of the veto, another interpretive presumption arises: The President's understanding of the Reform Act in his veto message should be ignored.⁷⁸

B. EFFECTS OF THE INTERPRETATION OF THE PLEADING STANDARD ON SHAREHOLDER WEALTH

The conflicting presumptions arising from the Reform Act's legislative history have led to interpretive confusion in the courts over how demanding the pleading standard should be.⁷⁹ Courts reviewing that

72. 141 CONG. REC. H15215 (1995).

73. 141 CONG. REC. S19067 (1995).

74. 141 CONG. REC. S19068 (1995).

75. *Id.*

76. 141 CONG. REC. S19150 (1995).

77. *See* 141 CONG. REC. H15224 (1995); 141 CONG. REC. S19180 (1995).

78. *See* NLRB v. Robbins Tire & Rubber Co., 437 U.S. 214, 235 (1978) (rejecting interpretation in Presidential veto message when supporters of the legislation disagreed with that interpretation of the bill during post-veto debate).

79. The use of legislative history to interpret ambiguous statutes has both its defenders and its detractors. Compare Stephen Breyer, *On the Uses of Legislative History in Interpreting Statutes*, 65 S. CAL. L. REV. 845 (1992), and Patricia M. Wald, *The Sizzling Sleeper: The Use of Legislative History in Construing Statutes in the 1988-89 Term of the United States Supreme Court*, 39 AM. U. L. REV. 277 (1990), with John F. Manning, *Textualism as a Nondelegation Doctrine*, 97 COLUM. L. REV. 673 (1997), and Adrian Vermeule, *Legislative History and the Limits of Judicial Competence: The Untold Story of Holy Trinity Church*, 50 STAN. L. REV. 1833 (1998). We take no position on this controversy; we simply note that judges are avid users of this interpretive resource.

legislative history can find support for each of the three interpretations that have been adopted. Quite arguably, each of the three interpretations can be considered "correct" based on traditional rules of statutory interpretation. We agree with the conclusion of the First Circuit:

The legislative history is inconclusive on whether the [Reform] Act was meant to either embody or to reject the Second Circuit's pleading standards. . . . At best, there appears to have been an agreement to disagree on the issue of Second Circuit standards (other than the strong inference standard), and perhaps, as is common, to leave such matters for courts to resolve.⁸⁰

It is likely that the Supreme Court eventually will be obliged to grant certiorari to resolve the conflict. Congress did, after all, express its intention that pleading standards be uniform, even if it was less than clear on what that standard should be.⁸¹

An ultimate decision by the Supreme Court will have significant policy consequences. If the Court adopts a strict interpretation of the pleading standard, fraud claims that are not plausible on the face of the complaint will be dismissed. If such an interpretation discouraged only meritless suits, it could reduce the enormous transaction costs imposed by those suits, thereby producing deterrence at a lower cost. On the other hand, if the bar for pleading an adequate complaint is set too high, it may screen out a large number of meritorious suits, as well as the frivolous, thus undermining deterrence. In the next Part, we attempt to shed some empirical light on how the Court should strike that balance.

IV. DATA AND FINDINGS

Event study methodology is a well-established means for measuring investors' perception of the effect of an economic event on shareholder wealth, and it is widely used in the context of the securities laws. Indeed, the event study methodology used here relies on the Efficient Capital Markets Hypothesis—which is also the fundamental premise of the fraud on the market class action. The Efficient Capital Markets Hypothesis postulates that stock prices rapidly incorporate publicly available information regarding the

80. *Greebel v. FTP Software, Inc.*, 194 F.3d 185, 195 (1st Cir. 1999).

81. The Reform Act's Statement of Managers explains Congress' concern that the pleading requirements of Rule 9(b) of the Federal Rules of Civil Procedure had "not prevented abuse of the securities laws by private litigants" and that the courts of appeals had "interpreted Rule 9(b)'s requirement in conflicting ways." 141 CONG. REC. H13702 (1995). The Statement of Managers also notes that Congressional hearings had "included testimony on the need to establish uniform and more stringent pleading requirements." *Id.* That goal of uniformity has not yet been achieved.

value of those shares.⁸² In *Basic, Inc. v. Levinson*,⁸³ the Supreme Court endorsed the use of stock price effects to establish that the market relied on misstatements.⁸⁴ Courts have also relied on the event study methodology employed here in other contexts concerning the federal securities laws, including the measurement of damages in open-market fraud cases⁸⁵ and to demonstrate the materiality of misstatements.⁸⁶

Those uses of event studies are distinguishable, however, from the use in this Article in that they help resolve evidentiary questions arising from the application of the law to the facts of a given case. But event studies have also been used to assess corporate law decisions by Delaware courts.⁸⁷ Related studies attempt to measure the value of incorporating in Delaware.⁸⁸ In addition, studies have assessed the shareholder wealth effects of state anti-takeover legislation.⁸⁹ We use the same methodology to test the effect of the Ninth Circuit's interpretation of the Reform Act in *Silicon Graphics*.

In an earlier study, two of us found that the passage of the Reform Act produced positive abnormal stock returns, on average, for shareholders of a sample of high technology companies.⁹⁰ The market reaction was most positive for firms with a high overall probability of being sued in a securities class action. For those firms that had the highest risk of fraudulent financial

82. See JAMES LORIE, PETER DODD & MARY KIMPTON, *THE STOCK MARKET: THEORIES AND EVIDENCE* 55-75 (2d ed. 1985) (describing empirical evidence supporting the Efficient Capital Markets Hypothesis).

83. 485 U.S. 224 (1988).

84. *Id.* at 246 ("Recent empirical studies have tended to confirm Congress' premise that the market price of shares traded on well-developed markets reflects all publicly available information, and, hence, any material misrepresentations.").

85. See Janet Cooper Alexander, *The Value of Bad News in Securities Class Actions*, 41 UCLA L. REV. 1421, 1428-62 (1994) (discussing courts' reliance on stock price events studies in measuring damages); Bradford Cornell & R. Gregory Morgan, *Using Finance Theory to Measure Damages in Fraud on the Market Cases*, 37 UCLA L. REV. 883 (1990).

86. See Mark L. Mitchell & Jeffrey M. Netter, *The Role of Financial Economics in Securities Fraud Cases: Applications at the Securities and Exchange Commission*, 49 BUS. LAW. 545 (1994).

87. See Sreenivas Kamma, Joseph Weintrop & Peggy Wier, *Investors' Perceptions of the Delaware Supreme Court Decision in Unocal v. Mesa*, 20 J. FIN. ECON. 419 (1988). See also Weiss & White, *supra* note 14.

88. See Jeffrey Netter & Annette Poulsen, *State Corporation Laws and Shareholders: The Recent Experience*, 18 J. FIN. MGMT. ASS'N 29 (1989); Peter Dodd & Richard Leftwich, *The Market for Corporate Charters: "Unhealthy Competition" versus Federal Regulation*, 53 J. BUS. 259 (1980). See also Robert Daines, *Does Delaware Law Improve Firm Value?* (1999) (unpublished manuscript, on file with authors) (using cross-sectional study to assess marginal value of Delaware corporate law).

89. See Jonathan M. Karpoff & Paul H. Malatesta, *The Wealth Effects of Second-Generation State Takeover Legislation*, 25 J. FIN. ECON. 291 (1989). See also Romano, *supra* note 14.

90. See Marilyn F. Johnson, Ron Kasznik & Karen K. Nelson, *Shareholder Wealth Effects of the Private Securities Litigation Reform Act of 1995*, 5 REV. ACCT. STUD. (forthcoming 2000) (manuscript on file with authors).

reporting practices, however, shareholder returns were significantly lower. Nonetheless, on balance the market appears to have expected that the benefits of discouraging weak lawsuits would be greater than the costs of reduced deterrence.

That study did not allow for examination of the wealth effects from particular provisions of the Reform Act. Consequently, it cannot be determined from that evidence whether investors considered the heightened pleading standard to be wealth-enhancing. It is possible that certain provisions of the Reform Act, such as the discovery stay and the safe harbor for forward-looking statements were wealth-enhancing, while the pleading standard was wealth-diminishing. The *Silicon Graphics* decision provides an opportunity to focus on the effects of the Reform Act's pleading standard.

A. THE SAMPLE AND METHODOLOGY

To test the effects of the *Silicon Graphics* decision on shareholder wealth, we select a sample of firms that historically have been vulnerable to class action securities litigation. These firms are therefore the ones most likely to be affected by the interpretation of the Reform Act's pleading standard. Compared to firms in other industries, high technology companies are involved in a disproportionately large number of securities lawsuits.⁹¹ We use companies from three high technology industries—pharmaceuticals, computer hardware, and computer software.⁹² Our initial sample consists of 311 public companies used in the event study discussed previously with stock return data available to conduct our tests. We exclude thirty-two of these firms with class actions pending at the time of the *Silicon Graphics* decision, as the stock price reaction for these firms was likely to be dominated by the reduced probability of liability in the pending suit. Additionally, we exclude two firms that made public announcements of important corporate events on the day of or the first trading day following the decision. Our final sample thus includes 277 firms, ninety-three with headquarters located in the Ninth Circuit and 184 with headquarters outside the Ninth Circuit.

91. See Joseph A. Grundfest & Michael A. Perino, *Securities Litigation Reform: The First Year's Experience* (Feb. 1997) (John M. Olin Program in Law and Economics, Stanford Law School Working Paper No. 140); Christopher L. Jones & Seth E. Weingram, *Why 10b-5 Litigation Risk Is Higher for Technology and Financial Services Firms* (July 1996) (John M. Olin Program in Law and Economics, Stanford Law School Working Paper No. 112).

92. We use Standard Industrial Classification (the "SIC") codes to identify firms in these industries—pharmaceuticals (SIC codes 2833-2836), computer hardware (SIC codes 3570-3577) and computer software (SIC codes 7371-7379).

The Ninth Circuit handed down its *Silicon Graphics* decision on the morning of July 2, 1999.⁹³ That same morning, the decision was posted on the court's web site, and the clerk's office notified by telephone the lawyers for the parties to the appeal. The lawyers notified their clients and interested journalists that day.⁹⁴ The decision also was announced at a securities litigation conference in Colorado that afternoon.⁹⁵ Later that evening, the Associated Press ran the story on its newswire at 6:53 P.M.⁹⁶ The AP story is the first news account of the decision that we have found. Stories reporting the decision ran in three major California papers—the *San Jose Mercury News*, the *San Francisco Chronicle*, and the *Los Angeles Times*—on July 3, 1999, a Saturday.⁹⁷ Because the following Monday—July 5—was a holiday, the story did not run in the *Wall Street Journal* until July 6.⁹⁸ Given court rules regarding confidentiality, we assume that the news of the decision was not available to traders before July 2. Additionally, we conclude from the widespread media coverage that virtually any securities analyst following companies in the three high technology industries we examine was likely to be aware of the decision on July 6. Accordingly, we examine stock return data from July 2 through July 6, which includes only two trading days, the second and the sixth.

The event study methodology requires a measure of abnormal returns. The abnormal return is the actual stock return over the event period minus the return expected if the event did not take place. The expected return is obtained by estimating the relation between a given security's return and the market return for a period prior to the event in question. This relation

93. A revised version of the decision was handed down by the court on August 4, 1999. Although the amended opinion softened some of the language used in the opinion, the requirement that plaintiffs plead "deliberate" recklessness to state a claim for securities fraud was not changed. See *Antifraud: Ninth Circuit Amends Ruling on Reform Act Pleading Standard*, 31 Sec. Reg. & L. Rep. (BNA) 1140 (Aug. 27, 1999). The private plaintiffs and the SEC renewed their request for review of the decision by the full court after the amended opinion was handed down. See *id.* We therefore did not collect stock price returns from August 4. The Ninth Circuit rejected the petition for rehearing and suggestion for rehearing en banc on October 27, 1999. The plaintiffs did not petition the Supreme Court for certiorari.

94. Telephone Interview with Jerome Bim, counsel for Silicon Graphics, Inc. (Aug. 1999).

95. Telephone Interview with David Levine, attendee at National Economic Research Associates Finance, Law & Economics Securities Litigation Seminar, June 30-July 2, 1999, Keystone, Colo. (Aug. 1999).

96. See Bob Egelko, *Court Tightens Standard for Securities Fraud Suits*, ASSOCIATED PRESS NEWSWIRES, July 2, 1999, at 18:53:00, available in Westlaw ALLNEWSPLUS library.

97. See Howard Mintz, *Federal Court Makes Securities Fraud Lawsuits More Difficult*, SAN JOSE MERCURY NEWS, July 3, 1999, available in 1999 WL 17354957; Reynolds Holding, *Court Puts Limits on Securities Fraud Suits*, S.F. CHRON., July 3, 1999, at A1; David Maharaj & Henry Weinstein, *Ruling Tightens Standard in Investors' Fraud Suits*, L.A. TIMES, July 3, 1999, at C1.

98. See Scott Thurm, *Appeals Court Sets High Standards For Shareholders in Stock-Fraud Suits*, WALL ST. J., July 6, 1999, at A23.

provides a benchmark for determining the expected return of a firm's stock during the event period, given the market return. We calculated the abnormal return for each firm in the sample for the two trading days indicated above, and added these daily abnormal returns to obtain cumulative abnormal returns (the "CARs") for the event period for each firm. The overall CAR is an average of the individual firm CARs. If investors viewed the *Silicon Graphics* decision as beneficial to their interests, we would expect to observe a positive average CAR. Conversely, if investors believed that the decision harmed their interests, we would expect a negative average CAR.

More volatile firms are apt to have a larger absolute return on the event date, even if the value of the firm is unaffected by the event being studied. Therefore, the significance of the CARs is determined by constructing a Z-statistic that weights each individual firm's abnormal returns by the inverse of the standard deviation of the returns, thereby giving greater weight to the CARs of the less volatile firms.⁹⁹

B. RESULTS

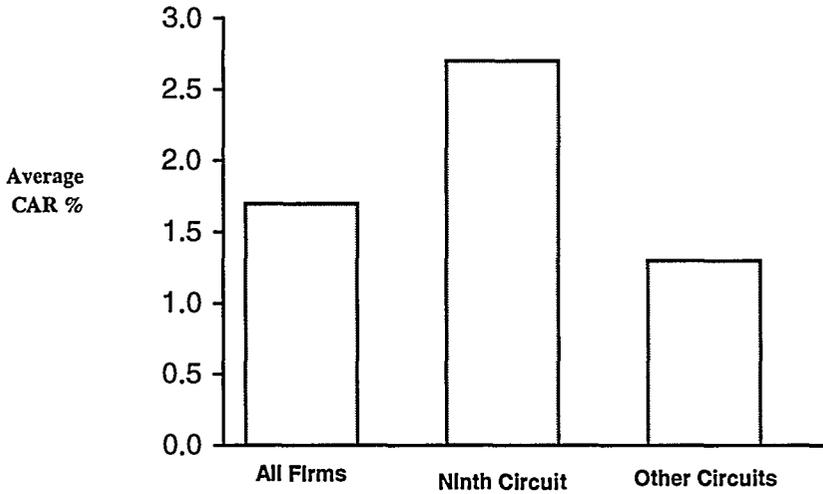
We find that there was a significant positive market reaction to the *Silicon Graphics* decision, which is consistent with the hypothesis that investors believed that the Ninth Circuit's stringent interpretation of the Reform Act's pleading standard, on average, enhanced shareholder wealth. As the graph below indicates, there was a cumulative positive mean abnormal return of 1.78% over the two days following announcement of the decision. This result is statistically significant at the 99% level of confidence, meaning that there is less than a 1% chance that the result would occur purely by chance.

The graph also compares the average CAR of firms headquartered in the Ninth Circuit to that of firms with headquarters in other Circuits. These results provide an even more striking picture of the impact of the *Silicon Graphics* decision on shareholder wealth. The average CAR for those firms most directly affected by the decision—the Ninth Circuit firms—is 2.79%, compared to only 1.27% for the other firms in the sample. Both of these results are significant at the 99% level of confidence. It is not surprising that the non-Ninth Circuit firms should have a positive price reaction—before the Ninth Circuit ruling, no appellate court had accepted the stringent "deliberate recklessness" standard.¹⁰⁰ The Ninth Circuit's decision made it more likely that other appellate courts, and more importantly, the Supreme Court might

99. Details of the procedure and statistical tests are provided in the Appendix.

100. See *supra* text accompanying note 64.

accept the stringent standard. Nonetheless, the decision has its greatest effect on Ninth Circuit companies, and the Ninth Circuit average CAR is significantly greater than the non-Ninth Circuit average CAR at the 95% level of confidence. Overall, then, the results support the proposition that investors viewed the *Silicon Graphics* decision as favorable to shareholders' interests.



MARKET REACTION TO THE SILICON GRAPHICS DECISION

To put these results in more concrete terms, the average change in market value for our sample companies was \$12,429,000.¹⁰¹ Once again, the increase was substantially greater for firms headquartered in the Ninth Circuit, despite the fact that these firms were considerably smaller, on average, than the non-Ninth Circuit firms.¹⁰² The average change in market value for Ninth Circuit firms was \$18,459,000, compared to \$9,381,000 for the non-Ninth Circuit firms in our sample. Thus, the *Silicon Graphics* decision had a substantial impact, whether measured in percentage of value or dollar terms.

If investors believed that the high pleading standard adopted by the Ninth Circuit would benefit shareholders by reducing the net cost of securities litigation, as the above results suggest, then it should also be the case that firms at greatest risk of being sued would benefit more than other firms. To explore this possibility, we compare the market reaction to the *Silicon*

101. We calculated the change in market value by multiplying the cumulative abnormal return by the market value of the firm as of June 30, 1999 (just prior to the announcement of the decision).

102. The mean market values were \$2 billion for the firms in the Ninth Circuit and \$3.4 billion for the non-Ninth Circuit firms.

Graphics decision of firms with a relatively high probability of being sued to the reaction of firms with a relatively low probability of being sued. We use the following company characteristics as predictors for the filing of a securities fraud lawsuit.¹⁰³

(1) *Stock Price Volatility.* Because securities class actions are often filed when there is a large stock price decline, it is sometimes argued that these lawsuits are related to the volatility of the firm's stock price. The more volatile the stock, the more likely a large stock price decline that will trigger the filing of a lawsuit.

(2) *Stock Price Performance.* Firms that have been performing poorly are more likely to experience a stock price decline that will trigger a lawsuit.

(3) *CEO Power.* Concentration of power in the hands of the Chief Executive Officer of the company provides both the incentive and the opportunity to engage in fraudulent activity.

(4) *Monitoring.* Fraudulent activity is more likely to occur when there are weaknesses in the oversight of management by the board of directors or outside auditors.

(5) *External Financing.* Firms have an incentive to fraudulently manipulate investors' perceptions of firm value to obtain external financing on more favorable terms, so fraud is more likely in periods when the firm is issuing securities.

(6) *Leverage.* Firms with heavy debt loads relative to equity have an incentive to engage in fraud to avoid violation of debt covenants and default.

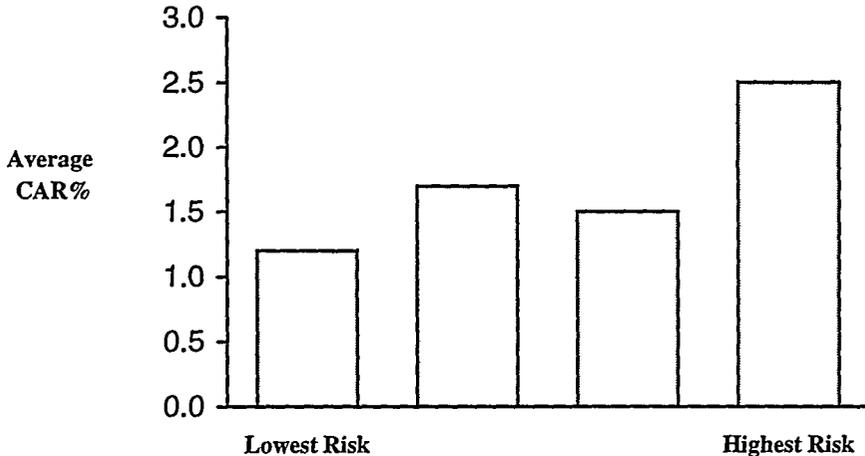
We estimate the relation between these six firm characteristics and whether or not a firm was actually sued in the two years prior to the passage of the Reform Act to determine the litigation risk of each of the firms in our sample. We find that the probability of a lawsuit ranges from 3% to 83% in our sample, with an average probability of 27% over the two-year period. Therefore, securities lawsuits are fairly frequent occurrences for these firms, as expected. We use these estimated probabilities as a proxy for firms' litigation risk.¹⁰⁴

We partition the sample firms into four portfolios based on the probability that they will be sued. As we expected, the average abnormal

103. See Jones & Weingram, *supra* note 91; Jennifer Francis, Donna Philbrick & Katherine Schipper, *Determinants and Outcomes in Class Action Securities Litigation* (1994) (Working Paper, Graduate School of Business, University of Chicago); Patricia M. Dechow et al., *supra* note 25.

104. The Appendix discusses the measurement of these variables and the procedure used to estimate the probability of being sued.

return is more positive for firms at greater risk of being sued in a securities class action. The graph below reveals that the average CAR for firms with the highest litigation risk was 2.61%, which is statistically significant at the 99% level of confidence. In contrast, the average market reaction for firms with relatively low risk of litigation was only 1.19%, which is not statistically significant.

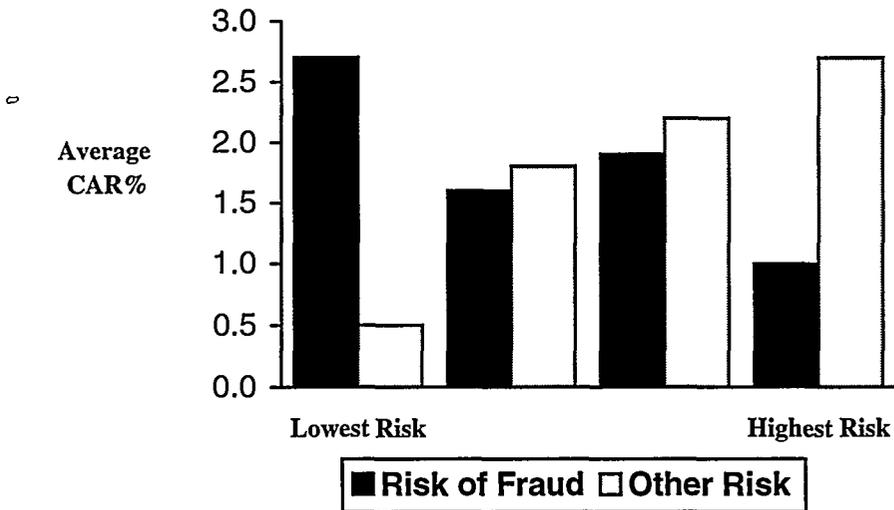


THE EFFECT OF LITIGATION RISK ON THE MARKET REACTION

Although the average CAR for the sample of high litigation risk firms is more than twice that of the low risk sample, the difference is only significant at the 90% level of confidence. It may seem somewhat surprising that investors did not perceive that the *Silicon Graphics* decision would enhance wealth for shareholders of firms at high risk of litigation significantly more than that for shareholders of firms with relatively low risk of litigation, especially because the *Silicon Graphics* interpretation discourages litigation. This result is particularly surprising in light of the fact that litigation risk appears to vary substantially across our sample. One possible explanation for this lack of a statistically significant difference is that our measure of litigation risk does not adequately capture firms' exposure to litigation. Although we cannot rule out this possibility, another explanation deserves investigation. Specifically, if investors distinguish between firms that are likely to be the subject of a weak or frivolous lawsuit and those that are likely to be sued for substantial fraud, our measure of overall litigation risk may mask the market's reaction. Our measure contains components that are likely to correlate with both nonmeritorious and meritorious lawsuits. If investors can distinguish

between the two, the nonmeritorious and meritorious components may be partially canceling each other out.

A review of the six characteristics that affect firms' susceptibility to litigation suggests, all else equal, that the first two factors indicate a "strike suit," whereas the last four factors are plausibly associated with the merits of the plaintiffs' claims. Firms with minimal risk of a lawsuit due to fraudulent activity stand to benefit the most from the Ninth Circuit's stringent interpretation of the Reform Act's pleading standard, while those with a high risk of being sued for committing fraud will benefit the least, if at all. Obviously, deterrence is most valuable for those firms most likely to engage in fraud, and the stringent *Silicon Graphics* standard is likely to reduce deterrence by making it more difficult to bring suit. The findings reported in the next graph support this contention. The average CAR for firms with relatively little risk of litigation due to fraudulent activity is 2.71%—significant at the 99% level of confidence—while that for firms with a high probability of being sued for fraudulent activity is only 0.96%—which is statistically insignificant. Moreover, the average CAR for the lowest risk portfolio is significantly greater than that of the highest risk portfolio at the 95% percent level of confidence.



THE EFFECTS OF COMPONENTS OF LITIGATION RISK ON THE MARKET REACTION

We expect to find the opposite pattern for firms whose litigation risk is attributable to factors other than fraud. Firms at greatest risk of strike suits stand to benefit the most from the high pleading standard adopted by the Ninth Circuit. Although this is the same basic prediction we tested in the graph above when partitioning the sample by litigation risk, the results are much more striking when we remove the confounding effects of investors' reaction to the possibility of genuine fraud. The 2.68% average CAR for the portfolio of firms with the highest litigation risk is statistically significant at the 99% level of confidence.¹⁰⁵ This compares to an insignificant mean return of 0.51% for the portfolio of firms with the lowest litigation risk. The difference in returns is significant at the 95% level of confidence.

In sum, we find that the *Silicon Graphics* decision produced a statistically significant, positive abnormal return for our sample of high technology companies. The result was more positive for firms headquartered in the Ninth Circuit (and therefore the firms most directly affected by the

105. Several readers of prior drafts suggested that the overall positive stock price reaction might be the result of establishing the legal standard and thereby reducing unpredictability. We think that is unlikely given the unpredictability of the competing interpretations of the Reform Act's pleading standard. Simply deciding what the rule will be does not increase predictability if the rule chosen is itself unpredictable. The strong price reaction for firms at the highest risk of litigation suggests that the response is produced by lower expected litigation costs, that is, the "deliberate recklessness" standard reduces the likelihood of suit and the expected cost of settlement.

decision), but results were positive and statistically significant for non-Ninth Circuit firms as well. When we divided our sample on the basis of the firms' risk of securities litigation, we found that the abnormal returns were positively related to the firms' likelihood of being sued. However, the difference between the high litigation risk quartile and low risk quartile was not significant at conventional significance levels. Finally, when we partitioned our probability of litigation into factors related to meritorious plaintiffs' claims and nonmeritorious factors, we found that the price reaction was positively correlated with the nonmeritorious factors, but was negatively related to the factors that indicated the possibility of fraud. These latter results strongly support the view that the Ninth Circuit's decision drove the positive stock price reaction for the overall sample, rather than some independent cause.

V. CONCLUSION: THE USE OF EVENT STUDIES IN STATUTORY INTERPRETATION

How should courts interpret ambiguous statutes? A variety of answers to this question have been offered, with the range seemingly limited only by the imagination of law professors.¹⁰⁶ For those more focused on the real world, however, Jane Schacter argues that the actual practice of the Supreme Court reflects a "common law originalism."¹⁰⁷ In her view, the Court's approach is "'originalist' in that it uses statutory language as an interpretive anchor and focal point," but it also reflects "the common law form because it draws from an array of *judicially*-created sources to delineate the ranges of plausible textual meanings and then to select from among them."¹⁰⁸ Among these sources are a variety of policy norms such as federalism. These norms provide "value-laden interpretive baselines

106. See POSNER, *supra* note 8, at 273-76 (advocating the "imaginative reconstruction" of the enacting legislature); CASS R. SUNSTEIN, *AFTER THE RIGHTS REVOLUTION: RECONCEIVING THE REGULATORY STATE* (1990) (advocating interpretation based on substantive canons intended to enhance the working of the regulatory state); Ronald Dworkin, *Law as Interpretation*, 60 TEX. L. REV. 527, 531 (1982) (advocating the interpretation of a statute "to show it as the best work of art it can be . . ."); Frank H. Easterbrook, *Statutes' Domain*, 50 U. CHI. L. REV. 533 (1983) (advocating the interpretation of only detailed statutes according to the intention of purchasers); William N. Eskridge, Jr., *Dynamic Statutory Interpretation*, 135 U. PA. L. REV. 1479 (1987) (advocating interpretation that gives statutes coherence and relevance for contemporary problems); Jonathan R. Macey, *Promoting Public-Regarding Legislation Through Statutory Interpretation: An Interest Group Model*, 86 COLUM. L. REV. 223 (1986) (advocating interpretation that mitigates the excesses of interest-group legislation).

107. Jane S. Schacter, *The Confounding Common Law Originalism in Recent Supreme Court Statutory Interpretation: Implications for the Legislative History Debate and Beyond*, 51 STAN. L. REV. 1, 5 (1998).

108. *Id.* (emphasis added).

against which the meaning of the disputed language is measured and assessed.”¹⁰⁹ Reliance on these policy norms affords judges a substantial role in determining the content of legal rules.¹¹⁰

It is not our purpose in this Article to assess whether judges should rely on such contestable policy norms when interpreting statutes. Instead, our proposal is more modest: *If* judges are going to rely on policy norms when faced with statutory ambiguity, the appropriate baseline norm for interpreting the Reform Act should be shareholder wealth maximization. We reach that conclusion for two reasons. First, we believe that norm best reflects Congress’ purposes in adopting the Reform Act. Second, shareholder wealth maximization is the background norm that best serves the interests of the parties governed by the securities laws.

Courts have not, to date, used event studies of shareholder wealth effects as a guide to the interpretation of the federal securities laws—that is, they have not relied upon shareholder wealth maximization in determining the substance of the law.¹¹¹ One obvious obstacle to the use of shareholder wealth maximization as an interpretive tool is the Supreme Court’s decision in *Basic, Inc. v. Levinson* defining the scope of the securities laws’ antifraud prohibitions.¹¹² In that case, the Court clearly rejected investor wealth in favor of investor protection, suggesting that it was for Congress, not the courts, to implement such a shift in the focus of the securities laws.¹¹³

But this decision predates Congress’ enactment of the Reform Act, which may represent just such a shift. Congress’ purposes in adopting the Private Securities Litigation Reform Act make shareholder wealth maximization a more appropriate reading of congressional intent in this context. According to the Statement of Managers that accompanied the

109. *Id.* at 24.

110. *See id.* at 25.

111. Event studies have, however, been used to resolve evidentiary questions. *See supra* text accompanying notes 86-88.

112. 485 U.S. 224, 235 (1988):

[O]ne Court of Appeals has stated that “silence pending settlement of the price and structure of a deal is beneficial to most investors, most of the time”. We need not ascertain, however, whether secrecy necessarily maximizes shareholder wealth—although we note that the proposition is at least disputed as a matter of theory and empirical research—for this case does not concern the timing of a disclosure; it concerns only its accuracy and completeness. We face here the narrow question whether information concerning the existence and status of preliminary merger discussions is significant to the reasonable investor’s trading decision. Arguments based on the premise that some disclosure would be “premature” in a sense are more properly considered under the rubric of an issuer’s duty to disclose. The “secrecy” rationale is simply inapposite to the definition of materiality.

Id. (citations omitted).

113. *See id.*

final version of the Reform Act, the Act was designed to achieve a balance between investor protection and the deterrence of frivolous suits. Congress claimed that it was seeking to protect the welfare of investors in striking this balance:

The overriding purpose of our Nation's securities laws is to protect investors and to maintain confidence in the securities markets, so that our national savings, capital formation and investment may grow for the benefit of all Americans.

. . . Private securities litigation is an indispensable tool with which defrauded investors can recover their losses without having to rely upon government action. Such private lawsuits promote public and global confidence in our capital markets and help to deter wrongdoing and to guarantee that corporate officers, auditors, directors, lawyers and others properly perform their jobs. This legislation seeks to return the securities litigation system to that high standard.

. . . .

. . . When an issuer must pay lawyers' fees, make settlement payments, and expend management and employee resources in defending a meritless suit, the issuers' own investors suffer. Investors always are the ultimate losers when extortionate "settlements" are extracted from issuers.

This Conference Report seeks to protect investors, issuers, and all who are associated with our capital markets from abusive securities litigation. This legislation implements needed procedural protections to discourage frivolous litigation.¹¹⁴

This passage supports the view that Congress was seeking to maximize shareholder wealth when it adopted the Reform Act's pleading standard. Congress clearly recognized that securities fraud class actions have costs as well as benefits and expressed its intention to balance those costs and benefits for the benefit of shareholders.

Further evidence of Congress' preference for the consideration of economic efficiency in interpreting the securities laws can be found in the National Securities Market Improvement Act (the "NSMIA"). Passed in 1996, NSMIA directs the SEC to "consider, in addition to the protection of investors, whether the action will promote efficiency, competition, and capital formation" when it is engaged in rulemaking.¹¹⁵ While this law is directed toward the SEC, not the courts, it does suggest a change in

114. H.R. CONF. REP. NO. 104-369, at 31-32 (1995).

115. 15 U.S.C.A. §78(c)(f) (West 1999).

Congress' attitude toward the securities laws from the paternalistic attitude of the 1930s. It seems unlikely that today's Congress would want courts to *ignore* efficiency concerns in interpreting the Reform Act, even if the text of the statute does not specify that goal as NSMIA does.

In addition to reflecting congressional intent, shareholder wealth maximization provides a normatively justifiable basis for balancing the costs and benefits of securities fraud class actions. Shareholders presumably invest in securities in an effort to maximize their wealth, and, therefore, they prefer governing rules tailored to that purpose.¹¹⁶ To be sure, our study's results do not establish that the *Silicon Graphics* interpretation of the Reform Act's pleading standard benefits all corporations. Our sample consists of only high technology companies, and our results would not necessarily extend to other industry sectors. Additionally, for those companies that were most likely to commit fraud, the abnormal returns were statistically indistinguishable from zero, but notably were not negative. For the shareholders of some companies, raising the bar for securities fraud class actions may be neither wealth-enhancing nor wealth-diminishing. The result for the firms most likely to commit fraud suggests another policy prescription that might be drawn from our study: Abolishing the fraud on the market class action altogether¹¹⁷ might well impose such a significant loss of deterrence that it would produce a negative stock price reaction.

Our results do, however, provide evidence that market participants believe that the hurdle imposed to securities fraud class actions created by the *Silicon Graphics* rule is likely to enhance wealth *on average*—the price reaction was positive for the sample as a whole. While these market participants may be wrong in their assessment of the effects of the *Silicon Graphics* decision, investors have powerful incentives to value these effects correctly.¹¹⁸ Because the stock price effect was positive even for firms that are unlikely to face litigation, it seems probable that companies operating in sectors where securities fraud litigation is less common would not experience negative stock returns from the decision. Thus, shareholders on average are likely to benefit from the Ninth Circuit's

116. See Romano, *supra* note 14, at 113 (describing "the maximization of equity share prices" as "the core goal of corporation law").

117. The House proposed to do just that in the original version of the bill that became the Reform Act. See H.R. 10, 104th Cong., Title I, §204 (1995).

118. Courts are certainly in no better position to evaluate the effect of the standard, and their incentives to be correct are not as strong as the market participants. For a critique of the use of market responses to evaluate judicial decisions, see Merritt B. Fox, *The Role of the Market Model in Corporate Analysis: A Comment on Weiss and White*, 76 CAL. L. REV. 1015 (1988).

interpretation. And most shareholders are likely to be average shareholders because they hold a reasonably diverse portfolio, either by purchasing a number of different stocks or by purchasing automatic diversification through a mutual fund.

In a world where most shareholders hold diversified portfolios, policymakers designing rules for shareholders' benefit will succeed if the rules adopted are beneficial on average. Other stakeholders in the corporate enterprise—managers, employees, creditors—presumably benefit from rules that maximize shareholder wealth as well because such rules reduce the corporation's cost of capital, thereby giving the corporation greater resources with which to compensate its managers and employees and greater ability to repay its debts.¹¹⁹

In passing the Reform Act, Congress sought to maintain investor protection while minimizing the costs imposed by securities fraud class actions. Any interpretation of the Reform Act's pleading standard necessarily entails a trade-off between those two goals. The tools of statutory interpretation most frequently relied upon by courts—text and legislative history—do little in this context to tell us where that balance should be struck. Congress studiously avoided resolving the question in the text of the statute, and the legislative history is hopelessly conflicted. The Supreme Court will have to look elsewhere when it eventually resolves the dispute over the proper interpretation of the pleading standard. The empirical evidence presented in this Article suggests that the *Silicon Graphics* interpretation of the pleading standard enhances shareholder wealth. In the absence of a more compelling basis for picking among the competing interpretations, we believe that evidence provides a strong basis for the Supreme Court to accept the stringent interpretation adopted by the Ninth Circuit in *Silicon Graphics*.

119. See EASTERBROOK & FISCHER, *supra* note 23, at 38.

APPENDIX

We measure the impact of the Ninth Circuit decision on our sample firms by calculating the abnormal stock return on July 2, the date on which the Ninth Circuit released its decision, and July 6, the first trading day following the decision and the date on which coverage of the decision appeared in the *Wall Street Journal*. We estimate the expected return using the market model:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

where R_{it} is the rate of return on stock i during day t , R_{mt} is the rate of return on the market portfolio during day t , α_i , and β_i , are the parameters of the model, and ε_{it} is the error or disturbance term.

Daily stock returns and market returns for estimating the market model were obtained from the Center for Research in Security Prices ("CRSP") daily returns file. We use the S&P 500 market index as our market index, although we obtain qualitatively similar inferences if we use any of the following alternative market indices: (1) S&P Small Cap, (2) NASDAQ, (3) Value Line, and (4) Wilshire 5000. The estimated market model parameters, $\hat{\alpha}_i$ and $\hat{\beta}_i$, are obtained from an ordinary least squares regression of the market model over the 252 trading days of calendar year 1998. The expected return is subtracted from the actual return to obtain abnormal returns, AR_{it} :

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$$

We sum the daily abnormal returns over the two day event period to obtain cumulative abnormal returns, $CAR(t_1, t_2)$:

$$CAR(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it}$$

We test the statistical significance of the abnormal returns using the following Z-statistic:¹²⁰

$$Z = \frac{1}{\sqrt{n}} \sum_{i=1}^n \left[\sum_{t=t_1}^{t_2} CAR(t_1, t_2) \right] / \sqrt{\text{Var} \sum_{t=t_1}^{t_2} CAR(t_1, t_2)}$$

where n is the number of observations in the sample, and the variance of the cumulative abnormal return is defined as follows:

$$\text{Var} \left(\sum_{t=t_1}^{t_2} CAR(t_1, t_2) \right) = V_i^2 \left[T + \frac{T^2}{ED} + \frac{\sum_{t=t_1}^{t_2} (R_{mt} - T(\bar{R}_m))^2}{\sum_{j=1}^{ED} (R_{mj} - \bar{R}_m)^2} \right]$$

In this equation, V_i^2 is the residual variance from firm i 's market model regression, T is the number of days in the event period, ED is the number of trading days in the estimation period, and \bar{R}_m is the mean of the market returns over the estimation period.

The following table reports the distribution of CARs for the full sample of firms, and for the sample partitioned by the location of the company's headquarters. We also report Z-statistics testing whether the mean CAR is significantly positive ($Z_{\mu > 0}$) and whether the percentage of CARs that are positive is significantly greater than fifty percent ($Z_{\% > 50\%}$). The results reported in this table correspond to those presented in the first graph in the Article.

120. See Wayne H. Mikkelson & M. Megan Partch, *Withdrawn Security Offerings*, 23 J. FIN. & QUANTITATIVE ANALYSIS 119, 132-33 (1988).

MARKET REACTION TO THE *SILICON GRAPHICS* DECISION

	<i>All Firms</i> (<i>N</i> = 277)	<i>Ninth Circuit</i> (<i>N</i> = 93)	<i>Other Circuits</i> (<i>N</i> = 184)
Mean	1.78	2.79	1.27
Standard deviation	6.88	6.08	7.21
25th percentile	-1.35	-1.12	-1.44
Median	1.26	1.86	1.10
75th percentile	4.35	5.87	3.57
% positive	63.18	63.44	63.04
$Z_{\mu > 0}$	4.88**	3.96**	3.17**
$Z_{\% > 50\%}$	4.39**	2.59**	3.54**

* indicates significance at or above the 95% level of confidence.

** indicates significance at or above the 99% level of confidence.

To determine whether the market reaction was more positive for firms at greatest risk of being sued, we identified six characteristics that affect firms' susceptibility to litigation. The first two characteristics—*Stock Price Volatility* and *Stock Price Performance*—we obtained from a factor analysis of the following five variables: (1) market capitalization, (2) equity beta, (3) share turnover, (4) prior cumulative returns, and (5) return skewness. Factor analysis produces summary measures reflecting the common correlation among the proxies while minimizing the correlation among the constructed factor variables. The factor analysis yields the following summary measures: *Volatility* (positively correlated with equity beta and share turnover) and *Performance* (positively correlated with prior cumulative returns and return skewness).

We obtained the two corporate governance characteristics—*CEO Power* and *Monitoring*—from a factor analysis of the following seven variables which we hand-collected from firms' proxy statements: (1) the proportion of insiders on the Board of Directors, (2) the proportion of common shares held by outside directors, (3) the presence of an audit committee, (4) the use of a Big Six auditor, (5) the presence of an outside blockholder, (6) the presence of a CEO who is also Chairman of the Board

of Directors, and (7) the presence of a CEO who is also the founder of the company. The first factor, *CEO Power*, is positively correlated with the presence of a CEO who is Chairman of the Board and a CEO who is also the company's founder, while the second factor, *Monitoring*, is positively correlated with the existence of an audit committee, the use of a Big Six auditor, and the presence of an outside blockholder.

Finally, *External Financing* is an indicator variable equal to one if the firm issued either debt or equity during the two-year period preceding the passage of the Act, and zero otherwise, and *Leverage* is equal to the debt/equity ratio. We estimate the probability that each of the firms in our sample will be sued using the following probit model:

$$\text{Prob}(\text{Litigation}_i = 1) = F(\alpha_0 + \beta_1 \text{Volatility}_i + \beta_2 \text{Performance}_i + \beta_3 \text{CEO Power}_i \\ + \beta_4 \text{Monitoring}_i + \beta_5 \text{Financing}_i + \beta_6 \text{Leverage}_i)$$

where *Litigation* is an indicator variable equal to one if the firm was a defendant in a class action securities lawsuit, as reported in the *Securities Class Action Alert*, and zero otherwise.

The following table reports the distribution of CARs for the sample partitioned into quartiles based on the estimated risk of litigation. The results reported in this table correspond to those presented in the second graph in the Article.¹²¹

121. We obtain similar inferences using a weighted portfolio regression approach, where the portfolio weight is the firm-specific probability of litigation. See Stephan E. Sefcik & Rex Thompson, *An Approach to Statistical Inference in Cross-Sectional Models with Security Abnormal Returns as Dependent Variable*, 24 J. ACCT. RES. 316, 334 (1986).

THE EFFECT OF LITIGATION RISK ON THE MARKET REACTION

	<i>Litigation Risk Quartiles</i>			
	<i>Lowest Risk</i>	<i>2</i>	<i>3</i>	<i>Highest Risk</i>
Mean	1.19	1.79	1.52	2.61
Standard deviation	7.37	5.15	8.61	5.92
25th percentile	-2.18	-1.25	-1.19	-0.57
Median	0.63	1.29	1.38	1.46
75th percentile	4.06	3.95	3.83	5.43
% positive	52.17	65.21	68.12	68.12
$Z_{\mu > 0}$	1.63	2.52**	2.50**	3.09**
$Z_{\% > 50\%}$	0.36	2.53**	3.01**	3.01*

* indicates significance at or above the 95% level of confidence.

** indicates significance at or above the 99% level of confidence.

To determine the component of total litigation risk attributable to the probability that a firm will be sued for fraud, we reestimate the previous model excluding the four fraud risk proxies, *CEO Power*, *Monitoring*, *Financing* and *Leverage*. We then compute the difference between the total probability of litigation obtained from the estimation of the full model, and the probability of litigation obtained from the modified model. This difference reflects the incremental contribution of fraud risk to firms' total litigation risk.

The following table reports the distribution of CARs separately for the sample partitioned into quartiles based on the estimated risk of litigation due to fraud and the estimated risk of litigation attributable to other sources. The results reported in this table correspond to those presented in the third graph in the Article.¹²²

122. We obtain similar inferences using the weighted portfolio approach discussed *supra* note 118.

**THE EFFECTS OF COMPONENTS OF LITIGATION RISK ON
THE MARKET REACTION**

	<i>Fraud Risk Quartiles</i>			
	<i>Lowest Risk</i>	2	3	<i>Highest Risk</i>
Mean	2.71	1.58	1.86	0.96
Standard deviation	7.08	5.44	6.51	8.21
25th percentile	-1.19	-1.87	-1.23	-0.80
Median	1.66	1.26	1.27	0.70
75th percentile	5.83	4.35	3.94	2.78
% positive	63.77	60.87	68.12	60.87
$Z_{\mu > 0}$	4.00**	2.06*	1.98*	1.63
$Z_{\% > 50\%}$	2.29*	1.81*	3.01**	1.81*

	<i>Other Risk Quartiles</i>			
	<i>Lowest Risk</i>	2	3	<i>Highest Risk</i>
Mean	0.51	1.82	2.12	2.68
Standard deviation	9.34	5.71	5.80	5.87
25th percentile	-3.27	-1.24	-0.69	-0.60
Median	0.18	1.52	0.72	1.17
75th percentile	3.17	4.41	4.50	4.18
% positive	50.00	66.67	57.14	66.67
$Z_{\mu > 0}$	1.20	2.90**	2.59**	3.09**
$Z_{\% > 50\%}$	0.00	2.77**	1.32	2.77**

* indicates significance at or above the 95% level of confidence.

** indicates significance at or above the 99% level of confidence.