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# **Do the Merits Matter *Less* After the Private Securities Litigation Reform Act?**

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## **Abstract**

The paper provides evidence on the impact of the Private Securities Litigation Reform Act of 1995 (PSLRA) by examining a sample of initial public offerings from 1990 to 1999 facing a mix of Section 11 and Rule 10b-5 antifraud claims. Others have provided evidence that the PSLRA increased the significance of merit-related factors in determining the incidence and outcomes of securities fraud class actions. The increase in the importance of merit-related factors, however, is consistent with two possible hypotheses. First, the PSLRA may have reduced solely the incidence of nuisance litigation. Second, the PSLRA may have reduced the incidence of both nuisance litigation as well as a subset of the pre-PSLRA meritorious claims where the additional costs imposed by the PSLRA made such claims unprofitable from the perspective of plaintiffs' attorneys. This paper tests between these hypotheses and provides evidence that meritorious claims lacking obvious "hard evidence" indicia of fraud (an accounting restatement or SEC action) (a) are less likely to be filed post-PSLRA and (b) face a greater likelihood of receiving a dismissal or low-value settlement in the post-PSLRA period. In determining the welfare implications of blocking frivolous suits, policymakers should therefore consider the negative impact of the PSLRA in also discouraging a significant fraction of meritorious litigation.

**Keywords:** Securities litigation, class actions, litigation risk, accounting fraud.

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\* Copyright © 2004, Stephen J. Choi. All Rights Reserved. Roger J. Traynor Professor of Law. Email comments to [choi@law.berkeley.edu](mailto:choi@law.berkeley.edu). Special thanks to Un Kyung Park. Thanks to Jennifer Arlen, Allen Ferrell, Jesse Fried, Mitu Gulati, Andrew Guzman, Michael Klausner, Eric Posner, Adam Pritchard, Hillary Sale, Joel Seligman, Eric Talley, and the participants of the University of Michigan Faculty Workshop, Stanford Law and Economics Seminar, USC/UCLA Corporate Law Roundtable (2004), and the Korea Development Institute Corporate Governance Conference (2003) for helpful discussions and comments. Thanks to Mark Altman, Mikel Diez Sarasola, and Nidhi Tandon for invaluable research assistance.

## 1. Introduction

Securities fraud class actions provide dispersed shareholders of a corporation with a mechanism to aggregate shareholder interests in pursuing litigation against companies and related parties who engage in fraud. Without class actions, dispersed shareholders in publicly-held corporations may not find litigation individually cost-effective, leading to few, if any private enforcement actions against fraudulent companies. Securities fraud class actions act as a complement to public enforcement actions on the part of the Securities and Exchange Commission (SEC) in deterring securities fraud.

Plaintiffs' attorneys initiate and manage securities class actions in the United States. Attorneys, however, may not put the best interests of shareholders or even the investor-members of a class ahead of the attorneys' own self-interest. Many argue that at least some class actions are brought even where the probability of obtaining a judgment on the merits is relatively low (Rosenberg and Shavell, 1985; Bebchuk, 1988; and Alexander, 1991). Suits are initiated in expectation of a nuisance settlement, paid by the defendants to avoid the distraction of litigation, high defense attorney fees, and the negative publicity surrounding a securities lawsuit.<sup>1</sup> In response to the fear of nuisance litigation, Congress enacted the Private Securities Litigation Reform Act of 1995 (PSLRA).

The PSLRA applies only to securities class actions filed after its enactment. The paper refers to suits filed prior to the PSLRA as in the "Pre-PSLRA" period and suits filed after the

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<sup>1</sup> Nuisance suits include suits brought where the plaintiffs have no expectation at all of finding any evidence of fraud or culpability on the part of defendants. Arguably, nuisance suits also include, more broadly, situations where the plaintiffs' expected costs of undergoing a trial exceed the expected benefits of doing so (but the plaintiffs file suit nonetheless to extract a positive settlement from defendants unwilling to go to trial). For exposition purposes, this paper treats as nuisance those claims that have absolutely no merit as well as claims with only a de minimis chance of winning at trial.

PSLRA as in the “Post-PSLRA” period.<sup>2</sup> The PSLRA contains a number of provisions aimed directly at discouraging nuisance litigation. For class action claims under both the Securities Act of 1933 (Securities Act) and the Securities Exchange Act of 1934 (Exchange Act), the PSLRA imposes a lead plaintiff requirement, designating the investor among those who seek to be lead plaintiff with the largest financial interest at stake in the litigation as the presumptive lead plaintiff.<sup>3</sup> In theory, the lead plaintiff provision forces the plaintiffs’ attorney to expend resources in locating a suitable plaintiff who will likely be appointed the lead plaintiff, thereby increasing the plaintiffs’ attorney’s chance of getting selected as lead counsel.<sup>4</sup>

In addition, the PSLRA requires courts to review a class action on the merits (after the “final adjudication” occurs) and impose sanctions (including the defendants’ attorney’s fees) on frivolous litigation.<sup>5</sup> Courts must also review attorney fees to ensure that they are “reasonable,” potentially reducing the expected return to plaintiffs’ attorneys for any given settlement or judgment amount.<sup>6</sup> Greater court scrutiny of both the merits of the complaint as well as the reasonableness of attorneys’ fees lowers the expected return to plaintiffs’ attorneys from bringing a class action. At the very least, attorneys must spend more care and attention than in the pre-PSLRA period to convince the court of the merits of their case (should they lose and face possible sanction from the court) as well as the need for their attorneys fees. The PSLRA

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<sup>2</sup> On the other hand, after the enactment of the PSLRA some circuits applied PSLRA-type pleading with particularity standards on suits filed *prior* to the PSLRA arguing that the circuits’ pre-PSLRA standard was the same as that adopted in the PSLRA. See, e.g., *Williams v. WMX Tech., Inc.*, 112 F.3d 175, 177-78 (5th Cir. 1997) (“This suit was filed prior to the effective date of the [PSLRA], and while the provisions do not apply, the Act adopted the same standard we apply today.”).

<sup>3</sup> See Section 27(a)(3), Securities Act; Section 21D(a)(3), Exchange Act.

<sup>4</sup> Alternatively, plaintiffs’ attorneys may compete with one another (lowering their fees) to become lead plaintiffs’ counsel. The expectation of this competition lowers the expected return to plaintiffs’ attorneys from filing a class action suit.

<sup>5</sup> See Section 27(c), Securities Act; Section 21D(c), Exchange Act.

<sup>6</sup> See Section 27(a)(6), Securities Act; Section 21D(a)(6), Exchange Act. Part of the purpose of the PSLRA was to address: “the manipulation of class action lawyers of the clients whom they purportedly represent”. See Conference Report, H.R. Rep. No. 369, 104th Cong., 1st Sess., 31 (1995), reprinted in 1996 U.S.C.C.A.N. 730 (p. 1103).

establishes a safe harbor against private litigation for fraud involving forward-looking statements in certain contexts (excluding however initial public offerings).<sup>7</sup> Discovery also is stayed in post-PSLRA litigation until after the motion to dismiss.<sup>8</sup> Without the ability to engage in discovery, plaintiffs' attorneys face a higher cost in determining the presence of specific misleading statements and omissions and the materiality of such misstatements and omissions.

For securities fraud claims under the Exchange Act, including in particular Rule 10b-5, the PSLRA also requires that plaintiffs must plead with particularity facts giving rise to a strong inference that the defendants meet the requisite state of mind (scienter) requirement.<sup>9</sup> Without discovery until after the motion to dismiss, however, plaintiffs face a difficult time in gathering facts related to the state of mind of particular defendants in engaging in fraud. In addition, the PSLRA imposes proportionate liability on defendants of a Rule 10b-5 action, relieving less culpable parties (such as auditors and outside directors) of a portion of the total liability.<sup>10</sup>

While evidence exists that the PSLRA reduced nuisance litigation, this paper focuses on a different aspect of the PSLRA: the impact of the PSLRA on meritorious litigation. Spurred by a growing fear of frivolous litigation,<sup>11</sup> Congress in enacting the PSLRA had the following goals:

[T]he "Private Securities Litigation Reform Act of 1995," is intended to lower the cost of raising capital by combating these abuses, *while maintaining the incentive for bringing meritorious actions*. Specifically, [the PSLRA] intends: (1) to encourage the voluntary disclosure of information by corporate issuers; (2) to empower investors so that they-not their lawyers- exercise primary control over private securities litigation; and (3) to encourage plaintiffs' lawyers to pursue valid claims and defendants to fight abusive claims.<sup>12</sup>

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<sup>7</sup> See Section 27A, Securities Act; Section 21E, Exchange Act

<sup>8</sup> See Section 27(b), Securities Act; Section 21D(b)(3)(B), Exchange Act.

<sup>9</sup> See Securities Act; Section 21D(b)(2), Exchange Act

<sup>10</sup> See Securities Act; Section 21D(f), Exchange Act. Outside directors also enjoy proportionate liability under Section 11 of the Securities Act. See Section 11(f)(2), Securities Act.

<sup>11</sup> For a discussion of the motivation to eliminate frivolous suits and the legislative history behind the PSLRA see Baker and Krawiec (2004).

<sup>12</sup> See S. Rep No. 104-98, at 4 (1995), reprinted in 1995 U.S.C.C.A.N. 679, 688 (emphasis supplied).

Did the PSLRA act like a magic bullet as Congress intended (at least in its public rhetoric), removing frivolous suits while also preserving meritorious private litigation against those who commit securities fraud? Or was the PSLRA more like a tax, imposing considerable barriers to both frivolous as well as meritorious litigation?<sup>13</sup>

Importantly, Congress and regulators can only indirectly affect private securities litigation. Plaintiffs' attorneys determine which companies will face a class action. As profit-maximizers, plaintiffs' attorneys select only those companies that provide a positive expected return from initiating litigation. To the extent the PSLRA raises costs for meritorious suits in addition to nuisance suits, the PSLRA also will work to deter more meritorious litigation.

The paper tests the impact of the PSLRA on more meritorious litigation. The paper's dataset consists of initial public offerings ("IPOs") in the United States from 1990 to 1999. Issuers (and associated parties) engaged in IPOs face antifraud liability under both Section 11 of the Securities Act and Rule 10b-5 of the Exchange Act.<sup>14</sup> One flaw of the dataset is that the PSLRA only applies partially to the Section 11 claims, biasing against finding results that the PSLRA impacted litigation. Section 11 does not require plaintiffs to show scienter and, correspondingly, the PSLRA's pleading with particularity provision for scienter does not apply to Section 11. Nonetheless, the negative impact of the PSLRA on Rule 10b-5 claims (reducing the overall expected damages available to plaintiffs' attorneys considering a suit for IPO-related fraud) as well as the application of the "sounds in fraud" doctrine to Section 11 claims (providing a backdoor way of introducing the PSLRA's pleading with particularity requirement for scienter

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<sup>13</sup> See Stout (1996) (putting forth the hypothesis that the PSLRA may have negatively impacted meritorious litigation as well as frivolous suits); Sale (1998) (voicing the concern that the PSLRA's heightened pleading requirement for fraud combined with a stay in discovery would unduly restrict meritorious litigation); Talley and Johnsen (2004) (using the complementary relationship between executive compensation and securities litigation frequency and settlement costs to provide empirical evidence inconsistent with the hypothesis that the PSLRA reduced frivolous litigation without also deterring meritorious suits).

<sup>14</sup> Many of the actions also included Section 12(a)(2) antifraud claims under the Securities Act. These claims were highly correlated with the presence of a Section 11 antifraud claim and are not examined separately.

on such actions) provide at least a theoretical basis to expect significant results in testing the PSLRA using the paper's IPO dataset.

Using the IPO dataset, the paper asks whether plaintiffs' attorneys filed suits less frequently against companies where the expected payoff from litigation is relatively small in the post-PSLRA period (the "size effect hypothesis"). The paper reports evidence that companies with smaller IPO offering amounts and lower aftermarket losses faced a significantly reduced risk of a class action in the post-PSLRA period. The data also indicates that for smaller companies, the PSLRA deterred all forms of class actions – both nuisance and meritorious.

The impact of the PSLRA in raising the costs for pursuing meritorious actions may not be uniform. Consider "hard evidence" of fraud, defined to include a public announcement of an accounting restatement (or an inquiry that is expected to lead to a restatement) or SEC investigation or enforcement action. Where hard evidence prior to the filing of suit is absent, plaintiffs' attorneys face a disproportionate increase in costs. Hard evidence of fraud facilitates the ability of plaintiff attorneys' to meet the various PSLRA-imposed requirements, including the heightened pleading requirements at the motion to dismiss stage for Rule 10b-5 actions.<sup>15</sup>

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<sup>15</sup> Consider the case of Paracelsus Healthcare Corp. The company went public in IPO in August 1996 (post-PSLRA). On October 9, 1996, Paracelsus issued a press release in which it announced an earnings shortfall and that it had appointed a special committee of the board (consisting of non-management members) to direct an inquiry by outside counsel into Paracelsus's accounting and financial reporting practices and procedures. The press release stated that Paracelsus expected to restate its financial results based on the outside counsel's investigation (relating to the use of reserves and recognition of certain bad debt expenses, among others). Shortly after the October 9, 1996 "hard evidence" announcement, the following plaintiffs' attorneys firms filed class action lawsuits against Paracelsus and several of the company's top officers:

Milberg Weiss Bershad Hynes & Lerach LLP (October 11, 1996)

Kaplan, Kilsheimer & Fox (October 11, 1996)

Savett Frutkin Podell & Ryan, P.C. (October 11, 1996)

Schoengold & Sporn, P.C. (October 16, 1996)

Weiss & Yourman (October 18, 1996)

Abbey & Ellis (October 29, 1996)

Goodkind Labaton Rudoff & Sucharow LLP (October 29, 1996)

Wechsler Harwood Halebian & Feffer LLP (November 14, 1996)

The class actions ultimately resulted in a settlement in July, 1999 consisting of \$15 million in cash and 2.74 million shares of stock.

Even after the motion to dismiss, the presence of hard evidence increases the plaintiffs' overall expected probability of success in litigation (through greater expected damages, for example), raising the payoff to plaintiffs' attorneys of pursuing a suit despite the increased costs due to the PSLRA. Hard evidence, for example, may increase the ability of attorneys to push through a higher attorney fee request past court scrutiny. The paper therefore predicts that the PSLRA had a disproportionate and large negative impact on meritorious litigation lacking hard evidence of fraud ("soft evidence" cases). The paper finds that issuers that faced non-nuisance, soft evidence cases in the pre-PSLRA period would have been much less likely to face a lawsuit in the post-PSLRA period all other things being equal (the "soft evidence hypothesis").<sup>16</sup>

One explanation for this reduced probability of litigation is a shift in the expected outcomes for soft evidence suits in the post-PSLRA period (the "outcomes" hypothesis). The paper reports that 64.9% of the soft evidence cases in the pre-PSLRA period resulted in a non-nuisance outcome. The same soft evidence cases in the post-PSLRA period, however, are predicted to result in only 45.8% (or 24.3% if a Heckman correction is used to control for unobservable factors that may affect the pool of suit firms) non-nuisance outcomes.

Section 2 describes the PSLRA and the hypotheses on the impact of the PSLRA on meritorious litigation. Section 3 describes the paper's dataset. Section 4 reports evidence on the size effect hypothesis. Section 5 discusses the empirical results on the soft evidence hypothesis.

## **2. The PSLRA and Hypotheses**

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<sup>16</sup> Many soft evidence claims achieve settlements above nuisance value (defined as settlements over \$2 million as discussed later in the paper). Jenny Craig Inc. went public in the Fall of 1991 (prior to the enactment of the PSLRA). Shortly thereafter, Milberg Weiss filed a class action securities lawsuit against Jenny Craig alleging, among other things, that the company had forecast a 20 percent jump in business despite the knowledge that the diet-center market was "saturated". Jenny Craig eventually settled the case for \$9.5 million in 1992.

Mixed evidence exists on the stock market impact of the PSLRA. Spiess and Tkac (1997) and Johnson, Kasznik, and Nelson (2000) both report a significant positive abnormal return for dates around the time of Congress's override of President Clinton's veto of the PSLRA, consistent with the view that the PSLRA increased shareholder welfare for firms in high litigation risk industries.<sup>17</sup> In contrast, Ali and Kallapur (2001) provide evidence of significant negative cumulative abnormal returns from the day before the congressional vote on the conference committee bill on the PSLRA to the next trading day after the PSLRA's enactment.

Pritchard and Sale (2003) examine the impact of the PSLRA's heightened pleading standards on the ability of plaintiffs to survive a motion to dismiss. They hypothesize that hard evidence accounting claims (particularly related to revenue restatements) are more likely to survive a post-PSLRA motion to dismiss.<sup>18</sup> Pritchard and Sale report that while revenue-related accounting violations are not significantly related to dismissals, other GAAP allegations are negatively correlated with dismissals in the Second Circuit in the post-PSLRA period.

Johnson, Nelson and Pritchard (JNP) (2002) provide a test of whether merits matter more in the post-PSLRA period. Focusing on suit filings, JNP report that the likelihood of a securities fraud class action is not significantly correlated with whether a firm experienced an accounting restatement in the pre-PSLRA period. In contrast, during the post-PSLRA period, whether a firm faced an accounting restatement is significantly associated with an increased likelihood of a lawsuit. JNP interpret this shift between the pre and post-PSLRA periods as consistent with the merits mattering more post-PSLRA. JNP also look at the outcomes of litigation, reporting that

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<sup>17</sup> In a related study, Johnson, Nelson, and Pritchard (2000) provide evidence that the promulgation of the Ninth Circuit's stringent (pro-defendant) interpretation of the post-PSLRA pleading with particularity standard resulted in a significant positive cumulative abnormal return, particularly for firms at high risk for litigation.

<sup>18</sup> In a study of secondary market antifraud lawsuits in the pre-PSLRA period, Jones and Weingram (1996b) report a positive correlation between accounting restatements and the likelihood that plaintiffs' attorneys will file suit against a firm.

the presence of an accounting restatement is significantly related to a higher probability of a non- nuisance settlement (defined as a settlement for more than \$2 million).

Existing research on the PSLRA, however, fails to answer a key question. Although frivolous suits may be less prevalent in the post-PSLRA period, are meritorious suits also less prevalent? In reducing Type I errors (e.g., lowering the incidence of frivolous litigation), did the PSLRA increase Type II errors (e.g., blocking meritorious suits)?<sup>19</sup>

The fact that after the enactment of the PSLRA, suits with more hard evidence of fraud (accounting restatements or an SEC investigation) are more prevalent could result from one of two possibilities. First, plaintiffs' attorneys may stop filing frivolous suits, leaving only the meritorious suits – in which case the PSLRA is unambiguously welfare-increasing (at least before taking into account the costs of implementing the PSLRA). Second, plaintiffs' attorneys may stop filing both frivolous suits as well as a large portion of the meritorious suits. If the second alternative is the case, we must balance the gain from the decrease in frivolous suits against the loss from the reduction in meritorious suits to determine whether the PSLRA in fact is socially beneficial.

Several testable hypotheses relate to the impact of the PSLRA on meritorious, non- nuisance suit litigation as follows:

**Hypothesis 1 (Size Effect):** The minimum potential damage award available for a securities class action before a plaintiffs' attorney will choose to file a securities fraud class action increased in the post-PSLRA period.

The higher costs imposed on plaintiffs' attorneys due to the PSLRA will result in plaintiffs' attorneys demanding a higher expected return from litigation before they file suit. Evidence from the pre-PSLRA period exists that companies offering smaller damage awards for

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<sup>19</sup> See Stout (1999).

plaintiffs' attorneys rarely faced a securities class action (Bohn and Choi, 1996). Grundfest and Perino (1997) provide summary statistic evidence on the early post-PSLRA experience, covering only 1996. Grundfest and Perino report an increase in the average price decline for firms facing a lawsuit in the post compared with pre-PSLRA period. The increase in the average price decline is consistent with the need of plaintiffs' attorneys to show more "wrongdoing" due to the greater obstacles imposed by the PSLRA.

Plaintiffs' attorneys may also react to the PSLRA differentially based on whether there exists hard or soft evidence of fraud prior to the filing of suit as described in the next hypothesis:

**Hypothesis 2 (Soft Evidence):** Plaintiffs' attorneys are less likely to file non-nuisance claims that involve only soft evidence of fraud in the post-PSLRA period.

Some limited evidence exists that plaintiffs' attorneys avoid more soft evidence claims post-PSLRA. Bajaj, Muzumdar, and Sarin (BMS) (2003) report summary statistic evidence that the number of cases alleging accounting-related fraud increased in the post-PSLRA period while cases alleging a more generic failure to disclose decreased.

Why might plaintiffs' attorneys avoid non-nuisance, soft evidence claims in the post-PSLRA period? As embodied in the following hypothesis, the expected outcome of soft evidence claims may be less favorable for plaintiffs and their attorneys in the post-PSLRA period (leading to more frequent dismissals for example).

**Hypothesis 3 (Outcomes):** Soft evidence claims that received a non-nuisance outcome in the pre-PSLRA period are more likely to receive a dismissal or low value settlement in the post-PSLRA period.

### 3. The Dataset

The paper's dataset consists of all initial public offerings from January 1, 1990 to December 31, 1999 as identified in the Securities Data Corporation database. Only IPOs of U.S. corporations not in a financial services related industry (SICs 6000 to 6999) and not involving a spinoff were included in the sample for a total of 3585 IPOs.<sup>20</sup> IPOs that faced a class action suit were identified through several sources including the Securities Class Action Alert, the Stanford Securities Class Action Clearinghouse, searches on Westlaw and Lexis, and searches through the websites of plaintiffs' attorneys as well as securities claims administrators (for a total of 191 IPO suit firms).<sup>21</sup> Only suits related to the IPO were collected, defined as suits that alleged fraud relating back to disclosures made during the IPO and that include the IPO date in the class period. Class action suits brought as part of the IPO laddering litigation (involving allegations that underwriters colluded with initial institutional investors in an IPO to drive the secondary market price of the IPO artificially upwards) were excluded from the dataset.<sup>22</sup> Panel A of Table 1 reports the number of IPOs as well as the number of IPO firms facing a suit by year. Panel B of Table 1 breaks down of IPO suit firms by primary securities market.

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<sup>20</sup> SIC 6000 to 6999 represent financial service companies that face different regulation than other firms. Spin-off IPOs may present companies with different financial needs as well as different types of managers (with different objectives) than other IPOs and are therefore excluded.

<sup>21</sup> It is possible that the searches may have missed some less visible class actions. The less visible class actions, nonetheless, are likely the smaller and economically unimportant actions.

<sup>22</sup> For a separate study of the issuer's culpability in the IPO laddering litigation see Choi and Pritchard (2004).

**Table 1: Summary Data on Suit and Matching Samples****Panel A: Number of IPOs and Suit by Year**

Year	Number of IPOs	Number of Suits	Percentage
1990	129	8	6.20%
1991	277	21	7.58%
1992	362	21	5.80%
1993	450	34	7.56%
1994	400	14	3.50%
1995	444	20	4.50%
1996	655	28	4.27%
1997	429	21	4.90%
1998	234	12	5.13%
1999	396	12	3.03%
Total	3776	191	5.06%

Fraction of IPOs with a suit issued before the enactment of the PSLRA (1990-1995) = 0.0573

Fraction of IPOs with a suit issued after the enactment of the PSLRA (1996-1999) = 0.0425

t-test of the difference in suit incidence for IPOs issued before and after the enactment of the PSLRA = 2.059 (p= 0.0396)

**Panel B: Breakdown of Suits Firms by Securities Exchange**

Exchange	Suit	Percent
AMEX	8	4.2%
NASDAQ	139	72.8%
NYSE	20	10.5%
OTC	10	5.2%
SmallCap	14	7.3%
Total	191	100.0%

**Panel C: Breakdown of Types of Claims**

	Suit filed pre-PSLRA	Percent	Suit filed post-PSLRA	Percent	Total	Percent
Section 11 Only	11	18.0%	31	34.1%	42	27.6%
Rule 10b-5 Only	8	13.1%	14	15.4%	22	14.5%
Both Section 11 and Rule 10b-5	42	68.9%	46	50.6%	88	57.9%
Total	61	100.0%	91	100.0%	152	100.0%

t-test of difference in fraction of Section 11-only suits between Pre-PSLRA and Post-PSLRA = -2.187 (p=0.030).

Focusing on initial public offerings provides both advantages and disadvantages in testing the impact of the PSLRA. An advantage of focusing on IPOs is that many factors driving a company to engage in fraud are relatively similar across all companies in the sample.

Companies engaged in an IPO are often at a similar stage in terms of need for financial capital (thus the IPO) and therefore have similar incentives to engage in fraud (to raise more proceeds from the IPO). Comparing IPO firms against one another requires fewer controls for the need and incentive on the part of company officials to engage in fraud. Furthermore, the deterrence impact on fraud from meritorious litigation as well as the higher costs imposed through frivolous litigation are particularly acute for IPO firms and their investors. Often, investors know relatively little about an IPO firm prior to the IPO, giving company officials a potentially greater ability to engage in fraud. Determining the impact of the PSLRA on IPO firms therefore is important from a societal perspective.

Disadvantages of looking at initial public offerings exist and further research should examine the hypotheses set forth in this paper on purely secondary market fraud cases. Congress targeted the PSLRA largely on antifraud liability under the Exchange Act (including Rule 10b-5). Only part of the PSLRA applies for antifraud liability under the Securities Act focusing on offerings, including Section 11 liability. While plaintiffs must show the presence of a materially misleading statement (or omission where there is a duty to disclose), Section 11 does not require that plaintiff's plead scienter on the part of defendants.

Panel C of Table 1 indicates that for some of the IPO suits, plaintiffs filed only a Section 11 claim. Plaintiffs filed an increased fraction of Section 11-only claims in the Post-PSLRA period (18% in the pre-PSLRA period compared with 34.1% in the post-PSLRA period – difference significant at the 5% level). The majority of claims in both the pre and post-PSLRA periods, nonetheless, include a Rule 10b-5 claim.

To the extent Section 11 claims predominate in the dataset, the paper's tests focus more on the impact of the PSLRA on non-scienter-related aspects of antifraud suits, including for

example the stay on discovery until after the motion to dismiss, the lead plaintiff provisions of the PSLRA, the requirement that courts impose sanctions for frivolous litigation, and the requirement that courts review attorney fee awards for “reasonableness”. While significant parts of the PSLRA continue to apply to Section 11 claims, the partial application of the PSLRA biases against finding any results that the PSLRA had an impact on securities fraud suits.

For two reasons, nonetheless, the PSLRA will still have some effect on even IPO-related suits. First, even where the PSLRA affects primarily Rule 10b-5 claims, the loss (or reduction in value) of such claims for IPO-related fraud reduces the total amount of potential damages available for plaintiffs and the plaintiffs’ attorneys (resulting at the margin in plaintiffs’ attorneys choosing not to pursue claims that otherwise would have been pursued prior to the PSLRA).

Second, under the “sounds in fraud” doctrine, courts have required pleading with particularity of facts giving rise to a strong inference of scienter (e.g., that the defendants either purposefully or recklessly engaged in fraud) even for Section 11 claims, despite the absence of a formal scienter requirement. The sounds in fraud doctrine is applied most commonly when joint Rule 10b-5 and Section 11 claims are made.<sup>23</sup> The empirical evidence on the sounds in fraud doctrine effect on dismissal rates for Section 11 claims is mixed. Pritchard and Sale (2003) provide evidence from the post-PSLRA period that while the Ninth Circuit is less likely to dismiss a Section 11 claim (compared with a Rule 10b-5 claim), the Second Circuit is equally likely to dismiss both types of claim. The application of the sounds in fraud doctrine to joint Rule 10b-5 and Section 11 claims is consistent with the shift on the part of plaintiffs’ attorneys

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<sup>23</sup> See Sale (1998) (describing the sounds in fraud doctrine). Among court opinions applying the sound in fraud doctrine include *Shapiro v. UJB Financial Corp*, 964 F.2d 272 (3d Cir. 1992); *In re Stac Electronics* [Sec. Litig.](#), 89 F.3d 1399 (9th Cir. 1996); *In re Anchor Gaming Securities Litigation*, 33 F. Supp. 2d 889, 892 (D. Nev. 1999); *In re N2K Inc. Securities Litigation*, 82 F. Supp. 2d 204, 210 n.10 (S.D.N.Y. 2000); *Castlerock Mgmt., Ltd. v. Ultralife Batteries, Inc.*, 68 F. Supp. 2d 480, 485-86 (D.N.J. 1999).

toward more Section 11-only claims in the post-PSLRA period as detailed in Panel C of Table 1 (as a means to avoid the doctrine).

#### **4. Size Effect Hypothesis**

The increased costs after the enactment of the PSLRA may lead plaintiffs' attorneys not to file suit against firms offering only lower expected value claims. Note first from Panel A of Table 1 that while 5.73% of the 2062 IPOs issued prior to the enactment of the PSLRA faced a securities fraud class action, only 4.25% of 1714 the IPOs issued after the enactment of the PSLRA faced a class action (difference significant at the 5% level).<sup>24</sup> The overall incidence of class actions targeting IPOs decreased after the enactment of the PSLRA.

To assess the size effect hypothesis, the paper compares the IPOs issued before and after the enactment of the PSLRA in terms of offering amount (adjusted to 1999 dollars) as reported in Table 2.<sup>25</sup> All other things being equal, IPOs with lower offering amounts present plaintiffs' attorneys with reduced expected damage amounts for antifraud claims. For the subset of offerings from \$0 to \$20 million, the fraction of offerings facing a lawsuit is not significantly different for IPOs issued before and after the enactment of the PSLRA: 2.5% of the 749 pre-enactment IPOs and 2.8% of the 464 post-enactment IPOs. However, for the subsets of offerings ranging from \$0 to \$60 million and \$0 to \$100 million in amount, the fraction of IPOs facing a securities class action is significantly lower for IPOs issued in the post-PSLRA period.

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<sup>24</sup> IPOs issued immediately prior to the enactment of the PSLRA may have faced a suit either in the pre-enactment or post-enactment periods. To control for this possibility, IPOs issued in 1995 are excluded from the comparison.

<sup>25</sup> Some IPOs issued before the enactment of the PSLRA may face a suit filed after the enactment. To control partially for this effect, IPOs issued in 1995 are dropped from the comparison.

**Table 2: Summary Description of IPO Offering Amount and Suits**

Offer Amount (1999 dollars) (Millions)	Pre-Enactment of PSLRA Number of IPOs	Number of Suits	Suits as a Percent of IPOs	Post-Enactment of PSLRA Number of IPOs	Number of Suits	Suits as a Percent of IPOs
<\$20	749	19	2.5%	464	13	2.8%
≥\$20 to <\$40	454	41	9.0%	457	20	4.4%
≥\$40 to <\$60	203	17	8.4%	317	14	4.4%
≥\$60 to <\$80	85	7	8.2%	173	9	5.2%
≥\$80 to <\$100	36	5	13.9%	91	6	6.6%
≥\$100 to <\$120	18	3	16.7%	61	2	3.3%
≥\$120 to <\$140	16	2	12.5%	34	2	5.9%
≥\$140 to <\$160	8	0	0.0%	22	1	4.5%
≥\$160 to <\$180	10	1	10.0%	16	0	0.0%
≥\$180 to <\$200	7	3	42.9%	17	1	5.9%
≥\$200	32	0	0.0%	62	5	8.1%
Total	1618	98	6.1%	1714	73	4.3%

Excludes 1995 for the Pre-Enactment of PSLRA period

t-test of difference in suit incidence where offering amount is ≥\$0 and <\$20 million = -0.280 (p=0.7798)

t-test of difference in suit incidence where offering amount is ≥\$0 and <\$60 million = 2.040 (p=0.0415)

t-test of difference in suit incidence where offering amount is ≥\$0 and <\$100 million = 2.151 (p=0.0315)

Second, the paper examines the one-year adjusted aftermarket loss from the IPO offering amount reported in Table 3 (in 1999 dollars).<sup>26</sup> While plaintiffs’ attorneys may file suit up to three years after the IPO,<sup>27</sup> the paper focuses on the first-year performance to screen out the impact of factors unrelated to the IPO on aftermarket performance. Because the IPOs lack any pre-IPO trading data with which to estimate a market model, losses are adjusted based on the Center for Research in Security Prices (CRSP) NYSE/AMEX/NASDAQ market index. For all IPOs with a positive one-year adjusted aftermarket loss (e.g., greater than zero losses), 9.6% of the IPOs issued pre-enactment of the PSLRA faced a suit compared with 6.0% post-enactment

<sup>26</sup> As with the offering amount comparison, IPOs issued in 1995 are dropped.

<sup>27</sup> Section 13 of the Securities Act provides that the statute of limitations for Section 11 claims extends for the lesser of three years after the security was “bona fide offered to the public” or one year after the discovery of the untrue statement or omission (or discovery “should have been made by the exercise of reasonable diligence”). The Supreme Court in *Lampf, Pleva, Lipkind, Prupis & Petigrow v. Gilbertson*, 501 U.S. 350 (1991) applies a similar one/three-year statute of limitations to Rule 10b-5 actions. After the period of this paper’s study, the Sarbanes-Oxley Act increased the statute of limitations period for Rule 10b-5 claims.

(difference significant at the 1% level). For the subsets of firms ranging respectively from \$0 to \$20 million, \$0 to \$40 million, and \$0 to \$100 million in losses, the IPOs issued pre-enactment faced a greater incidence of suits compared with IPOs issued post-enactment (all differences significant at the 1% level).<sup>28</sup> Lower aftermarket losses translate into lower expected damages from an antifraud lawsuit, all other things being equal. As with the offering amount data, the comparison of one-year post-IPO adjusted market performance is consistent with the size hypothesis that plaintiffs' attorneys shifted away from smaller fraud claims after the enactment of the PSLRA, leaving such IPOs with reduced (if any) private enforcement against fraud.

**Table 3: Summary Description of One-Year Adjusted Aftermarket Loss for IPOs and Suits**

1 Year Aftermarket Adj. Loss (1999 dollars) (Millions)	Pre-Enactment of PSLRA			Post-Enactment of PSLRA		
	# IPOs	Suits	Percent	#IPOs	Suits	Percent
≥0 to <\$20	712	41	5.8%	593	16	2.7%
≥\$20 to <\$40	106	22	20.8%	253	23	9.1%
≥\$40 to <\$60	30	13	43.3%	112	10	8.9%
≥\$60 to <\$80	16	6	37.5%	48	6	12.5%
≥\$80 to <\$100	4	2	50.0%	27	2	7.4%
≥\$100 to <\$120	3	0	0.0%	26	3	11.5%
≥\$120	8	0	0.0%	41	6	14.6%
Total	879	84	9.6%	1100	66	6.0%

Excludes 1995 for the Pre-Enactment of PSLRA period

t-test of difference in suit incidence where adjusted loss is ≥\$0 and <\$20 = 2.699 (p=0.0070)

t-test of difference in suit incidence where adjusted loss is ≥\$0 and <\$60 = 3.222 (p=0.0013)

t-test of difference in suit incidence where adjusted loss is ≥\$0 and <\$100 = 3.456 (p=0.0006)

To assess whether other factors may affect the decision on the part of plaintiffs' attorneys to avoid lower loss IPOs in filing suit, the paper compares the lawsuit firms against a set of matching firms. For each IPO suit firm, the paper identifies a matching firm from among the non-suit IPOs based on three criteria. First, matching firms were chosen based on having an

<sup>28</sup> IPOs issued immediately prior to the enactment of the PSLRA may have faced a suit either in the pre-enactment or post-enactment periods. To control for this possibility, IPOs issued in 1995 are excluded from the comparison.

offering amount from 33% to 300% of the IPO suit firm's IPO offering amount.<sup>29</sup> Second, matching firms were chosen from the same 3-digit SIC code as the IPO suit firms. Where no matching firm existed (meeting all the criteria), a firm was selected from neighboring 3-digit SIC code groups, but within the same 2-digit industry SIC group. Lastly, matching firms were chosen from among IPOs in the same IPO year as the IPO suit firm. Where no matching firm existed meeting all three criteria in the same year, firms in the year before and after the IPO suit firm's IPO year were examined. For IPO suit firms in the pre-PSLRA period (1990-1995), matching firms were only drawn from the same 1990-1995 period. Similarly for post-PSLRA suit firms, matching firms were drawn from only the 1996-1999 period. Using these three criteria, a total of 185 pairs of suit and matching firms were selected. The paper then collected several variables related to the decision to file a class action for the suit and match firms.

Table 4 reports a comparison of the means for various offering characteristic variables. Note that no statistically significant difference exists between the suit and matching samples in terms of IPO offering price, offering amount, offered shares as a fraction of the outstanding shares pre-IPO, asset size of the firm at the time of the IPO, or market capitalization of the firm immediately after the IPO regardless of whether the suit was filed pre or post-PSLRA. In the pre-PSLRA period, the matching firm IPOs have a higher fraction of offerings with a lockup option (weakly significant at only the 20% level); in the post-PSLRA, no statistically significant difference exists in the incidence of lockup options between suit and matching firms.

Table 4 also provides a comparison of the suit and match firms based on the presence of a secondary offering of shares as part of the IPO. Where managers (or pre-IPO large shareholders of the firm) are directly selling shares in the IPO, a greater incentive may exist to engage in

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<sup>29</sup> The paper matched based on offering amount to control for the potential maximum Section 11 damages based on the IPO. See Section 11(e), Securities Act.

**Table 4: Comparison of Suit and Matching Firm Offering Characteristics**

Matching firms selected based on (a) offering amount within 300% and 33% of the suit firm's offering amount; (b) same 3-digit SIC code (if none found then searched neighboring 3-digit SIC codes but within same 2-digit SIC grouping); (c) same IPO year (if none found then searched one year after and one year before). For IPO suit firms in the pre-PSLRA period (1990-1995), matching firms were only drawn from the same 1990-1995 period. Similarly for post-PSLRA suit firms, matching firms were drawn from only the 1996-1999 period. Comparison is between matching firms and those suit firms with a corresponding match.

	Suit Filed Pre-PSLRA Sample Mean	Match Sample Mean	p-value	Suit Filed Post-PSLRA Sample Mean	Match Sample Mean	p-value
Offer Price	12.34	12.62	0.6199	12.20	11.71	0.4800
Offer Amount (mill.) (in 1999 dollars)	45.00	43.81	0.8090	61.87	54.25	0.6054
Offered shares as fraction of outstanding post-IPO	0.3266	0.3380	0.4784	0.3708	0.4213	0.5256
Offer Amount/Market Capitalization	0.3423	0.3361	0.7483	0.3365	0.3433	0.7928
Fraction of offerings with a Lockup Option	0.9255	0.9680	0.1956	0.9438	0.9551	0.7341
Market Cap. (based on Offer Price) (mill.) (in 1999 dollars)	161.86	143.89	0.4076	259.10	182.90	0.3188
Assets (mill.) (in 1999 dollars)	105.58	103.77	0.9488	157.64	123.04	0.6228
Presence of a secondary share offering in the IPO	0.5106	0.5106	--	0.4494	0.3708	0.2887
Amount of secondary share sales (mill) (in 1999 dollars)	5.84	6.89	0.5340	10.99	4.29	0.1568
Amount of secondary sales as fraction of offering amount	0.1181	0.1344	0.4990	0.0971	0.0765	0.3085

p-value is for a t-test of the difference between suit and match mean within the respective time period (pre or post-PSLRA).

**a** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 1% level

**b** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 5% level

**c** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 10% level

fraud. Table 4 indicates however the no significant difference exists between suit and match firms in either the pre or post-PSLRA periods for the presence of a secondary offering, the mean size of the secondary offering, and the secondary offering amount as a fraction of the total offering amount. Lastly for each offering characteristic variable, the paper calculates the difference between suit and match firms. None of the shifts in this difference between the pre and post-PSLRA periods (the difference of the differences) are significant.

Table 5 provides a comparison of the means for variables related to the aftermarket performance of the lawsuit and matching firms in the first-year after the IPO. In Panel A, observe that the one-year post-IPO adjusted loss (adjusted based on the CRSP market index and in 1999 dollars) is significantly higher for the suit firms compared with the matching firms for both suits filed in the pre and post-PSLRA periods. In addition, the minimum one-day return during the first-year after the IPO (the one-year post-IPO minimum 1-day return) is significantly lower for the suit sample of firms. As discussed in JNP (2002), the minimum one-day return embodies the perceived tendency of plaintiffs' attorneys to file suit against companies experiencing unusually large one-day drops in their stock price.

The first-day return after the IPO is higher for matching firms compared with suit firms in the pre-PSLRA period (at only the 20% level however). This is weakly consistent with Tinic (1988) who argues that firms may purposefully underprice their IPOs as a means of reducing their exposure to securities class actions. In contrast, in the post-PSLRA period, the suit firms have a significantly higher first-day return after the IPO compared with matching firms (significant at the 10% level). Moreover, the difference between the pre and post-PSLRA differences in first-day returns between suit and match firms is significant at the 5% level.

Francis, Philbrick, and Schipper (1994), Jones and Weingram (1996a,b), and Skinner (1996) provide evidence of a positive correlation between share turnover (leading to potentially higher Rule 10b-5 damages) and an increased risk of securities litigation. In the paper's dataset, as reported in Table 5, the one-year post-IPO turnover of stock in the secondary market is significantly higher for the suit firms only in the post-PSLRA period (at the 1% level). The difference between the pre and post-PSLRA differences in one-year post-IPO turnover between suit and match firms moreover is significant at the 5% level. Evidence exists therefore that turnover is particularly important in the decision to file suit during the post-PSLRA period.

Comparing the suit and matching firms based on aftermarket performance in the first-year after the IPO may introduce bias to the extent some suits are initiated in the first year after the IPO (and therefore the aftermarket return for suit firms may incorporate the negative effects of defending the lawsuit itself). As an alternative, a set of composite aftermarket performance measures is constructed using (a) the performance of the IPO suit sample from the time of the IPO to the day after the end of the class period and (b) the one-year performance for the matching firms. The mean filing time for the suits is approximately one year.<sup>30</sup> A comparison based on the one-year aftermarket performance of the matching firms therefore results in roughly the same mean period after the IPO for both samples. Panel B of Table 5 reports that the composite adjusted loss is greater for suit compared with matching firms in both the pre and post-PSLRA periods. Similarly, the composite minimum 1-day return is lower for the suit firms in the both periods. Neither of the difference between the pre and post-PSLRA differences in the composite return variables between suit and match firms is significant however.

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<sup>30</sup> The mean number of days between the IPO and the earliest filing of suit for the pre-PSLRA period is 338.3 days and 378.4 days for the post-PSLRA period (difference insignificant).

**Table 5: Comparison of Aftermarket Performance for Suit and Matching Firms****Panel A: First-Year Aftermarket Performance**

One-year post-IPO adjusted loss is the loss from the offering amount measured from the IPO date to one year after the IPO date adjusted based on the CRSP NYSE/AMEX/NASDAQ market index (in 1999 dollars). One-year minimum one-day return is the lowest one-day return from the IPO date to one year after the IPO date. The first-year turnover is calculated for the first-year after the IPO as follows:  $1 - (1 - \text{Turn})^{250}$ , where Turn is average daily trading volume divided by the number of shares outstanding. Comparison is between matching firms and those suit firms with a corresponding match.

	Suit Filed			Suit Filed		
	Pre-PSLRA	Match	p-value	Post-PSLRA	Match	p-value
One-Year post-IPO Adjusted Loss (Millions)	19.87	-16.50	0.0000	43.71	-0.23	0.0004
One-Year post-IPO Minimum 1-Day Return	-0.2782	-0.1424	0.0000	-0.3271	-0.1976	0.0000
First-Day Return	0.1098	0.1486	0.1580	0.2847	0.1788	0.0632 <sup>b</sup>
One-Year post-IPO Turnover	0.7814	0.7701	0.6558	0.8386	0.7469	0.0005 <sup>b</sup>

**Panel B: Composite Aftermarket Performance**

Composite adjusted loss is (a) the loss from the offering amount measured from the IPO date to the day after the end of the class period for suit firms adjusted based on the CRSP NYSE/AMEX/NASDAQ market index or (b) the loss from the offering amount measured from the IPO date to one year after the IPO date adjusted based on the CRSP NYSE/AMEX/NASDAQ market index for matching firms (all in 1999 dollars). Composite minimum one-day return is (a) the lowest one-day return at any time from the IPO date to the day after the end of the class period for suit firms or (b) the lowest one-day return from the IPO date to one year after the IPO date for matching firms. Comparison is between matching firms and those suit firms with a corresponding match.

	Suit Filed			Suit Filed		
	Pre-PSLRA	Match	p-value	Post-PSLRA	Match	p-value
Composite Adjusted Loss	25.36	-16.50	0.0000	45.29	-0.23	0.0004
Composite Minimum 1-Day Return	-0.2925	-0.1424	0.0000	-0.3552	-0.1979	0.0000

p-value is for a t-test of the difference between suit and match mean within the respective time period (pre or post-PSLRA).

**a** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 1% level

**b** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 5% level

**c** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 10% level

Table 6 compares the corporate governance structure of the lawsuit and matching firms measured immediately after the IPO. Firms with weaker corporate governance structures may give managers greater leeway to engage in fraud (and indeed, may rely on private class actions as an ex post mechanism to compensate for weak ex ante corporate governance (Romano, 1991)). The paper tracks several corporate governance variables including: (1) the number of directors on the board; (2) the fraction of the board consisting of non-“grey”, outside directors (a “grey” director is defined to include an outside director who is a founder of the company, a consultant or a person with some other non-director-related business relationship with the issuer, affiliated with the underwriter for the issuer; affiliated with the issuer’s law firm, a former employee of the issuer, a relative of a top officer of the issuer, or an affiliate of a large block shareholder (defined as greater than 30% ownership of the votes) of the issuer); (3) the presence of a classified board of directors; (4) whether the CEO is a separate position from the chairman of the board; (5) the presence of an audit committee without an insider or grey outside director on the committee; (6) the fraction of shares in the hands of the CEO; (7) the fraction of shares in the hands of the group of directors and officers; (8) the number of 10% block shareholders; (9) the fraction of shares in the hands of the largest shareholder of the firm; and (10) whether the CEO is the largest shareholder in the firm.

For suits filed in the pre-PSLRA period, the matching firms have a significantly higher fraction of firms with a separate chair and CEO (significant at the 1% level). Matching firms also have a higher incidence of independent audit committees (significant at the 10% level). For suits filed in the post-PSLRA period, none of these governance variables are significantly different between the suit and matching groups. Instead, outside directors of the matching firms hold more seats on other boards than suit firms in the post-PSLRA period (significant at the

**Table 6: Comparison of Corporate Governance at the time of the IPO for Suit and Matching Firms**

All corporate governance variables are measured immediately after the IPO. Grey directors are defined as those outside directors who is either (a) a founder of the company; (b) a consultant or a person with some other non-director-related business relationship with the issuer; (c) affiliated with the underwriter for the issuer; (d) affiliated with the issuer's law firm; (e) a former employee of the issuer; (f) a relative of a top officer of the issuer; (g) an affiliate of a large block shareholder (defined as greater than 30% ownership of the votes) of the issuer.

	Suit Filed Pre-PSLRA Sample Mean	Match Sample Mean	p-value	Suit Filed Post-PSLRA Sample Mean	Match Sample Mean	p-value
Number of directors on the board	5.97	6.19	0.3414	6.09	5.90	0.5344
Fraction of the board consisting of outsider (non-grey) directors	0.4019	0.4318	0.3356	0.3800	0.3908	0.7308
Presence a classified board	0.3830	0.4255	0.5547	0.5169	0.4382	0.2962
Fraction of issuers with a separate Chairman	0.2872	0.4894	0.0043	0.3258	0.2921	0.6288 <sup>b</sup>
Number of other board seats for the outside directors	4.61	4.65	0.9554	3.37	4.69	0.0978
Presence of an independent audit committee	0.3192	0.4362	0.0990	0.3146	0.3371	0.7508
Fraction of shares in the hands of the directors and officers (after the IPO)	0.4224	0.4155	0.8180	0.4734	0.4418	0.3330
Fraction of shares in the hands of the CEO (after the IPO)	0.1891	0.1455	0.1288	0.1840	0.1789	0.8663
Number of 10% block owners (after the IPO)	1.71	1.75	0.7953	1.67	1.60	0.6055
Fraction of shares in the hands of the largest shareholder (after the IPO)	0.2968	0.2620	0.1893	0.3165	0.3221	0.8588
CEO is the largest shareholder (after the IPO)	0.3871	0.3085	0.2616	0.5056	0.4270	0.2956

p-value is for a t-test of the difference between suit and match mean within the respective time period (pre or post-PSLRA).

**a** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 1% level

**b** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 5% level

**c** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 10% level

10% level). Moreover, only the difference in the pre and post-PSLRA differences in the fraction of firms with a separate chair between suit and match firms is significant (at the 5% level).

Table 7 compares the presence of “gatekeepers” for the suit and matching firms. Higher reputation underwriters lend part of their reputation to offerings, thereby signaling the quality of the offering (Carter and Manaster, 1990). Table 7 reports the average reputation ranking of the first three listed managing underwriters in the offering based on the Carter-Manaster ranking (updated for the 1990s by Jay Ritter).<sup>31</sup> In the pre and post-PSLRA periods, no significant difference exists in the Carter-Manaster ranking for suit and matching firms. Investors may also view IPO firms using a higher reputation accounting firm as posing a reduced risk of fraud. Table 7 reports that the fraction of suit and matching firms with a Big 6 Accounting firm is not significantly different in the pre-PSLRA period. Post-PSLRA, the matching firm sample has a weakly greater fraction of Big 6 accounting firms (significant at only the 20% level).<sup>32</sup>

Lastly, Table 8 compares the presence of other related actions dealing with potential fraud arising out of the IPO. Public announcements of accounting restatements (including inquiries expected to lead to a restatement) and SEC actions (investigations and enforcement actions) relating to disclosures made in the IPO were tracked for both suit and matching firms. Accounting restatements and SEC actions are obtained through searches of SEC filings, Nexis news stories and press releases, as well as SEC litigation releases. For both the suits filed pre and post-PSLRA, the incidence of accounting restatements and SEC actions is significantly higher for the suit compared with matching firms. As well, the incidence of restatements and SEC actions is higher for suits filed in the post-PSLRA period compared with suits filed pre-

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<sup>31</sup> The Jay Ritter version of the Carter-Manaster ranking is available at <http://bear.cba.ufl.edu/ritter/Rank.HTM> (last visited on January 13, 2004).

<sup>32</sup> A question exists whether Arthur Andersen performed differently from the other Big 6 Accounting Firms. Macey and Eisenberg (2003) however find no difference in the financial restatement activity for clients of Arthur Andersen compared with other major audit firms in a study covering 1997 to 2001.

**Table 7: Comparison of the Gatekeepers for Suit and Matching Firms**

Carter-Manaster Ranking for underwriters in the 1990s obtained from Professor Jay Ritter's web page located at <http://bear.cba.ufl.edu/ritter/Rank.HTM>. The auditor for the issuer at the time of the IPO is identified from Securities Data Corporation Comparison is between matching firms and those suit firms with a corresponding match.

	Suit Filed Pre-PSLRA Sample Mean	Match Sample Mean	p-value	Suit Filed Post-PSLRA Sample Mean	Match Sample Mean	p-value
Average CM Ranking for first 3 managing underwriters	7.11	7.35	0.3200	6.52	6.60	0.8241
Fraction of issuers with a Big 6 Accounting Firm	0.9575	0.9681	0.7019	0.8315	0.9091	0.1260

p-value is difference between suit and match means for respective time period (pre or post-PSLRA)

**a** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 1% level

**b** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 5% level

**c** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 10% level

**Table 8: Comparison of "Hard" evidence of Problems Pre and Post PSLRA**

Hard Evidence is defined to include the public announcement of either an accounting restatement (or an inquiry that is expected to lead to a restatement) or SEC action (investigation or enforcement) related to disclosures in the IPO. Pre-Filing Hard Evidence is defined as Hard Evidence where a public announcement occurs (a) prior to the earliest filing of the class action suit for suit firms or (b) within three years of the IPO for matching firms.

	Suit Filed Pre-PSLRA Sample Mean	Match Sample Mean	p-value	Suit Filed Post-PSLRA Sample Mean	Match Sample Mean	p-value
Accounting Restatement	0.1158	0.0319	0.0277	0.2697	0.0449	0.0000 <sup>b</sup>
SEC Action	0.1053	0.0000	0.0011	0.2697	0.0112	0.0000 <sup>a</sup>
Hard Evidence	0.1579	0.0319	0.0030	0.3483	0.0562	0.0000 <sup>b</sup>
Pre-Filing Hard Evidence	0.0737	0.0319	0.2016	0.3034	0.0562	0.0000 <sup>a</sup>

p-value is difference between suit and match means for respective time period (pre or post-PSLRA)

**a** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 1% level

**b** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 5% level

**c** = t-test of pre versus post-PSLRA shift in the difference between suit versus match firms is significant at the 10% level

PSLRA (significant at the 1% level). Note that suit firms have a significantly higher fraction of hard evidence compared with matching firms in both the pre and post-PSLRA periods. As well, suits filed post-PSLRA have a higher incidence of hard evidence compared with suits filed pre-PSLRA (difference significant at the 1% level).

To determine the importance of the presence of hard evidence prior to the filing of a private class action, the paper looked at suits with hard evidence of fraud where public announcement of the hard evidence occurred either (a) pre-filing for firms that faced a class action suit or (b) within the first three years after the IPO for the matching firms (termed “Pre-Filing Hard Evidence”). Table 8 reports that in the pre-PSLRA period, Pre-Filing Hard Evidence is only weakly different between the suit and matching firms (at the 20% level only). In contrast, in the post-PSLRA period, Pre-Filing Hard Evidence is significantly higher for suit compared with matching firms (at the 1% level). For all the other related action variables, the difference between the pre and post-PSLRA differences between suit and match firms is significant (at either the 1% or 5% level). Summary statistic evidence therefore exists that plaintiffs’ attorneys shifted their focus post-PSLRA toward cases involving hard evidence of fraud. To the extent hard evidence cases are easier to maintain under the PSLRA (both in terms of surviving a motion to dismiss and obtaining a higher expected settlement overall from bringing the suit), plaintiffs’ attorneys enjoy a higher expected return from these cases.

To provide a multivariate test of the size effect hypothesis, the paper estimates a series of probit models with a binary dependent variable equal to 1 for a suit firm and 0 for a matching firm (as reported in Table 9). Model 1 is estimated for the pre-PSLRA period only and includes an independent dummy variable for whether the one-year adjusted aftermarket loss is less than the median loss for pre-PSLRA suit firms (termed the “Low Loss Dummy”). Model 2 is

estimated for the post-PSLRA period only with the same Low Loss Dummy variable based on the median loss for suit firms in the pre-PSLRA period. Model 3 is estimated for the combined pre and post-PSLRA periods and includes interaction terms for Post-PSLRA x Pre-Filing Hard Evidence and Post-PSLRA x Low Loss Dummy to determine if plaintiffs' attorneys shifted their behavior after the enactment of the PSLRA. Model 4 is the same as Model 3 estimated only for suit and corresponding matching firms with a Rule 10b-5 allegation (those suits most affected by the PSLRA).

Each of the models includes a set of additional control variables. The Appendix provides definitions of the controls included in the models (and used throughout the paper). First, the models include *Offering Characteristic* variables (the offer price, the log of the market capitalization measured immediately after the IPO, and the secondary offering as a fraction of the total offering amount). Firms with higher market capitalizations, all other things being equal, may be greater targets for a class action to the extent they have more resources (and thus greater ability to pay out a settlement award). Firms with a large market capitalization may also have a greater likelihood of holding liability insurance, increasing the likelihood of a large settlement for plaintiffs' attorneys. Insiders and large pre-IPO shareholders may have a greater incentive to engage in fraud in offerings where the offering includes a larger fraction of secondary sales (and therefore face a higher probability of a securities fraud suit).<sup>33</sup>

Second, the models contain *One-Year Aftermarket Performance* variables including the one-year adjusted aftermarket loss in value from the IPO offering amount (adjusted based the

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<sup>33</sup> See Sale (1998) ("When a company 'goes public,' many of the securities offered for sale are owned by its officers and directors. Those same officers and directors often own additional securities and options to purchase securities which are not offered for sale, but which they expect will increase in value after the public offering. Although they possess considerable information about the company and its short-term and long-term prospects for the future, potential investors have access only to the information provided pursuant to the Securities Act or additional information the company chooses to disclose. In this way, IPOs are analogous to insider trading....").

CRSP market index and in 1999 dollars), the one-year post-IPO 1-day minimum return, the first-day return, and the one-year post-IPO turnover as defined in the Appendix. The amount of potential damage award from bringing a suit under Section 11 or Rule 10b-5 depends on the amount of losses from the IPO offering amount (for Section 11) as well as the aftermarket losses and trading volume (for Rule 10b-5).

Third, the models add *Gatekeeper* variables. These include a variable for whether a Big 6 Accounting firm is associated with the IPO firm and the average Carter-Manaster rating for the first three listed managing underwriters in the IPO (as defined in the Appendix). IPOs associated with higher reputation offerings are less likely to contain fraud. To the extent the merits matter, one would expect IPOs with high reputation gatekeepers should face a lower likelihood of suit.

Fourth, the models include *Corporate Governance* variables. These consist of the presence of a classified board, a separate chair of the board, the fraction of the board comprised of non-grey outside directors, the number of other board seats held by the outside directors, and the share holdings of the CEO (as defined in the Appendix). To the extent firms use the possibility of a securities class action as a substitute for corporate governance devices to protect shareholders (Romano, 1991), weaker corporate governance structures should correlate with a higher likelihood of suit.

Finally, to control for changes in the overall IPO environment (as well as the vulnerability of investors to fraud) over time, the total number of IPOs for the IPO year of the firm is included in the model (the “Hot Issues Proxy”). Greater numbers of IPOs in any particular year may indicate a “hot” IPO market during which investors are more prone to purchasing shares at inflated prices (Ritter, 1984; Ritter 1991), including for example the large increase in IPOs during the late 1990s. Firms interested in defrauding investors may find more

opportunity to do so during a hot market. The model also includes a control for the capacity constraint of plaintiffs' attorneys over time (the Attorney Time Constraint Proxy). Plaintiffs' attorneys already pursuing a large number of securities cases may be less likely to file a new securities antifraud action, all other things being equal. The Attorney Time Constraint Proxy is defined as the national average hourly billing rate for law firm partners with between 25 to 29 years of experience (as obtained from Altman Weil Inc's 2001 Survey of Law Firm Economics covering 399 U.S. law firms) averaged over the IPO year and the next two calendar years. The national average hourly billing rate for *all* law firm partners is assumed exogenous to the decision of securities litigation law firms to file suits in the securities context (and thus avoids endogeneity problems in including the Attorney Time Constraint Proxy in the decision to file suit models of the paper).

**Table 9: Probit Models For the Decision to File Suit**

The dependent variable is equal to 1 for a suit and 0 for a matching firm. Model 1 is for the pre-PSLRA period only. Model 2 is for the post-PSLRA period only. Model 3 is estimated for the combined pre and post-PSLRA periods with interaction terms for Post-PSLRA x Pre-Filing Hard Evidence and Post-PSLRA x Low Loss Dummy (based on the median one-year adj. loss for pre-PSLRA suit firms). Model 4 is for the combined pre and post-PSLRA periods estimated only for suit firms (and corresponding matches) with a Rule 10b-5 allegation. All models are estimated for the matching firms and those suit firms with a corresponding match.

Independent Variables	Model 1 Pre-PSLRA	Model 2 Post-PSLRA	Model 3 Both	Model 4 Both (Rule 10b-5)
Constant	-54.187* (-1.900)	-2.299 (-0.400)	8.530*** (2.480)	6.784 (1.370)
Offer Price	-0.068 (-1.340)	0.123** (2.090)	0.019 (0.570)	-0.097* (-1.870)
Log(Market Cap.)	0.325 (1.250)	-0.362 (-1.310)	-0.139 (-0.820)	0.333 (1.330)
One-year Post-IPO Adj. Loss	0.021*** (2.980)	0.005 (1.590)	0.009*** (2.790)	0.005 (1.540)
One-year Post-IPO 1-day Minimum Return	-6.634*** (-4.470)	-7.635*** (-5.300)	-6.901*** (-7.240)	-7.631*** (-5.420)

First-Day Post-IPO Return	0.292 (0.400)	0.096 (0.200)	0.444 (1.190)	0.749 (1.460)
One-year Post-IPO Turnover	1.281 (1.390)	1.970** (1.970)	0.938 (1.590)	1.796** (2.170)
Carter-Manaster	-0.082 (-0.790)	-0.132 (-1.070)	-0.067 (-0.970)	-0.072 (-0.740)
Big 6 Accounting firm Dummy	-0.294 (-0.410)	-0.882* (-1.680)	-0.411 (-1.070)	0.120 (0.180)
Classified Board Dummy	-0.091 (-0.350)	-0.023 (-0.080)	-0.122 (-0.660)	-0.096 (-0.350)
Separate Chair Dummy	-0.606** (-2.200)	-0.119 (-0.350)	-0.297 (-1.510)	-0.415 (-1.460)
Fraction of Non-Grey Outsiders on the Board	-1.035 (-1.570)	0.784 (1.010)	-0.475 (-1.040)	-0.429 (-0.590)
Number of Other Board Seats held by Outside Directors	0.019 (0.770)	-0.013 (-0.340)	0.014 (0.840)	0.029 (1.260)
CEO Share Holdings as Fraction of Outstanding Shares	-0.188 (-0.250)	0.084 (0.110)	0.170 (0.350)	0.526 (0.740)
Secondary offering as fraction of the total offering amount	-0.173 (-0.210)	0.725 (0.660)	-0.028 (-0.050)	0.045 (0.050)
Hot Issues Proxy (# of IPOs in the year of the issuer's IPO)	-0.004* (-1.710)	0.001 (1.010)	0.000 (-0.610)	0.000 (0.170)
Attorney Time Constraint Proxy (Average Partner Hourly Rate)	0.240* (1.870)	0.000 (-0.020)	-0.039*** (-2.640)	-0.042** (-1.970)
Pre-Filing Hard Evidence	0.439 (0.730)	2.440*** (5.010)	0.720 (1.250)	-0.055 (-0.070)
Low Loss Dummy	-0.342 (-0.820)	-1.381*** (-3.210)	-0.429 (-1.520)	-0.375 (-0.920)
Post-PSLRA x Pre-Filing Hard Evidence	.	.	1.635** (2.250)	3.257*** (3.230)
Post-PSLRA x Low Loss Dummy	.	.	-1.046*** (-3.080)	-1.638*** (-3.070)
N	186	171	357	202
Pseudo Adj. R2	0.429	0.528	0.421	0.478
Log Likelihood	-73.565	-55.890	-143.398	-73.083

z-statistics in parentheses. \*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level.

In all four models, the coefficients on the one-year post-IPO minimum 1-day return variables (representing the aftermarket performance of the IPO) are negative and significant at the 1% levels. A more negative minimum one-day return is strongly correlated with a higher likelihood of facing a securities fraud class action. In Models 1 (pre-PSLRA period only) and 3 (pooled pre- and post-PSLRA periods), the coefficients on the one-year adjusted aftermarket loss variables are significant at the 1% level. Both greater losses and a more negative minimum one-day return are correlated with higher potential damages from bringing a fraud suit and (correspondingly) a higher likelihood of facing a securities fraud class action.

Similarly, the coefficients on the post-IPO turnover in secondary market shares during the first-year after the IPO are significant in Models 2 (post-PSLRA period) and 4 (pooled pre- and post-PSLRA periods where a Rule 10b-5 claim was alleged). Greater secondary market turnover correlates with higher Rule 10b-5 damages, leading to a higher probability of suit involving a Rule 10b-5 claim.

In Models 3 and 4 (the pooled pre- and post-PSLRA models), the coefficients on the Attorney Time Constraint Proxy are negative and significant at the 1% and 5% levels respectively. The more time constrained are attorneys (as proxied through a higher hourly billing rate), the lower is the likelihood of a suit, all other things being equal. On the other hand, the coefficient on the Attorney Time Constraint Proxy is positive (but significant at only the 10% level) in Model 1 (for the pre-PSLRA period only). Prior to the PSLRA, more time constrained attorneys did not correlate with a lower likelihood of a suit.

Turning to the size effect hypothesis, note that the coefficient on the Low Loss Dummy is not statistically different from zero in Model 1 for the pre-PSLRA period only. In contrast, in Model 2 (post-PSLRA period only) observe that the coefficient on the Low Loss Dummy is both

negative and significant at the 1% level. Firms with a low aftermarket loss are much less likely to face a class action in the post-PSLRA period, consistent with the size effect hypothesis. Models 3 and 4 confirm this pattern for the combined pre and post-PSLRA periods. The coefficients on the Post-PSLRA x Low Loss Dummy interaction terms are negative and significant at the 1% level for Models 3 and 4, again consistent with the size effect hypothesis.

Strong evidence exists therefore that after the PSLRA, plaintiffs' attorneys shifted their focus toward higher value claims. Not all lower value claims are necessarily frivolous. Small offering issuers in particular will offer plaintiffs' attorneys only a low value claim due to the size of the offering. The lack of private class action enforcement against lower value claims may result in greater amounts of fraud among such companies.

## **5. Soft Evidence Hypothesis**

This section tests the soft evidence hypothesis that plaintiffs' attorneys in the post-PSLRA period shifted away from meritorious cases involving only soft evidence. As a proxy for meritorious suits, the paper follows JNP (2002) in viewing suits that result in dismissal or a low-value settlement (of \$2 million or less) as "nuisance" and suits that result in a settlement of over \$2 million as "non-nuisance". While not a perfect division between nuisance and non-nuisance suits, the \$2 million mark provides a rough approximation. To the extent defendants settle nuisance suits to avoid defense litigation costs as well as possible distraction on management and negative publicity, the maximum amount defendants will settle a nuisance claim typically will not exceed \$2 million.<sup>34</sup> While some meritorious suits may also fall under \$2 million in value,

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<sup>34</sup> JNP (2003) refer to the \$2 million amount as a "conservative estimate of defense costs". See also Joseph A. Grundfest, *Why Disimply*, 108 Harv. L. Rev. 727, 740-41 (1995) (contending that "a key statistic in the merits debate is the difference between the observed settlement amount and the amount a defendant would be willing to pay simply to avoid the costs of mounting a defense. A defendant always has an incentive to settle a case for an

those suits above \$2 million represent the more economically important fraud cases. Rather than capture all “legally” meritorious claims, the \$2 million cutoff treats as non-nuisance those claims that have legal merit and involve fraud resulting in substantial harm to investors.

The models of Table 9 provide evidence consistent with a shift among plaintiffs’ attorneys toward cases involving more “hard” evidence of fraud.<sup>35</sup> The coefficients on the Post-PSLRA x Pre-Filing Hard Evidence interaction terms are positive and significant in Models 3

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amount less than avoidable defense costs because any such settlement is less costly than pursuing the case to verdict and prevailing at trial. In contrast, a defendant never has an incentive to settle for an amount in excess of avoidable defense costs unless the defendant recognizes some probability, however small, that a jury will rule in plaintiffs’ favor. It follows that the difference between the observed settlement and the defendants’ avoidable litigation costs at the time of settlement (the “settlement differential”) is a critical signal of the defendants’ own perception of the merits of plaintiffs’ claims.”). In reviewing settlement data from other studies, Grundfest adopts the rule of thumb that settlements for less than a cutoff ranging from \$2.5 to \$1.5 million are nuisance in the sense that “the merits may not have mattered at all in the resolution of the litigation”. *Id.* at 742-43.

<sup>35</sup> As a check on robustness of the size effect and soft evidence hypothesis-related results from Table 9, four unreported variations were estimated based on Model 3 of Table 9 (the pooled pre- and post-PSLRA model):

First, a dummy variable for whether the issuer was incorporated in Delaware at the time of the IPO was added to the model. Delaware provides relatively generous shareholder rights to obtain corporate records, giving attorneys a back-door way of obtaining information even in the absence of discovery. The coefficient on the Delaware dummy is positive (indicating a greater likelihood of suit) but is statistically insignificant. In the variation, the coefficient on the Post-PSLRA x Composite Low Loss Dummy remains negative and significant at the 1% level. The coefficient on the Post-PSLRA x Pre-Filing Hard Evidence variable remains positive and significant at the 5% level.

Second, instead of the number of IPOs in the year of the issuer’s IPO (the “hot issues” proxy), Model 3 of Table 9 includes the average underpricing (e.g., the first-day raw return) for IPOs in the same year as the issuer’s IPO. During hot issues markets, investors may become overly optimistic about IPO performance, leading to unwarranted demand for IPO shares (and a correspondingly large first-day return over the IPO price). In model, the coefficient on the average underpricing variable is positive and significant at the 10% level, providing support for the notion that an environment more conducive to fraud (the hot issues market) will subsequently lead to a greater likelihood of fraud litigation. Even with this control, the coefficient on the Post-PSLRA x Composite Low Loss Dummy was negative and significant at the 1% level. The coefficient on the Post-PSLRA x Pre-Filing Hard Evidence variable remains positive and significant at the 5% level.

Third, the model was estimated with the one-year post-IPO unadjusted loss from the IPO offering amount and a low loss dummy based on the median unadjusted loss in the first-year for pre-PSLRA suit firms (as defined in the Appendix). The coefficient on the Post-PSLRA x Pre-Filing Hard Evidence variable was positive and significant at the 5% level. The coefficient on Post-PSLRA x Low Loss Dummy variable was negative and significant at the 1% level.

Fourth, the model was estimated with the one-year post-IPO composite loss from the IPO offering amount and a low loss dummy based on the median composite loss in the first-year for pre-PSLRA suit firms (as defined in the Appendix). Under this variation, the coefficient on the Post-PSLRA x Composite Low Loss Dummy was negative and significant at the 1% level. The coefficient on the Post-PSLRA x Pre-Filing Hard Evidence variable, however, was positive but only significant at the 20% level.

and 4 of Table 9 at the 5% and 1% confidence levels respectively. Pre-Filing Hard Evidence is significantly correlated with a higher risk of suit post-PSLRA (although not pre-PSLRA).<sup>36</sup>

Should we care about the shift toward hard evidence cases (and the implied shift away from more “soft” evidence cases not involving a pre-filing restatement or SEC enforcement action)? Where the soft evidence cases are uniformly frivolous then the shift to “hard” evidence unambiguously improves on the private class action regime. However not all soft evidence cases are frivolous. To test whether a shift in the *non-nuisance* soft evidence suits occurred from the pre to post-PSLRA period, the paper focuses on how non-nuisance suits in the *pre-PSLRA* period would have done in the post-PSLRA period according to the following methodology:

1. Non-nuisance suits filed in the pre-PSLRA period are identified based on receiving over a \$2 million settlement (JNP, 2002).
2. A probit model for the decision to file suit is estimated solely for the post-PSLRA period.
3. The estimated probit model is used to generate *predicted* probabilities of suit for the soft and hard non-nuisance suits filed pre and post-PSLRA.

To the extent plaintiffs’ attorneys file suit more frequently against cases providing a higher expected return, the predicted probability represents the “value” of the particular claim to the attorneys. If plaintiffs’ attorneys expect a lower return from soft evidence claims in the post-PSLRA period, they will shift away from soft evidence claims that otherwise may have faced a non-nuisance suit in the pre-PSLRA period (the soft evidence hypothesis). If such a shift

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<sup>36</sup> Implicit in this conclusion is the assumption that the range of types of fraud (e.g., soft evidence fraud v. hard evidence fraud) did not change significantly from the pre to post-PSLRA time periods. It is possible that managers simply did not commit soft evidence type fraud post-PSLRA, leading to the high correlation with hard evidence fraud suits in the post-PSLRA period. While the paper cannot rule out this possibility, it is unlikely that managers would have reduced their willingness to enrich themselves at the expense of investors absent some large exogenous shift in their incentives (e.g., a large movement between the two time periods toward executive compensation contracts that perfectly aligned the incentive of managers and investors, etc...). Nonetheless, it is possible that the underlying frequency of hard evidence-type fraud (e.g., accounting restatements) increased in the post-PSLRA period.

occurred, the predicted probabilities and thus, the expected values from litigation, for the non- nuisance soft evidence claims pre-PSLRA should be lower than for suits filed post-PSLRA.

**Table 10: Predicted Litigation Probability Comparison**

**Panel A: Mean Predicted Litigation Probability for Non-Nuisance Suits filed Pre and Post-PSLRA Based on Model Estimated for Suits Filed Post-PSLRA Only**

Model estimated for the post-PSLRA period only (based on Model 2 of Table 9).  
For the model: n=171; log likelihood = -55.890; Pseudo Adj. R<sup>2</sup> = 0.5284.

	Suit Filed Pre-PSLRA	Suit Filed Post-PSLRA	p-value
Soft Non-Nuisance	0.416	0.842	0.0000
Hard Non-Nuisance	0.832	0.810	0.8633

p-value is for a t-test of the difference between pre and post-PSLRA mean predicted values.

**Panel B: Mean Predicted Litigation Probability for Non-Nuisance Suits filed Pre and Post-PSLRA Based on Model Estimated for Rule 10b-5 Suits Filed Post-PSLRA Only**

Model estimated for suit firms involving a Rule 10b-5 claim and corresponding matching firms in the Post-PSLRA period only (based on Model 2 of Table 9). For the model: n=110; log likelihood = -28.481; Pseudo Adj. R<sup>2</sup> = 0.6264.

	Suit Filed Pre-PSLRA	Suit Filed Post-PSLRA	p-value
Soft Non-Nuisance	0.398	0.840	0.0000
Hard Non-Nuisance	0.999	0.839	0.1357

p-value is for a t-test of the difference between pre and post-PSLRA mean predicted values.

Panel A of Table 10 reports the results of the test for the soft evidence hypothesis. The probit model is based on Model 2 of Table 10 (for the decision to file suit in the post-PSLRA only period) with the same *Offering Characteristics*, *One-Year Aftermarket Performance*, *Gatekeeper*, *Corporate Governance* groups of variables (as defined in the Appendix) and a control for the total number of IPOs for the offering year as independent variables. Panel A reports the comparison of the mean predicted probability of suit (based on the post-PSLRA

model) for non-nuisance, soft evidence firms sued in the pre-PSLRA period and in the post-PSLRA period. Note that the mean predicted litigation probability is 41.6% for the pre-PSLRA non-nuisance, soft evidence suit firms and 84.2% for the post-PSLRA non-nuisance, soft evidence suit firms (difference significant at the 1% level). On the other hand, no statistical difference exists between the predicted probability of suit for the hard evidence, non-nuisance suits filed in the pre- and post-PSLRA periods.

As a check of the robustness of the results, Panel B of Table 10 estimates a probit model limited solely to post-PSLRA suits involving a Rule 10b-5 claim (and corresponding matching firms).<sup>37</sup> In Panel B, the predicted post-PSLRA probability of suit is once again significantly lower for pre-PSLRA non-nuisance soft evidence suits compared with the post-PSLRA period; in contrast no statistical difference exists in the predicted probability of suit for non-nuisance hard evidence suit firms in the pre and post-PSLRA periods.

The paper's results provides evidence that a significant fraction of non-nuisance, soft evidence suits that plaintiffs' attorneys brought in the pre-PSLRA period would not have been brought in the post-PSLRA period, consistent with the soft evidence hypothesis. Instead, plaintiffs' attorneys shifted their focus toward non-nuisance cases involving Pre-Filing Hard Evidence of fraud after the enactment of the PSLRA.

Consistent with the soft evidence hypothesis that plaintiffs' attorneys post-PSLRA shifted away from cases requiring lengthy and costly investigation toward cases with more obvious indicia of fraud, plaintiffs' attorneys in the post-PSLRA period also spent less time investigating

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<sup>37</sup> Unreported, the paper estimated a probit model with the *composite aftermarket performance* variables described in the Appendix. The results of the model and the comparison between the predicted probability of suit for pre and post-PSLRA non-nuisance claims is substantially the same as the tests in Panels A and B of Table 10. As an additional robustness check, Model 1 of Table 9 (for the *pre-PSLRA* period only) was used to generate predicted probabilities of suit. Using this alternative measure of the value of a suit, the same qualitative results as in Panels A and B of Table 10 were obtained.

pre-filing hard evidence of fraud prior to the filing of suit. The mean number of days between the first public announcement of hard evidence of fraud and the earliest filing of suit was 144.9 days in the pre-PSLRA period and only 48.4 days post-PSLRA. The t-test of the difference in means = 2.565 (prob=0.0149).

## 5.1 Determinants of Suit Outcomes

One explanation for the reluctance of plaintiffs' attorneys to pursue non-nuisance, soft evidence litigation in the post-PSLRA period is a possible shift in the expected outcomes of suits. More stringent pleading requirements with respect to scienter post-PSLRA, for example, may make it more difficult for plaintiffs' attorneys alleging a Rule 10b-5 claim to survive a motion to dismiss. The lack of discovery prior to the motion to dismiss may also make it difficult for plaintiffs' attorneys to identify and make specific allegations of material misstatements or omissions related to the IPO disclosures. The paper examines the probability of obtaining a non-nuisance outcome to test whether the PSLRA had a disproportionately negative impact on soft evidence, non-nuisance claims. Suits filed in the pre-PSLRA period but that were decided in the post-PSLRA are excluded to control for the possibility that the PSLRA may have indirectly affects how courts dealt with such cases (and thereby the outcomes).<sup>38</sup>

If the PSLRA decreased the likelihood for a suit to obtain a non-nuisance settlement award (with a corresponding increase in the likelihood of a dismissal or a low-value settlement), then plaintiffs' attorneys may rationally respond to the PSLRA with a reduction in the likelihood of filing suit. Table 11 provides summary statistics on suit outcomes. In Panel A (for the combined pre and post-PSLRA periods), note that 78.1% of suits reached settlement. The

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<sup>38</sup> For evidence of how a legal change may affect even cases not governed by the new regime see Alexander, Arlen & Cohen (1999) (finding that sentencing patterns after the adoption of the federal sentencing guidelines were different compared with prior to the guidelines even for cases not covered under the guidelines).

remainder of the suits resulted in some form of victory for defendants (dismissal, plaintiffs dropping the suit, or summary judgment for the defendants). None of the suits resulted in a judgment at trial. Panel B reports on outcomes separately for suits filed in the pre and post-PSLRA periods. Observe that in the post-PSLRA period 25.0% of suits resulted in a dismissal compared with only 13.0% pre-PSLRA (difference significant at the 10% level).

**Table 11: Lawsuit Outcomes**

**Panel A: Lawsuit Outcomes for Full Sample**

Outcome	Number of Suits	Percentage of Total
Settlement	139	78.1%
Dismissal	34	19.1%
Plaintiff Dropped Suit	3	1.7%
Summary Judgment for Defendant	2	1.1%
Total	178	100.0%

**Panel B: Comparison of Lawsuit Outcomes for Suits Filed Pre- and Post-PSLRA**

	Suit Filed Pre-PSLRA	Percentage of Total	Suit Filed Post-PSLRA	Percentage of Total
	Number of Suits		Number of Suits	
Settlement	45	83.3%	63	75.0%
Dismissal	7	13.0%	21	25.0%
Plaintiff Dropped Suit	2	3.7%	0	0.0%
Summary Judgment for Defendant	0	0.0%	0	0.0%
Total	54	100.0%	84	100.0%

t-test of difference in dismissal fraction Pre and Post-PSLRA = -1.722 (p=0.0873)  
Excludes suits filed Pre-PSLRA and resolved Post-PSLRA.

To examine of the likelihood of receiving a *non-nuisance* settlement, the paper estimates a series of probit models with a binary dependent variable equal to 1 if a suit receives a non-

nuisance and 0 otherwise (e.g., dismissal or low-value settlement) as reported in Table 12.<sup>39</sup> Model 1 of Table 12 is estimated solely for the pre-PSLRA period. Model 2 is estimated solely for the post-PSLRA period. Both Models 1 and 2 include a dummy variable for the presence of hard evidence of fraud to determine whether hard evidence suits are more likely to receive a non-nuisance outcome in either period. The models focus on instances where hard evidence of fraud relating to the IPO is publicly announced prior to the outcome date (rather than the suit filing date).

The non-nuisance probit models add several control variables. The models include *Gatekeeper* variables (for Big 6 Accounting Firm and the Carter-Manaster Ranking) and the *Corporate Governance* group of variables (Classified Board Dummy, Separate Chair Dummy, Fraction of Non-Grey Outsiders on the Board, Number of Other Board Seats Held by Outside Directors, and CEO Share Holdings as Fraction of Outstanding Shares) as defined in the Appendix. The models also contain a dummy variable for high technology industries (biotechnology, computer, and electronics)<sup>40</sup> traditionally with a high incidence of securities class actions to control for possible differences in settlements between high litigation and lower litigation risk industries (High Technology Dummy). The models include dummy variables for Milberg Weiss as a lead plaintiff counsel and litigation in a high securities volume jurisdiction (SDNY, ND Cal, CD Cal, and SD Cal). As the largest plaintiffs' attorney firm, Milberg Weiss may have more resources to bear (credibly) the high cash flow requirements of investigating potential fraud and pursuing litigation and therefore may cause defendants to settle more readily. Litigation in high volume jurisdictions may also face a different probability of a non-nuisance

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<sup>39</sup> Following Johnson, Nelson, and Pritchard (2002), a linear model using the actual settlement amount as the dependent variable is not estimated due to the lack of data on directors & officers insurance coverage (an important determinant of the actual settlement amount).

<sup>40</sup> These industries correspond to SIC codes 2833-2836, 3570-3577, and 7370-7379.

result to the extent experience gives judges greater sophistication in dismissing frivolous claims; judges in high volume securities jurisdictions may also have a greater incentive to clear their dockets, leading to more dismissals. All the models also include the secondary offering as fraction of the total offering amount. Insiders and large pre-IPO shareholders that sell their own holdings as part of the IPO may have a greater incentive to engage in fraud (and therefore face a higher likelihood of a non-nuisance outcome in a subsequent securities class action).

**Table 12: Non-Nuisance Outcomes**

**Panel A: Non-Nuisance Outcome Probit Model**

The dependent variable is equal to 1 for a non-nuisance outcome and 0 for a nuisance outcome (e.g., dismissal or low-value settlement of \$2 million or less measured in 1999 dollars). Model 1 is for the pre-PSLRA period. Model 2 is for the post-PSLRA period.

Independent Variables	Model 1 Pre-PSLRA	Model 2 Post-PSLRA
Constant	-0.771 (-0.690)	-3.198*** (-3.130)
High Technology Industry Dummy	-0.372 (-0.790)	0.271 (0.640)
Big 6 Accounting firm Dummy	.	-0.032 (-0.050)
Carter-Manaster	0.296*** (2.620)	0.263** (2.380)
Classified Board Dummy	-0.187 (-0.490)	-0.074 (-0.180)
Separate Chair Dummy	-0.674 (-1.480)	0.716 (1.510)
Fraction of Non-Grey Outsiders on the Board	-1.777 (-1.580)	0.935 (0.940)
Number of Other Board Seats held by Outside Directors	0.049 (1.220)	0.068 (1.080)
CEO Share Holdings as Fraction of Outstanding Shares	-0.461 (-0.340)	0.685 (0.610)
Dummy for SDNY, SD Cal, ND Cal, CD Cal Court	-1.335** (-2.440)	-0.640 (-1.620)

Dummy for Milberg Weiss	1.762*** (3.100)	-0.081 (-0.210)
Secondary offering as fraction of the total offering amount	0.841 (0.620)	3.907** (2.470)
Hard Evidence dummy	-0.365 (-0.660)	1.626*** (3.090)
N	70	75
Adj. R2	0.281	0.291
Log Likelihood	-32.382	-36.480

z-statistics in parenthesis. Excludes suits filed pre-PSLRA and resolved post-PSLRA.

\*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level.

### Panel B: Actual and Predicted Non-Nuisance Fraction for Pre-PSLRA Suits (Predictions Based on Model Estimated for Suits Filed in the Post-PSLRA Period Only)

Predicted fraction of non-nuisance suits is based on Model 2 of Panel A (estimated for the post-PSLRA period only). HECKPROB Corrected refers to the predicted fraction of non-nuisance suits based on a Heckman two-stage model (estimated with the Stata HECKPROB procedure). Stage 1 is a probit model for the decision to file suit in the post-PSLRA period (based on Model 2 of Table 9). Stage 2 is a probit model for a settlement outcome above the Dollar Cutoff value based on Model 2 of Panel A (estimated for the post-PSLRA period). The HECKPROB Corrected Predicted Fraction is conditional on the firm facing a class action lawsuit based on the IPO and is equal to the mean of Prob(Outcome above the Dollar Cutoff = yes & Suit Filed = yes) / Prob(Suit Filed = yes)

	N	Actual pre-PSLRA fraction of non-nuisance outcomes	Predicted post-PSLRA fraction of non-nuisance outcomes	p-value
Soft Evidence Pre-PSLRA Suits	57	0.649	0.458	0.0067
Soft Evidence Pre-PSLRA Suits (HECKPROB Corrected)	56	0.661	0.243	0.0000
Hard Evidence Pre-PSLRA Suits	13	0.692	0.841	0.2722
Hard Evidence Pre-PSLRA Suits (HECKPROB Corrected)	13	0.692	0.679	0.9390

p-value is for a t-test of the difference between pre-PSLRA actual and pre-PSLRA predicted mean values.

From Panel A of Table 12 observe that the Hard Evidence dummy variable is not significant in Model 1 for the pre-PSLRA period but is both positive and significant in Model 2 for the post-PSLRA period (at the 1% level). The likelihood of a non-nuisance settlement is

significantly higher for Hard Evidence claims in the post-PSLRA period. Also observe that the coefficient on the secondary offering as fraction of the total offering amount variable is positive and significant at the 5% in Model 2. Greater insider and large pre-IPO shareholder secondary sales of shares in the IPO correlate with a higher likelihood of a non-nuisance outcome in a subsequent securities class action in the post-PSLRA period.<sup>41</sup>

A selection bias may exist in the probit models of suit outcomes to the extent unobserved factors that determine what suits are filed among the entire set of IPOs also affect the outcome of suit. The paper makes a Heckman correction (using the STATA Heckprob procedure) with a first-stage probit model for whether an IPO firm faces a suit (based on Model 2 of Table 9) and the second stage probit based on the non-nuisance outcome model for the post-PSLRA period (Model 2 of Table 12).<sup>42</sup> Unreported, the Heckman results for the second-stage non-nuisance outcome model are qualitatively similar to the results in Model 2 of Table 12.

The fact that hard evidence claims compared with soft evidence claims fair better in the post-PSLRA period does not necessarily support the soft evidence hypothesis. Some soft evidence claims may be frivolous. To determine the impact of the PSLRA on *non-nuisance*, soft evidence claims, the paper focuses solely on suits in the pre-PSLRA period. If the PSLRA imposed greater burdens on meritorious litigation, the paper predicts that a significantly greater fraction of soft evidence claims in the pre-PSLRA period would have received a dismissal or

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<sup>41</sup> As an additional test, the paper compared the actual fraction of non-nuisance outcomes and the predicted fraction (based on the post-PSLRA only model for outcomes) solely for suits with a Rule 10b-5 claim (e.g., the Section 11-only suits were dropped). For this truncated sample, the actual fraction of non-nuisance outcomes for pre-PSLRA suits was 0.712 and the predicted fraction in the post-PSLRA period was 0.545 (p-value of difference = 0.0247).

<sup>42</sup> The *Offering Characteristic* and *One-Year Aftermarket Performance* independent variables (see Appendix) of the first-stage decision-to-file probit model are assumed correlated with the probability of a suit but uncorrelated with a non-nuisance outcome. While the decision on the part of plaintiffs' attorneys to bring suit may turn on the size of potential damages (correlated with *Offering Characteristic* and *One-Year Aftermarket Performance* variables), whether a suit is dismissed or receives a low-value settlement depends instead on the merits of the fraud claim.

low-value settlement had they been brought in the post-PSLRA period. To determine how soft and hard evidence claims in the pre-PSLRA period would have done in the post-PSLRA period, the following methodology is employed:

1. The predicted probability of a non-nuisance outcome is obtained using the post-PSLRA only model (Model 2 in Panel A of Table 12).
2. The predicted probability of a non-nuisance outcome post-PSLRA is compared with the actual fraction of non-nuisance suits in the pre-PSLRA period.

Panel B reports that 64.9% of the soft evidence suits in the pre-PSLRA period resulted in a non-nuisance outcome. The predicted fraction of non-nuisance outcomes based on the post-PSLRA model for soft evidence claims however is only 45.8% (difference significant at the 1% level). Using the Heckman correction, the predicted fraction of non-nuisance outcomes (conditional on the filing of suit) is 24.3% (difference significant at the 1% level). A significant fraction of soft evidence claims that received a non-nuisance outcome pre-PSLRA therefore would have received a dismissal or low-value settlement in the post-PSLRA period. In contrast, the actual fraction of hard evidence cases that resulted in a non-nuisance settlement in the pre-PSLRA period was 69.2%. The predicted fraction based on the post-PSLRA model is higher at 84.1% (difference statistically insignificant). Using the Heckman correction, the predicted fraction of non-nuisance outcomes for the hard evidence pre-PSLRA suits (conditional on a filing of suit in the post-PSLRA period) is 67.9% (difference again statistically insignificant from the actual fraction of non-nuisance outcomes). These results are consistent with the hypothesis that post-PSLRA, soft evidence (but not hard evidence) non-nuisance claims faced a significantly higher probability of receiving a dismissal or low-value settlement.<sup>43</sup>

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<sup>43</sup> The paper does not directly test the magnitude of settlement amounts (aside from whether a non-nuisance settlement is obtained). Examining settlements amounts has at least two potential problems. First, the presence of

The \$2 million cutoff for non-nuisance litigation used in the above suit outcome model is somewhat arbitrary. As a robustness check, the paper estimated a series of models for a high-value settlement outcome (compared with lower value settlements and dismissals) for the post-PSLRA-only period using a range of cutoff settlement amounts between high-value and low-value outcomes (from \$1 million to \$5 million in 1999 dollars). The same Heckman correction described above is made for unobserved factors affecting the decision to file suit that may in turn influence the outcome model. The actual fraction of suits soft evidence suits in the pre-PSLRA period that resulted in an outcome above the given cutoff and the predicted post-PSLRA fraction conditional on a lawsuit are reported in Table 13 below.

**Table 13: Robustness Tests on the Actual and Predicted Fraction of Pre-PSLRA Suits Above A Dollar Cutoff Settlement Amount**

Predicted fraction of non-nuisance suits is based on a Heckman two-stage model (estimated with the Stata HECKPROB procedure). Stage 1 is a probit model for the decision to file suit in the post-PSLRA period (based on Model 2 of Table 9). Stage 2 is a probit model for a settlement outcome above the Dollar Cutoff value based on Model 2 of Table 13 Panel A (estimated for the post-PSLRA period). The Predicted Fraction is conditional on the firm facing a class action lawsuit based on the IPO and is equal to the mean of Prob(Outcome above the Dollar Cutoff = yes & Suit Filed = yes) / Prob(Suit Filed = yes)

Dollar Cutoff (1999 Dollars)	N	Actual fraction of outcomes above the Dollar Cutoff for Pre-PSLRA Soft Evidence Suits	Predicted post- PSLRA fraction of outcomes above the Dollar Cutoff (HECKPROB corrected)	p-value
>\$1 million	56	0.750	0.309	0.0000
>\$2 million	56	0.661	0.243	0.0000
>\$3 million	56	0.464	0.183	0.0003
>\$4 million	56	0.286	0.357	0.3303
>\$5 million	56	0.214	0.218	0.9482

p-value is for a t-test of the difference between pre-PSLRA actual and pre-PSLRA predicted mean values.

liability insurance for firms is often unobservable, leading to an omitted variables bias in the tests (JNP (2003)). Second, a selection bias may exist in that plaintiffs' attorneys only file cases they believe will generate a high enough settlement to make the case worthwhile.

Observe from Table 13 that for cutoff values ranging from \$1 million to \$3 million, the predicted fraction of outcomes above the cutoff value (conditional on the filing of a suit post-PSLRA) is significantly smaller than the actual fraction of outcomes for soft evidence suits in the pre-PSLRA period (significant at the 1% levels). At the \$4 million and \$5 million cutoffs, the predicted fraction of outcomes above the cutoff is not statistically different from the actual fraction. The results from Table 13 are consistent with the PSLRA having the largest post-PSLRA negative impact on outcomes for suits that received a settlement of \$4 million or less in the pre-PSLRA period. Of the Pre-PSLRA soft evidence suits, 37.5% settled between \$2 and \$4 million dollars. Two caveats nonetheless are important. First, some of the suits in the range from \$2 to \$4 million may contain frivolous suits (although at a reduced proportion compared with suits under \$2 million). Second, higher value soft evidence suits (above \$4 million) do not experience a reduced probability of achieving a high-value settlement outcome.

## **6. Conclusion**

Congress enacted the PSLRA primarily to reduce the incidence of nuisance suits. An easy way to deter all nuisance suits would be simply to remove private causes of action for securities fraud. Removing private causes of action, however, also eliminates all meritorious securities fraud class actions. To the extent the PSLRA works like a “magic bullet” in removing only nuisance litigation, policymakers do not have to face such a tradeoff in assessing the value of the PSLRA. Earlier articles, including JNP (2003), address solely whether the PSLRA increased the incidence of hard evidence cases of fraud without examining the impact of the PSLRA on other potentially meritorious claims.

Focusing on meritorious litigation, this paper tests whether the PSLRA selectively eliminated only nuisance litigation. The paper reports evidence that the PSLRA had at least two important negative impacts on non-nuisance litigation. First, companies engaged in smaller offerings or with a lower secondary market volume (and therefore reduced potential damage awards) are significantly less likely to find themselves the target of a securities class action in the post-PSLRA period. To the extent such companies are not immune to engaging in fraud, the lack of any significant class action activity may require an increase in public enforcement.<sup>44</sup>

Second, companies engaged in fraud where no hard evidence of the fraud is publicly announced pre-filing of a suit are significantly less likely to face a private securities class action in the post-PSLRA period. The PSLRA caused plaintiffs' attorneys to shift their attention to the subset of fraud cases where the presence of hard evidence made it easier for such attorneys to meet enhanced pleading requirements under the PSLRA absent discovery. The presence of hard evidence also makes it more likely that the plaintiffs' attorneys will recover a larger amount of money (through a non-nuisance settlement), offsetting the higher costs imposed on plaintiffs' attorneys through the PSLRA's lead plaintiff provision, court review for sanctions, and restriction on attorneys' fees to "reasonable" levels.

The empirical observation that the PSLRA reduced the incidence of nuisance suit litigation after the enactment of the PSLRA therefore is only part of the required analysis in assessing the welfare implication of the PSLRA. The PSLRA also worked to reduce more meritorious litigation, particularly aimed at smaller companies and companies engaged in fraud involving only soft evidence. The PSLRA operated less like a selective deterrence against fraud

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<sup>44</sup> On a related note, evidence exists that the level of funding for SEC enforcement activities did not keep pace with the growth in securities market activity in the 1990s. See Joel Seligman, *The Transformation of Wall Street: A History of the Securities and Exchange Commission and Modern Corporate Finance* 630 (3d ed. Aspen Publishing, 2003) (reporting that during most of the 1990s the SEC's budget grew at 6 percent per year while during "the 1990s' bull market, virtually every significant measure of securities activity grew far faster.").

and more as a simple tax on all litigation (including meritorious suits). Perversely, the PSLRA may have increased the ability of such firms to engage in fraud consistent with Lerach (2001)'s view that fraud increased after the PSLRA. Whether the PSLRA in fact raised overall investor welfare turns on an assessment of the relative magnitude of the benefit from reducing nuisance suits against the cost of lowered deterrence against fraud.

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## Appendix: Definitions of Frequently Used Groups of Variables

### Offering Characteristics

Variable Name	Definition
Offer Price	IPO Offer Price
Log(Market Cap.)	Log of the market capitalization of the IPO firm immediately after the IPO (using the IPO Offering Price) (1999 dollars)
Secondary offering as fraction of the total offering amount	Secondary Offering Amount / Total Offering Amount

### One-Year Aftermarket Performance

Variable Name	Definition
One-year Post-IPO Adj. Loss	Aftermarket loss in the first-year after the IPO adjusted for the CRSP NYSE/AMEX/NASDAQ market index (1999 dollars)
One-year Post-IPO 1-day Minimum Return	Lowest one-day raw return during the first-year after the IPO
First-Day Return	The raw return for the first-day after the IPO
One-year Post-IPO Turnover	The first-year turnover is calculated for the first-year after the IPO as follows: $1 - (1 - \text{Turn})^{250}$ , where Turn is average daily trading volume divided by the number of shares outstanding.
Low Loss Dummy	Dummy = 1 if the one-year post-IPO adj. loss is less than the median one-year adjusted loss for pre-PSLRA suit firms

### Composite Aftermarket Performance

Variable Name	Definition
Composite Post-IPO Adj. Loss	Either (a) the Class Period Post-IPO Adj. Loss for IPO suit firms or (b) the One-Year Post-IPO Adj. Loss for Matching firms (1999 dollars)
Composite Post-IPO 1-day Minimum Return	Either (a) the Class Period Post-IPO 1-day Minimum Return for IPO suit firms or (b) the One-Year Post-IPO 1-day Minimum Return for Matching firms
First-Day Return	The raw return for the first-day after the IPO
One-year Post-IPO Turnover	The first-year turnover is calculated for the first-year after the as follows: $1 - (1 - \text{Turn})^{250}$ , where Turn is average daily trading volume divided by the number of shares outstanding.
Low Composite Loss Dummy	Dummy = 1 if the composite post-IPO adj. loss is less than the median loss for pre-PSLRA suit firms

## Gatekeeper

Variable Name	Definition
Carter-Manaster	Carter-Manaster average ranking for the first 3 listed manager underwriters for the IPO (using Jay Ritter's updated 1990s Carter-Manaster rankings)
Big 6 Accounting Firm Dummy	Dummy variable if the IPO firm is associated with a Big 6 Auditor

## Corporate Governance Variables

Variable Name	Definition
Classified Board Dummy	Dummy variable for the presence of a classified board
Separate Chair Dummy	Dummy variable for the presence of a separate chair of the board
Fraction of Non-Grey Outsiders on the Board	Fraction of outside directors on the board who are not grey directors (e.g., founders, consultants, former employees, affiliates with a shareholder with over 30% of the outstanding shares/votes, directors with other business relationship with the firm)
Number of Other Board Seats Held by Outside Directors	Number of board seats of other companies held by outside directors as identified in the biography of the outside directors
CEO Share Holdings as Fraction of Outstanding Shares	Fraction of outstanding shares in the hands of the CEO