Management Science

Publication details, including instructions for authors and subscription information:
http://pubsonline.informs.org

Large Market Declines and Securities Litigation: Implications for Disclosing Adverse Earnings News

Dain C. Donelson, Justin J. Hopkins

To cite this article:
Dain C. Donelson, Justin J. Hopkins (2016) Large Market Declines and Securities Litigation: Implications for Disclosing Adverse Earnings News. Management Science 62(11):3183-3198. http://dx.doi.org/10.1287/mnsc.2015.2306

MANAGEMENT SCIENCE
Vol. 62, No. 11, November 2016, pp. 3183–3198
ISSN 0025-1909 (print) | ISSN 1526-5501 (online)

https://doi.org/10.1287/mnsc.2015.2306

Large Market Declines and Securities Litigation: Implications for Disclosing Adverse Earnings News

Dain C. Donelson
McCombs School of Business, University of Texas at Austin, Austin, Texas 78712, dain.donelson@mccombs.utexas.edu
Justin J. Hopkins
Darden Graduate School of Business, University of Virginia, Charlottesville, Virginia 22906, hopkins@virginia.edu

This study finds that large marketwide declines in stock prices are associated with higher litigation incidence and settlements even though marketwide events are legally irrelevant. The probability of litigation nearly doubles (from 0.29% to 0.55%) and the amount of settlements also doubles (from $5.0 million to $10.1 million) when earnings disclosures occur during a large market decline, even after controlling for the firm's market-adjusted return. Furthermore, judges with (without) specialized experience in securities litigation are more (less) likely to dismiss cases triggered by disclosures during large market declines. This pattern is consistent with experienced judges recognizing and dismissing weaker cases. Finally, managers are less likely to disclose adverse news at the end of trading days with large market declines. Although we cannot definitively identify the motive behind this pattern, it is consistent with managers recognizing increased litigation risk during large market declines.

Keywords: accounting; disclosure; securities litigation; judicial–legal
History: Received October 11, 2014; accepted July 17, 2015, by Mary Barth, accounting. Published online in *Articles in Advance* February 8, 2016.

1. Introduction

Litigation costs are an important issue for managers and academics because plaintiffs file hundreds of securities class actions each year, leading to billions in settlements and associated defense fees (Cornerstone Research 2012). Academic studies focus on firm-specific indicators of litigation risk, such as firm size and stock return characteristics (Kim and Skinner 2012), because marketwide events are legally irrelevant in securities fraud class actions. In these cases, plaintiffs' losses must be caused by the defendant's wrongdoing, a requirement known as "loss causation" (e.g., Ferrell and Saha 2007). Thus, only the defendant firm's market-adjusted return should be used in determining the outcome of the case. However, market returns may affect litigation risk if they influence how judges and jurors view cases. This study explores whether adverse marketwide events (as measured by large market declines) are associated with higher litigation costs despite legal standards requiring judges and juries to use market-adjusted returns.

Plaintiffs' attorneys select securities fraud cases based on the expected recovery. The expected recovery is a function of the probability of recovery (the ability to show fraud occurred) and the expected settlement, which is based on damages (Shavell 1982). Thus, a firm that admits to fraud might not face litigation even though there is nearly a 100% probability of recovery if the prospective damages are small. Conversely, another firm might face litigation when the ability to show fraud is relatively low if the prospective damages are very high. Thus, plaintiffs' attorneys have incentives to "gamble" by taking cases where the likelihood of recovery is relatively low when the potential payoff is high.

Similarly, a large market decline driven by macroeconomic news may encourage plaintiffs' lawyers to file cases by increasing the *perceived* loss associated with a disclosure. In particular, firms will show steeper declines in their total (raw) returns during large market declines. However, only the market-adjusted return is the proper basis for determining loss causation and damages.[1] Thus, plaintiffs' lawyers may be more likely to file cases when markets decline significantly if they believe that judges and/or juries will incorrectly apply the law by failing to adjust for market returns.

As a simple example, consider two firms that announce equally bad news at market open on different days. Each announcement causes an immediate 15% decline in the firm's stock price. No other significant news is revealed the day the first firm discloses and the market closes flat. The first firm thus has

[1] We refer to three types of firm-level returns: (1) the raw (total) return, which includes (2) the market return and (3) the market-adjusted (abnormal) return. "Large market decline" refers to market returns in the lowest decile.

raw and market-adjusted returns of −15%. The second firm discloses on a different day when unrelated macroeconomic news pushes its stock price down an additional 5%. The second firm has a raw return of −20%, even though only the market-adjusted return of −15% (identical to the first firm) is attributable to its own bad news. Although the law is clear that only the −15% return should be considered for each firm, with all else equal, plaintiffs' attorneys might be more likely to sue the second firm due to the potential perception of higher damages by naïve parties (such as jurors).

In fact, plaintiffs' lawyers regularly quote raw returns as if the firm's disclosure drove the entire decline. This suggests that plaintiffs' lawyers believe that the perception of additional "bad news" from other macroeconomic events will influence defendants, judges, and potential jurors. The higher *perceived* damages associated with a large market decline may make it worthwhile for plaintiffs' lawyers to file a case that is weaker on other dimensions, similar to a gamble with a low probability but high payoff. In fact, one plaintiffs' attorney recounted the following argument made during a settlement negotiation, consistent with the use of just such a strategy: "Listen, I'll go up in front of a jury and . . . show $2 billion in investment loss that you are going to have to explain why it is really only $200 million" (Baker and Griffith 2010, p. 165).

We first examine the relation between large market declines and litigation incidence for both earnings announcements and earnings forecasts. Although there is no legal requirement to do so, earnings announcements regularly occur on dates set in advance, and investors penalize firms that delay their announcements (Bagnoli et al. 2002).[2] By 1998, less than 10% of firms delayed their announcements past their self-reported dates (Bagnoli et al. 2002). Therefore, the exact timing of earnings announcements is less likely to be influenced by the news in the disclosure (e.g., disclosing adverse news after hours to avoid market attention) than earnings forecasts. In fact, Doyle and Magilke (2009) find that managers do not strategically schedule adverse earnings announcements after hours.

On the other hand, earnings forecasts are issued at management's discretion, and evidence suggests that managers strategically time these disclosures (e.g., Doyle and Magilke 2016). This increased discretion provides benefits and drawbacks for our tests. Since managers have flexibility in issuing forecasts, earnings forecasts allow us to test whether managers avoid disclosing adverse news on days with large market declines. However, if managers disclose bad news (which drives litigation) on days when the market declines for unrelated reasons, then tests would draw an incorrect inference that market declines increase litigation risk. This pattern could occur if firms tend to issue earnings warnings during times with bad macroeconomic news.

We thus separately link samples of more than 158,000 earnings announcements and more than 16,000 earnings forecasts with approximately 1,000 lawsuits. Overall, we find a close association between market declines and litigation for both earnings announcements and earnings forecasts. In fact, 0.55% of earnings disclosures occurring on days with large market declines lead to litigation, compared to only 0.29% of the announcements on other days, an increase of approximately 60% of the base rate of litigation. This relation holds in multivariate settings, and using firm, year, and industry fixed effects. We also control for the level of analyst surprise and market-adjusted returns to ensure results are not driven by more adverse disclosures being issued on days with large market declines. Similarly, we find no evidence that disclosures occurring on days with large market declines contain more adverse news than those occurring on other days. Overall, these results suggest that market returns are associated with litigation, apart from the information in the disclosure.

We next examine the relation between large market declines and lawsuit outcomes. Conditional on the case settling, lawsuits involving large market declines settle for $5.0 million more than other suits, a 94% increase over the median. In the full sample, we find no significant relation between judicial decisions on the motion to dismiss and large market declines. However, judges with specialized experience in securities litigation (defined as judges in the top quartile in the number of securities litigation cases they handle) are more likely to dismiss cases with large market declines. This result is consistent with judges with specialized experience recognizing that plaintiffs "gamble" and file weaker cases when perceived damages (and thus settlements) are large. In contrast, judges without specialized experience are *less* likely to dismiss cases with large market declines, which is potentially consistent with the raw, rather than the market-adjusted, damages amount influencing their decision. Overall, these results suggest that the plaintiffs' "gamble" pays off only when they draw a judge without specialized experience.

We then examine whether managers avoid issuing adverse earnings forecasts during large market declines because the timing of these disclosures is more flexible than earnings announcements. If so, we should observe abnormally low levels of adverse forecasts near the end of trading days *with* large market declines because managers would want to avoid disclosing during a

[2] So and Wang (2014) use historical earnings announcement patterns to predict expected announcement dates and show that short-term return reversals (a proxy for the expected returns demanded by market makers to provide liquidity) are strongest when the earnings announcement occurs on their calculated "expected" date. This is consistent with earnings announcements occurring at very predictable times, even with this simple measure.

large market decline. This would limit the likelihood that the adverse news would be incorporated into price contemporaneously with a large market decline. On the other hand, executives may not implement this strategy because they are unaware of the link between large market declines and litigation. We find that adverse management earnings forecasts are less likely to be issued near the end of the trading day on days with large market declines, consistent with managers' tendency to avoid disclosing bad news on such days.

For completeness, we also examine the alternative strategy of disclosing adverse news after hours. Some studies suggest that managers are more likely to issue adverse disclosures after hours (Baginski et al. 1995, Doyle and Magilke 2016). These strategies are mutually exclusive, because avoiding a large market decline requires disclosure near the end of the trading day. Disclosing after hours, on the other hand, leaves the firm exposed to a full day of potentially negative macroeconomic news. Overall, we find no evidence that disclosing after hours reduces the risk of litigation to counteract the risk of adverse market news on the next trading day when the disclosure will be impounded into price. That said, despite the evidence of a link between market returns and litigation, we cannot conclude that managers should always avoid after-hours disclosures because disclosure strategies are highly contextual. The evidence in this study provides a more complete understanding of these potential disclosure strategies.

This study's main contribution is documenting the importance of market returns on litigation costs. This evidence provides firms with an additional factor to consider in disclosure decisions designed to reduce litigation costs and complements prior literature that shows the more timely revelation of bad news reduces litigation costs (e.g., Skinner 1997, Field et al. 2005, Donelson et al. 2012). In addition, the link between market declines and litigation costs suggests that legally irrelevant information affects case outcomes.

2. Institutional Background and Related Literature

2.1. Securities Litigation Background

In the early 1990s, firms claimed that they were subject to securities litigation for any large stock price drop, even if unrelated to fraud (e.g., Johnson et al. 2001). To limit frivolous litigation, Congress passed the Private Securities Litigation Reform Act of 1995 (PSLRA), which made securities litigation more difficult for plaintiffs by, for example, delaying the discovery process until the judge rules against dismissal. The PSLRA requires that plaintiffs make specific factual allegations that yield a "strong inference" of intent (scienter). The dismissal decision is based on the facts in the complaint and effectively determines whether the plaintiffs will recover because securities class actions almost always settle if allowed to proceed (e.g., Johnson et al. 2007). The dismissal decision is thus very important and essentially determines whether the plaintiffs will recover anything in a case.

The most common allegations in these suits involve violations of Rule 10b-5, which requires plaintiffs to prove "(1) a material misrepresentation or omission by the defendant; (2) scienter; (3) a connection between the misrepresentation or omission and the purchase or sale of a security; (4) reliance upon the misrepresentation or omission; (5) economic loss; and (6) loss causation" (*Stoneridge Inv. Partners v. Scientific-Atl.*, 128 S. Ct. 761, 768 (2008)). Loss causation and damages are highly related, as we discuss next.

2.2. Loss Causation and Measurement of Damages

Alleging loss causation and establishing accurate damages can be difficult even with substantial investor losses because firm-specific information must be separated from market information. This is because the antifraud provisions of U.S. securities laws are designed to compensate investors only for losses directly caused by the material misrepresentation or omission. As the Supreme Court noted in *Dura Pharm., Inc v. Broudo* (544 U.S. 336, 345 (2005)), the securities laws are designed "not to provide investors with broad insurance against market losses, but to protect them against those economic losses that misrepresentations actually cause."

The loss causation requirement is thus an important consideration for plaintiffs in case selection. The most common method to establish loss causation is to show that a firm suffered a large stock-price decline immediately following the release of bad news. In addition, plaintiffs must show that the stock price drop was company-specific rather than due to market factors. Damages are also calculated based on market-adjusted returns (e.g., Ferrell and Saha 2007).

A recent case helps illustrate the loss causation requirement. In *Lentell v. Merrill Lynch & Co.* (396 F.3d 161 (2d Cir. 2005)), Merrill Lynch analysts "hyped" Internet stocks that they did not really believe were strong companies. In affirming the dismissal of the complaint, the court stressed that the plaintiffs could not tie the stock price drop to the analyst behavior. The court specifically noted that "a general fall in the price of Internet stocks" was insufficient to demonstrate loss causation (p. 174).

The court in *FindWhat Investor Group v. Findwhat.com* (658 F.3d 1282, 1311-12 (11th Cir. 2011)) summarized the loss causation requirement as follows: "(1) identifying a 'corrective disclosure' (a release of information that reveals to the market the pertinent truth that was

previously concealed or obscured by the company's fraud); (2) showing that the stock price dropped soon after the corrective disclosure; and (3) eliminating other possible explanations for this price drop, so that the fact finder can infer that it is more probable than not that it was the corrective disclosure—as opposed to other possible depressive factors—that caused at least a 'substantial' amount of the price drop."

2.3. Earnings Warnings and Securities Litigation

Adverse earnings news, including earnings announcements and earnings forecasts of bad news (earnings warnings), commonly triggers stock price drops and subsequent securities litigation. Skinner (1994) finds that firms issue bad news forecasts more often than good news forecasts, and that firms issue forecasts at an unusually high rate when the earnings news is very adverse. Despite Skinner's (1994) expectation that firms issue warnings to preempt lawsuits, Francis et al. (1994) find that firms are sued more often when they warn. Skinner (1997) notes that this relation may be due to the endogenous nature of bad news and securities litigation because the firms that face the highest litigation risk also have the strongest incentive to issue a warning.[3]

Securities litigations triggered by earnings warnings generally involve earlier management forecasts that later turn out to be incorrect.[4] The warning often marks the end of the class period when the "truth is revealed." The short-window market reaction to the earnings warning is thus used to satisfy the loss causation and damages elements in these suits.

2.4. Managerial Discretion and Macroeconomic News

Managers have significant discretion regarding the timing of an adverse news release. There is generally no duty to warn investors of adverse earnings news prior to the normal earnings announcement.[5] When managers decide to warn, the timing of the disclosure is subject to their discretion (*Financial Industrial Fund, Inc. v. McDonnell Douglas Corp.*, 474 F.2d 514 (10th Cir. 1973)). Thus, managers are free to time the disclosure in an attempt to avoid litigation.

Furthermore, evidence suggests that managers are highly informed about both firm-specific and macroeconomic news. For example, managers earn abnormal returns from insider trades based on firm-specific (e.g., Piotroski and Roulstone 2005) and macroeconomic (Seyhun 1992) information. Managers are also undoubtedly aware of scheduled announcements of important macroeconomic news. For example, Federal Open Market Committee (FOMC) meetings are extensively covered by the media, and approximately 80% of annualized stock market returns immediately precede FOMC meetings (Lucca and Moench 2015). Thus, managers could avoid many large market swings by timing disclosures to avoid days surrounding such scheduled economic announcements. Although macroeconomic news can arrive unexpectedly, managers could reduce the likelihood of encountering such surprises by disclosing near the end of the trading day. In other words, "surprise" macroeconomic news is less likely to arrive on the same day as an earnings disclosure when the disclosure is made with, for example, two hours of trading left as opposed to a disclosure made when the market is closed, which subjects the disclosure to a full day of news.

3. Hypotheses

In this section, we provide predictions regarding the effect of large market declines on the litigation process. Nearly every securities class action is either settled or dismissed. In fact, since the passage of the PSLRA in late 1995, more than 4,200 cases have been filed, and only 14 have proceeded to a trial verdict (NERA Economic Consulting 2013). We thus examine the likelihood that a case is filed, whether the case is dismissed, and the settlement value.

Settlement values are closely associated with the likelihood of lawsuit filing because plaintiffs consider the expected settlement when deciding whether to file the lawsuit. Conceptually, the settlement compensates shareholders for damages, which reflect the shareholders' losses. As such, the larger the stock price drops upon revelation of adverse news, the higher the settlement value, and the higher the likelihood the plaintiffs will file the case.[6] Accordingly, stock returns are a critical factor in case valuation because they are directly related to damages. We suggest that large market declines may play an important role in

[3] Later evidence in Field et al. (2005) and Donelson et al. (2012) also supports this view.

[4] These positive statements generally signify the beginning of the class period (the time over which the market was allegedly deceived). These earlier statements (or failures to disclose, depending on the circumstances of the case) satisfy the misstatement element of Rule 10b-5. The PSLRA provides a safe harbor for forward-looking statements in some instances. Although this has likely reduced the number of cases related to earnings forecasts, we do not control for the safe harbor because all of our observations occur in the same legal environment.

[5] One potential exception exists where a firm has issued a prior earnings forecast. Some courts hold that, to the extent market participants are still relying on the prior management forecast, there is a duty to update. However, other courts hold that no such duty exists (Prentice 2009).

[6] Other elements affect damages, such as the length of the class period, the time over which the market was allegedly deceived. The longer the class period lasts, the more trades occur, and the higher likelihood of damages (e.g., Skinner 1994). Total settlements were $2.9 billion in 2010 and $3.4 billion in 2011 (PricewaterhouseCoopers 2011).

litigation because of their relation to the firm's stock price drop with the disclosure of adverse news.

Even though market returns are legally irrelevant, they could still affect perceived damages. Since individuals anchor decisions on initial estimates, plaintiffs' lawyers would likely want to present the highest possible estimate of damages and "bargain down" from that point (Diamond et al. 2011). Selecting the largest negative raw return (and thus the highest potential damages) fits a strategy that caters to jury anchoring.[7] Even though few cases reach a jury verdict, the threat of a jury trial forms a backdrop for settlement negotiations (see Palmrose 1991). Thus, potential juror biases are likely taken into account in both case selection and settlement negotiations. Evidence suggests that jurors often make decisions based on irrelevant information, in particular the extent of the plaintiff's injury or damages suffered (Greene et al. 1999, Kadous 2000). Even sophisticated parties sometimes consider irrelevant information when making important decisions. For example, boards appear to consider market returns when making decisions to terminate CEOs (Jenter and Kanaan 2015).

Consistent with this view, plaintiffs' attorneys attempt to use raw returns as leverage in settlement discussions. In fact, one attorney stated: "Listen, I'll go up in front of a jury and I'm going to show $2 billion in investment loss that you are going to have to explain why it is really only $200 million" (Baker and Griffith 2010, p. 165). Furthermore, Baker and Griffith (2010) also note that because almost no cases proceed to trial, case law establishing standards for damages models is underdeveloped. Therefore, plaintiffs face incentives to apply crude analyses without fully correcting for market returns when calculating damages. Contemporaneous market declines could lead to higher settlements due to the *perception* that damages are higher.

Although market returns may affect litigation costs, they might not for three interconnected reasons. First, plaintiffs are relying on hypothetical jury perceptions in an area of litigation where trials are essentially an empty threat because they almost never occur (see Baker and Griffith 2010). Thus, plaintiffs must argue that a hypothetical jury might be swayed by their higher estimate of damages even though it is highly unlikely such a jury will ever exist. Second, defendants have strong incentives to argue for appropriately adjusted damages at every step of the litigation process where it could make a difference. For example, defendants could highlight market returns in their motion to dismiss, during settlement negotiations, and in the extremely rare event of a trial. Finally, to the extent that plaintiffs select cases that are weaker on other dimensions to find cases occurring during large market declines, they face a higher likelihood of a dismissal if the judge in the case applies the law appropriately.

On balance, we expect that plaintiffs' lawyers will consider this potential for higher damages and that disclosures issued on days with large market declines are more likely to face a future lawsuit. Second, we expect disclosures issued on days with large market declines to settle for higher amounts. We state our first two hypotheses as follows:

Hypothesis 1 (H1). *Large market declines on the day of an earnings disclosure are associated with an increase in the likelihood of a securities class action.*

Hypothesis 2 (H2). *Large market declines on the day of an earnings disclosure are associated with an increase in the value of securities class action settlements.*

Although our first two hypotheses reflect the views of legal counsel (who choose whether to file a case, and then negotiate settlement terms), judges decide whether the case should be dismissed on grounds that the allegations are not sufficiently convincing. The relation between large market declines and dismissals could be positive, negative, or nonexistent. As noted previously, legal standards require that market returns be excluded from damages calculations and examining whether the loss causation requirement is met. Thus, judges should generally disregard large market declines when deciding the motion to dismiss.

However, information irrelevant to legal standards can influence judges' decisions (e.g., Anderson et al. 1997). If this is the case with securities litigation, large market declines could be negatively associated with dismissals because the larger investor loss cited in the plaintiffs' complaint could lead a judge to believe that fraud was more likely.

Alternatively, the possibility of a large settlement (driven in part by a large market decline) could motivate plaintiffs to file cases with less clear evidence of the other required elements of Rule 10b-5. Since judges should be inclined to dismiss these weaker cases, the relation between large market declines and dismissals could be positive even if the judge does not specifically consider the market return itself. As such, it is unclear whether judges' decisions are associated with large market declines.

To distinguish between these explanations, we separately examine judges with specialized experience in securities litigation (*specialized expertise*) because they are less likely to incorporate legally irrelevant market returns. We do so because judges that adjudicate

[7] This is reinforced by the need for expert testimony in assessing damages in securities litigation. Expert testimony is often viewed as confusing for the average juror (e.g., Boudreau and McCubbins 2009), and there is no universally accepted model for damages in this area (e.g., Finnerty and Pushner 2002).

securities class actions are generalists with large and diverse caseloads ranging from criminal cases to property disputes to bankruptcy proceedings. Judges with specialized experience in securities litigation would be more likely to appropriately apply standards, whereas other judges would be more likely to be influenced by irrelevant information. This is consistent with Kesan and Ball (2011), who find that generalist judges that have adjudicated more patent litigation are less likely to have their decision on patent cases overturned by a specialized appeals court. However, the judges' experience in other cases has no effect on the patent reversal rate, indicating the importance of specialized experience on applying the correct legal standards. As such, it is likely that the relation between case dismissal and large market declines varies based on the individual judge's experience with securities litigation. We thus examine three related hypotheses regarding dismissals based on the specialized experience of the judge. We first examine the full sample, and we then classify judges as experienced/inexperienced and split the sample on this basis. The formal hypotheses are as follows:

Hypothesis 3A (H3A). *Large market declines on the day of an earnings disclosure are not associated with securities class action dismissals.*

Hypothesis 3B (H3B). *Large market declines on the day of an earnings disclosure are positively associated with securities class action dismissals when adjudicated by a judge with specialized expertise.*

Hypothesis 3C (H3C). *Large market declines on the day of an earnings disclosure are negatively associated with securities class action dismissals when adjudicated by a judge without specialized expertise.*

4. Earnings Disclosures, Large Market Declines, and Litigation Incidence

4.1. Earnings Disclosure Sample and Descriptive Statistics

The earnings disclosure sample intersects Compustat (accounting variables), Center for Research in Security Prices (returns), First Call (management forecasts), Risk Metrics (litigation), and Institutional Brokers' Estimate System (I/B/E/S; analyst expectations and the time of earnings announcements) data. Because the PSLRA altered the litigation environment, we start our analysis in 1996. We end the sample in 2007 because of changes in caseloads away from lawsuits triggered by earnings announcements toward those based on filings related to the financial crisis and Chinese firms engaged in reverse mergers (Cornerstone Research 2012). Given our focus on disclosure timing, we obtain the exact time of the firm disclosure from First Call and I/B/E/S.

Table 1 Descriptive Statistics: Firm Disclosure Sample

	Large market decline = 1 ($N = 17{,}554$)			Large market decline = 0 ($N = 157{,}575$)			
Variable	Mean	SD	P50	Mean	SD	P50	Diff in means
Litigation (%)	0.55	7.41	0.00	0.29	5.36	0.00	0.27***
MrktRtrn (%)	−2.88	0.87	−2.66	0.60	1.27	0.59	−3.48***
AbnRtrn (%)	−0.87	8.89	−0.05	−0.39	8.42	−0.36	−0.48***
Surprise	−0.01	0.06	0.00	−0.01	0.06	0.00	0.00
IndustryRisk	0.31	0.46	0.00	0.32	0.47	0.00	−0.01*
LogAssts	6.46	1.97	6.36	6.40	1.96	6.29	0.06***
SaleGrwth	0.10	0.22	0.06	0.11	0.22	0.07	−0.01***
CumRtrn	0.05	0.55	−0.04	0.06	0.56	−0.04	−0.01**
StdRet	0.14	0.09	0.11	0.13	0.09	0.11	0.01
Skew	0.22	0.81	0.20	0.25	0.80	0.22	−0.03***
Turnover	20.37	20.83	13.43	19.52	20.16	12.81	0.85***

Notes. This table provides descriptive statistics for the main samples used in this paper. The difference tabulates *T*-tests of differences in means across whether the end of the class period fell on a day where the market declined significantly. Variables are defined in the appendix. Note that we depart from the variable descriptions in Table 1 by not scaling any variables by 1,000. The sample size is denoted in the column heading, except for the *LogSettle* size, which has 106 observations when *LrgeMktDecline* equals 1, and 1,013 observations otherwise.

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$ (one-sided tests).

Accordingly, we use market returns on the following trading day in the case where disclosures are issued after trading hours because that is the return commonly quoted by plaintiffs in lawsuit filings and used in estimations of damages (Bruegger and Dunbar 2009).

Table 1 presents descriptive statistics over the firm disclosure sample used to test H1. Litigation occurs in 0.32% of the approximately 175,000 firm disclosures in the sample (untabulated). However, in the sample of earnings disclosures on days with large market declines, the average is 0.55% compared to 0.29% on other days, a statistically significant difference ($t = 5.94$). By construction, large market declines occur on 10% of the observations. These declines are quite significant economically. Mean (median) three-day market returns are −2.88% (−2.66%), ranging from −1.8% to −4.7% over these periods, and the mean market-adjusted firm return is slightly negative, although the surprise is not different.

Table 2 presents correlations among the variables in the firm disclosure sample. Not surprisingly, disclosures that trigger litigation (column (1)) are negatively correlated with market-adjusted firm returns and surprises, indicating that adverse disclosures are more likely to trigger litigation. Similar to Table 1, earnings disclosures occurring on a day with a large market decline (column (2)) are correlated with a higher incidence of litigation, but are not significantly correlated with either market-adjusted firm returns or earnings surprises. The latter result suggests that firm disclosures are not

Table 2 Pearson (Spearman) Correlations for the Firm Disclosure Sample Above (Below) the Diagonal ($N = 175{,}129$)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) *Litigation*	—	0.01*	−0.1*	−0.00	0.01*	0.01*	0.02*	−0.01*	0.02*	−0.01*	0.04*
(2) *LrgeMktDecline*	0.01*	—	−0.01	−0.00	−0.00	0.01*	−0.01*	−0.01*	0.00	−0.01*	0.01*
(3) *AbnRtrn*	−0.05*	−0.00	—	−0.01*	−0.03*	0.04*	−0.01*	0.11*	−0.06*	0.01*	−0.03*
(4) *Surprise*	−0.03*	0.00	0.22*	—	0.01*	−0.01*	−0.01*	−0.00	0.01*	0.00	0.00
(5) *IndustryRisk*	0.01*	−0.00	−0.04*	0.02*	—	−0.27*	0.04*	0.02*	0.32*	0.08*	0.28*
(6) *LogAssts*	0.01*	0.01*	0.07*	0.06*	−0.28*	—	−0.11*	−0.02*	−0.45*	−0.19*	−0.08*
(7) *SaleGrwth*	0.02*	−0.01*	−0.01*	0.01*	0.09*	−0.17*	—	−0.03*	0.03*	−0.04*	0.19*
(8) *CumRtrn*	−0.01*	−0.01*	0.14*	0.18	−0.05*	0.10*	−0.04*	—	0.13*	0.12*	0.14*
(9) *StdRet*	0.02*	0.00	−0.08*	−0.03*	0.34*	−0.52*	0.14*	−0.09*	—	0.34*	0.38*
(10) *Skew*	−0.01*	−0.01*	−0.01*	−0.00	0.07*	−0.19*	−0.03*	0.07*	0.26*	—	0.02
(11) *Turnover*	0.03*	0.01*	−0.03*	0.06	0.32*	−0.05*	0.25*	0.04*	0.38*	−0.00	—

Notes. This table provides Pearson (Spearman) correlations above (below) the diagonal for the sample of earnings announcements and forecasts. Variables are defined in the appendix.

*$p < 0.05$.

necessarily driving market declines; otherwise, firm returns and surprises would be negatively correlated with large market declines. Overall, the univariate evidence is consistent with market returns playing a meaningful role in litigation incidence.

4.2. Multivariate Tests

Hypothesis 1 relates to the likelihood of litigation. Accordingly, we estimate a linear probability model over a sample of quarterly earnings announcements, a sample of earnings forecasts, and a combined sample of all earnings disclosures:[8]

$$Litigation = \beta_0 + \beta_1 LrgeMktDecline + \Sigma\beta_i Controls + \varepsilon \quad (1)$$

Litigation takes a value of 1 if the disclosure occurred within five days of the end of the class period, consistent with the disclosure triggering litigation. *LrgeMktDecline* is an indicator variable that equals 1 if the market return over the three-day window centered on the disclosure date is in the bottom decile over all disclosures issued that year.[9] A positive value for β_1 indicates that large market declines are associated with an increased risk that the disclosure will subsequently trigger litigation.

We follow Kim and Skinner (2012) and control for firm characteristics associated with litigation to ensure that these characteristics are not driving both litigation and the variable of interest.[10] These controls include the market-adjusted return estimated as the compounded three-day difference between raw return and equal-weighted market return, analyst surprise, the log of total assets, sales growth, market-adjusted monthly returns cumulated over the prior 12 months, the standard deviation and skewness of returns measured over the prior 12 months, prior period sales growth, and share turnover. Furthermore, we add year and industry fixed effects to control for these dimensions and cluster standard errors by firm and year. The appendix contains complete variable descriptions.

We tabulate multivariate tests of H1 in Table 3. The first model demonstrates that large market declines are associated with litigation over the sample of earnings announcements and forecasts. The coefficient on the indicator for large market declines is 2.13 and statistically significant ($t = 3.36$), even after controlling for known determinants of litigation, as well as year and industry fixed effects, the news contained in the disclosure captured by the three-day market-adjusted return centered on the disclosure date, and earnings surprise. This positive relation between large market declines and the incidence of litigation holds even after introducing firm fixed effects (untabulated). This result is economically significant as well. A disclosure falling on a day with a large market decline is associated with an increase in litigation likelihood of 68%.[11]

Furthermore, the control variables are related to litigation, consistent with expectations. The higher the

[8] We follow Duchin and Sosyura (2014) and use linear probability models because including fixed effects (which we include in all models) and interaction terms (which we include in some models) can bias coefficient estimates in nonlinear models.

[9] We focus on large market declines (as opposed to a continuous measure of market returns) because these are the events likely to trigger litigation. That said, we do vary this threshold and test alternative research designs (see §7.1). Furthermore, we use three-day windows because plaintiffs often cite returns over a few days in their complaints and to ensure that the disclosure is matched to the correct return window (Ferrell and Saha 2007).

[10] In particular, we use Table 7, model 2, from Kim and Skinner (2012).

[11] Untabulated results indicate that 0.315% of the disclosures trigger litigation. The marginal effect of the large market decline indicator variable on the likelihood of litigation is 0.213%, which is a 68% increase (0.213/0.315). We measure the economic effect of all variables in this manner.

Table 3 Tests of the Relation Between Large Market Declines and the Incidence of Litigation

	(1)	(2)	(3)
	DV: 1 = if the following disclosure triggered litigation		
	Earnings announcement and management forecast	Earnings announcement	Management forecast
LrgeMktDecline	2.13***	1.57***	5.79**
	(3.36)	(3.57)	(1.81)
Surprise	−7.55***	−5.42**	−52.00*
	(−3.05)	(−2.17)	(−1.54)
AbnRtrn	−66.23***	−44.43***	−215.87***
	(−12.07)	(−11.36)	(−7.44)
IndustryRisk	−0.23	−0.16	−0.23
	(−0.66)	(−0.50)	(−0.09)
LogAssts	0.99***	0.71***	2.82***
	(6.69)	(6.53)	(3.48)
SaleGrwth	4.39***	2.33***	14.42**
	(4.38)	(4.60)	(2.31)
CumRtrn	−0.55	−0.88***	5.21**
	(−1.21)	(−2.69)	(1.72)
StdRet	15.22***	13.92***	45.39***
	(4.79)	(4.55)	(3.73)
Skew	−0.94***	−0.61***	−2.52**
	(−3.20)	(−2.68)	(−1.74)
Turnover	0.11***	0.08***	0.34***
	(7.54)	(7.14)	(4.79)
Constant	−7.49***	−4.69***	−14.48**
	(−3.62)	(−2.43)	(−1.86)
Observations	175,129	158,448	16,681
R-squared	0.01	0.01	0.05
Cluster	Firm, year	Firm, year	Firm, year
Fixed effects	Year, industry	Year, industry	Year, industry

Notes. The dependent variable in each model takes a value of 1 if the disclosure subsequently triggered litigation. This table tabulates ordinary least squares (OLS) tests of the relation between the timing of disclosures with respect to whether the disclosure occurred contemporaneously with a large market decline (*LrgeMktDecline*). *LrgeMktDecline* takes a value of 1 if the firm issued the earnings disclosure on a day when the broader market declined significantly (bottom decile of market returns). Variables are defined in the appendix.

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$ (one-sided tests with standard errors clustered at the firm level).

market-adjusted return (or the better the news relative to analyst expectations), the lower the likelihood of litigation. Economically, moving from the median market-adjusted return to the 75th percentile decreases the likelihood of litigation by 81%. Also, large, volatile, fast-growing firms that are frequently traded have a higher risk of litigation, consistent with Kim and Skinner (2012).

The next columns split the sample into earnings announcements (column (2)) and management forecasts (column (3)). The large market decline indicator is positive and significantly related to litigation in both the earnings announcement sample (coefficient = 1.57, $t = 3.57$) and the earnings forecast sample (coefficient = 5.79, $t = 1.81$). Overall, this table is consistent with the prior in demonstrating a significant relation between large market declines and the incidence of litigation, consistent with H1.

5. Litigation Outcomes

5.1. Litigation Outcome Sample and Descriptive Statistics

Descriptive statistics for the litigation outcome sample used to test H2 and H3A–H3C are presented in Table 4. This sample includes 1,812 cases where we have data on the case resolution. Of these, 35% were subsequently dismissed, consistent with prior literature (e.g., Pritchard and Sale 2005). Since the corrective disclosure marks the end of the class period, we estimate returns in the three-day window centered on this date. Cases where the end of the class period coincided with a large market decline were dismissed at a rate of 37.8%, whereas other cases were dismissed at a rate of 35.0% (a difference that is not statistically significant). However, settlements were statistically higher when the end of the class period fell on a day with a large market decline (settlement roughly doubled from \$5.0 to \$10.1 million, $t = 4.27$).

The market-adjusted firm return on the class period end date is, on average, a drop of 27.5% for class periods ending on days with large market decline and 17.3% for firms with class periods ending on other days. Furthermore, an earnings disclosure date coincides with the end of the class period in 38% of the sample (*FirmDiscl*), consistent with many earnings disclosures triggering litigation. Interestingly, this rate is much higher among the sample associated with a large market decline (49% versus 37%), consistent with large market declines playing a more pronounced role when an earnings disclosure triggers litigation. Overall, the univariate evidence suggests that large market declines are associated with higher settlements, but have no statistically significant association with dismissals.

Table 5 presents correlations of variables in the litigation sample. The indicator for a large market decline occurring on the end of the class period is positively correlated with settlements, but is not correlated with dismissals. We now explore these relations in a multivariate setting.

5.2. Multivariate Tests

We estimate the following model to test H2:

$$Settle = \beta_0 + \beta_1 LrgeMktDecline + \Sigma\beta_i Controls + \varepsilon. \quad (2)$$

Table 4 Descriptive Statistics: Litigation Sample

	Large market decline = 1 ($N = 180$)			Large market decline = 0 ($N = 1,632$)			
Variable	Mean	SD	P50	Mean	SD	P50	Diff in means
Dismiss (%)	37.8	48.6	0.0	35.0	47.7	0.0	2.8
LogSettle	16.13	1.59	15.80	15.43	1.60	15.39	0.70***
MktRtrn (%)	−3.1	1.9	−2.8	0.5	1.4	0.7	−3.6***
AbnRtrn (%)	−27.5	22.2	−26.6	−17.3	21.0	−15.3	−10.2***
FirmDiscl	0.49	0.50	0.00	0.37	0.48	0.00	0.12***
LogMaxDmg	13.78	1.85	13.75	13.62	1.84	13.53	0.16
IndivPlntff	0.61	0.49	1.00	0.64	0.48	1.00	−0.03
LogAssts	6.72	2.21	6.37	6.45	2.17	6.04	0.27*
NumSecurities	4.17	6.38	3.00	4.08	12.80	2.00	0.09
FirmRtrnClss	−0.19	0.69	−0.29	−0.20	0.70	−0.32	0.00
MrktRtrnClss	0.24	0.41	0.13	0.34	0.49	0.19	−0.10***
FilingTime	0.14	0.18	0.08	0.16	0.24	0.12	−0.02
ClassLngth	0.40	0.35	0.33	0.48	0.46	0.35	−0.08**
Restate	0.22	0.41	0.00	0.24	0.43	0.00	−0.03

Notes. This table provides descriptive statistics for the litigation sample. The difference tabulates *T*-tests of differences in means across whether the end of the class period fell on a day where the market declined significantly. Variables are defined in the appendix. Note that we depart from the variable descriptions by not scaling any variables by 1,000. The sample size is denoted in the column heading except for the *LogSettle* size, which has 106 observations when *LrgeMktDecline* equals 1, and 1,013 observations otherwise.
*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$ (one-sided tests).

Table 5 Correlations: Litigation Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) *LrgeMktDecline*	—	0.26*	0.00	−0.13*	−0.04	−0.21*	0.11*	0.06*	0.03	0.03	0.05	0.04	0.09*
(2) *LogSettle*	0.27*	—	−0.00	−0.14*	0.40*	−0.47*	0.56*	0.26*	0.03	0.23*	0.08*	0.30*	0.29*
(3) *Dismiss*	0.00	−0.00	—	0.00	−0.00	0.03	−0.00	−0.00	−0.00	−0.02	−0.02	−0.03	−0.02
(4) *AbnRtrn*	−0.29*	−0.22*	0.01	—	0.07*	0.09*	0.00	−0.01	0.29*	−0.00	−0.00	0.00	−0.04
(5) *LogMaxDmg*	−0.05*	0.32*	0.00	0.21*	—	−0.17*	0.64*	0.12*	−0.00	0.02	0.09*	0.17*	0.03
(6) *IndivPlntff*	−0.21*	−0.46*	0.03	0.12*	−0.15*	—	−0.35*	−0.15*	−0.01	−0.14*	−0.33*	−0.26*	−0.25*
(7) *LogAssts*	0.09*	0.51*	−0.00	0.08	0.61*	−0.34*	—	0.25*	0.03	0.12*	0.19*	0.23*	0.18*
(8) *NumSecurities*	0.32*	0.50*	0.00	−0.25	0.15*	−0.40*	0.38*	—	0.01	0.10*	0.13*	0.18*	0.08*
(9) *FirmRtrnClss*	0.10*	0.13	−0.00	−0.06*	−0.14	−0.11	0.15	0.17	—	0.25*	0.05	0.09*	0.03
(10) *MrktRtrnClss*	0.10*	0.30*	−0.04	−0.04	0.00	−0.18*	0.14*	0.20*	0.18*	—	0.05	0.72*	0.16*
(11) *FilingTime*	0.05	0.06*	−0.02	0.05	0.09*	−0.32*	0.20*	0.36*	0.09	−0.00	—	0.22*	0.09*
(12) *ClassLngth*	−0.00	0.24*	−0.04	0.11	0.18*	−0.20*	0.19*	0.16*	−0.07*	0.73*	0.19*	—	0.27*
(13) *Restate*	0.09*	0.29*	−0.02	−0.06	0.01	−0.25*	0.19*	0.23*	0.11	0.25*	0.10*	0.24*	—

Notes. This table provides Pearson (Spearman) correlations for the litigation sample above (below) the diagonal. Variables are defined in the appendix.
*$p < 0.05$.

The dependent variable in Equation (2) is the log of all settlement payments associated with the case. We estimate this specification over all settled cases using an OLS model.[12] *LrgeMktDecline* is defined as above. A positive value for β_1 indicates that large market declines are associated with increased settlement values.

[12] We do not use a selection model because we are interested in examining the likelihood of litigation separately from the outcome. As such, a selection model is not appropriate because our conclusions are conditional on settlement (Puhani 2000).

Similarly, we estimate the following linear probability model to test H3A–H3C:

$$Dismiss = \beta_0 + \beta_1 LrgeMktDecline + \Sigma\beta_i Controls + \varepsilon. \quad (3)$$

Dismiss is an indicator variable that equals 1 if the lawsuit was subsequently dismissed. A positive value for β_1 indicates that large market declines are associated with an increased likelihood of dismissal.

For both equations, we base our control variables on McShane et al. (2012), including the log of maximum

damages, log of assets, length of the class period, the number of unique securities related to the lawsuit, whether a restatement occurred, whether the named plaintiff is an individual (as opposed to an institution), and several stock return characteristics. See the appendix for a complete description of the variables.

Table 6, column (1) presents the results of estimating Equation (2).[13] Overall, litigation triggered by a disclosure occurring on a large market decline is associated with a larger settlement ($t = 2.56$). This effect is economically significant as well. In the multivariate model, moving from the end of the class period *not* falling on a large market decline to the end of the class period falling on a large market decline moves the settlement from the median value ($5.4 million) to around the 60th percentile ($8.5 million). The control variables are consistent with prior literature and indicate that settlements are increasing in damages, size, the number of securities, and the market return over the class period and subsequently restated financial statements, and negatively related to market-adjusted returns, an individual plaintiff, and time to file. Overall, these results are consistent with H2 and indicate that large market declines are associated with larger settlements.

With respect to the dismissal decision, this table demonstrates two key results. First, the coefficient on large market decline is negative (−0.01) but statistically insignificant ($t = -0.16$) in the full sample (column (2)), similar to the univariate tests. However, this could vary based on the experience of the judge. For example, judges who do not routinely see securities cases could be influenced by large raw returns, whereas judges with more relevant experience could recognize weaker cases. Accordingly, we next split the sample according to whether the judge is in the top quartile in terms of the number of securities cases he or she has presided over (specialized expertise). The relation between large market declines and dismissals is positive (0.22) and significant ($t = 1.70$) for judges that have specialized experience, but negative (−0.08) and significant ($t = -2.44$) for judges that do not.

Second, the coefficient on abnormal returns is negative (−0.41) and statistically significant ($t = -4.69$) in the full sample (column (2)). This is consistent with the potential for large damages leading plaintiffs to file weaker cases. As abnormal returns fall (creating larger damages), the likelihood of dismissal increases. Furthermore, when cases are split according to the specialized experience of the judge, the negative relation between abnormal returns and dismissals holds only for judges with specialized experience. Both of these results are consistent with specialized experience playing an important role in the adjudication of these cases.

Overall, the results in Table 6 are consistent with cases dealing with disclosures coinciding with large market declines having larger settlement values. However, this relation between large market declines and the dismissal decision is contingent upon the specialized experience of the judge. Overall, the results are consistent with judges with specialized experience in this form of litigation recognizing that the merits of cases corresponding with a large market decline are weaker and dismissing cases at a higher rate.

5.3. Overall Case Outcomes

Given the evidence presented, it is not clear whether the "gamble" by plaintiffs' attorneys is worthwhile. In other words, is the higher level of settlement worth the higher dismissal rate (for experienced judges) when all outcomes are considered? We investigate this issue by including dismissed cases (which have no settlement value) in model (2), and again present results for the full sample and split samples based on whether the judge in the case has specialized experience with securities litigation.

Results are presented in Table 7. In the full sample (column (1)), there is no significant relation between case outcomes and large market declines ($t = 0.64$). When we split the sample, we find no statistically significant relation for cases handled by judges with specialized experience ($t = -1.16$, column (2)). However, there is a significant positive relation for cases handled by judges *without* specialized experience ($t = 1.84$, column (3)).[14] Thus, it appears that the gamble of filing a case where the class period ends during a large market decline is worthwhile for the plaintiffs' attorney only if the case is handled by a judge without specialized experience.

6. Managerial Disclosure Choices

6.1. Do Managers Consider Large Market Declines When Disclosing Adverse Earnings News?

The relation between large market declines and litigation could be attributable to managers who choose to disclose adverse news during market declines. This would be consistent with managers "herding" by clustering adverse disclosures (Tse and Tucker 2010) or macroeconomic shocks reducing market expectations such that firms have incentives to issue adverse disclosures after "saving" bad news (Archarya et al. 2011). Furthermore, even if managers can time market returns,

[13] We estimate these relations over all litigation, regardless of whether we can identify the disclosure that triggered the litigation since we can still observe the market reaction at the end of the class period.

[14] In column (4), we confirm that the difference between these two subsamples is significant ($t = 2.28$).

Table 6 Multivariate Tests of the Outcome of Litigation and Whether the Disclosure Triggering the Litigation Occurred on a Large Market Decline

	(1)	(2)	(3)	(4)
Dependent variable:	*LogSettle*	*Dismiss* = 1	*Dismiss* = 1	
Sample:	Full sample		Hi specialized expertise = 1	Hi specialized expertise = 0
LrgeMktDecline	0.46***	−0.01	0.22*	−0.08**
	(2.56)	(−0.16)	(1.70)	(−2.44)
AbnRtrn	−1.20***	−0.41***	−0.46***	−0.09
	(−5.71)	(−4.69)	(−4.25)	(−1.26)
LogMaxDmg	23.15***	−3.14*	−3.33**	−0.28
	(8.55)	(−1.71)	(−2.31)	(−0.31)
IndivPlntff	−0.65***	0.02	−0.07	0.11***
	(−4.81)	(0.69)	(−0.97)	(4.27)
LogAssts	0.18***	0.08***	0.04***	0.06***
	(6.52)	(6.61)	(2.59)	(6.54)
NumSecurities	0.04***	−0.04***	−0.01	−0.04***
	(3.26)	(−11.80)	(−0.90)	(−14.45)
FirmRtrnClss	−0.06	0.03**	0.05**	0.04***
	(−0.88)	(2.43)	(2.56)	(2.62)
MrktRtrnClss	0.78**	0.08	0.36*	−0.05
	(2.22)	(1.10)	(1.81)	(−0.74)
FilingTime	−1.66***	0.01	−0.20	0.26***
	(−2.38)	(0.09)	(−1.25)	(3.10)
ClassLngth	−0.45	−0.08	−0.61**	0.05
	(−1.07)	(−1.05)	(−2.35)	(0.81)
Restate	0.39***	−0.02	−0.03	−0.05
	(4.08)	(−0.42)	(−0.36)	(−1.31)
Constant	11.24***	0.34*	0.67***	0.13
	(48.51)	(1.95)	(3.17)	(1.11)
			T-test of differences: *LrgeMktDecline* (3) − (4)	
			Difference = 0.30	
			T-stat. = 3.59	
Observations	1,119	1,812	359	1,070
R-squared	0.56	0.20	0.30	0.24
Cluster	Firm, year	Firm, year	Firm, year	Firm, year

Notes. This table tabulates OLS regressions of the relation between large market declines and the size of the settlement (column (1)) and the likelihood of a dismissal (columns (2)–(4)). *LrgeMktDecline* takes a value of 1 if the lawsuit targeted a disclosure that was issued on a day when the market declined significantly. The dependent variable in column (1) is the log of the settlement, and the dependent variable in columns (2)–(4) takes a value of 1 if the litigation was subsequently dismissed. The sample includes all available observations (columns (1) and (2)) and those where the judge is (is not) among the top quartile in the number of securities litigation cases he or she presides over in column (3) (column (4)). Variables are defined in the appendix.

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$ (using one-sided tests with standard errors clustered by firm and the year the class period ended (the event that triggered the litigation)).

they might wait for a day without adverse macroeconomic news to temper the decline in the raw return leading to *less* litigation on these days.[15]

To examine whether managers choose to disclose adverse news during days with large market declines, we focus on voluntary earnings forecasts where managers have more latitude in disclosure timing. Managers engaging in this strategy would issue adverse forecasts near the end of the trading day when the daily market sentiment is sharply negative.

Table 8 presents tests of the propensity of firms to issue adverse earnings forecasts during the last two hours of the trading day. We include firm and year fixed effects as well as three variables that might vary over time (number of analyst estimates, sales growth, market return) to control for firm characteristics that might affect the disclosure time (Doyle and Magilke 2009). Results in column (1) indicate that adverse disclosures

[15] Although the latter explanation is more plausible, we control for firm-specific abnormal returns and use equal-weighted returns to identify large market declines. This reduces the possibility that an individual firm (or sector) could drive a large market decline.

Table 7 Multivariate Tests of the Outcome of Litigation and Whether the Disclosure Triggering the Litigation Occurred on a Large Market Decline Partitioned by the Judge's Experience

	(1)	(2)	(3)
	Dependent variable = *LogSettle*		
Sample:	All	Hi specialized expertise = 1	Hi specialized expertise = 0
LrgeMktDecline	0.50	−2.46	1.22*
	(0.64)	(−1.16)	(1.84)
AbnRtrn	4.91***	6.38***	0.89
	(3.95)	(3.38)	(0.81)
LogMaxDmg	0.91***	0.82***	0.31**
	(4.29)	(3.66)	(2.29)
IndivPlntff	−0.85	0.67	−1.88***
	(−1.55)	(0.57)	(−4.26)
LogAssts	−1.34***	−0.67**	−0.97***
	(−8.33)	(−2.01)	(−7.03)
NumSecurities	0.61***	0.22	0.69***
	(12.95)	(1.06)	(15.95)
FirmRtrnClss	−0.77***	−0.90***	−0.70***
	(−3.40)	(−3.58)	(−2.59)
MrktRtrnClss	−0.33	−3.31	1.21
	(−0.32)	(−0.91)	(1.07)
FilingTime	−1.50	0.53	−4.54***
	(−0.71)	(0.23)	(−3.12)
ClassLngth	0.62	7.25	−1.05
	(0.48)	(1.58)	(−0.94)
Restate	0.74	1.17	1.18*
	(1.00)	(0.76)	(1.89)
Constant	4.96**	1.05	10.02***
	(1.98)	(0.30)	(5.08)
		T-test of differences: *LrgeMktDecline* (3) − (2)	
		Difference = 3.68	
		T-stat. = 2.28	
Observations	1,429	359	1,070
R-squared	0.23	0.26	0.26
Cluster	Firm, year	Firm, year	Firm, year

Notes. This table tabulates OLS regressions of the relation between large market declines and the log of the settlement value set as 0 if the case is dismissed. *LrgeMktDecline* takes a value of 1 if the lawsuit targeted a disclosure that was issued on a day when the market declined significantly. The sample includes all available observations (column (1)) and those where the judge is (is not) among the top quartile in the number of securities litigation cases he or she presides over in column (2) (column (3)). Variables are defined in the appendix.

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$ (one-sided tests with standard errors clustered by firm and the year the class period ended (the event that triggered the litigation)).

(those in the bottom decile of three-day market-adjusted return) are less likely to be issued during the last two hours of trading (coefficient = −0.03, $t = -2.96$).[16] This is consistent with firms generally avoiding disclosure of adverse news late in the trading day, when market sentiment is clearer.

To test whether managers avoid disclosing news at the end of the day when the market declines significantly, we interact the indicator of adverse news with the large market decline indicator. The coefficient on the interaction term is negative (−0.03) and statistically significant ($t = -1.93$). This is consistent with managers avoiding disclosure of adverse news at the end of the trading day when the market declines significantly. Although we cannot observe managers' intent, this behavior is consistent with managers recognizing the increased litigation risk associated with large market declines.

[16] We also use the analysts' surprise to identify adverse disclosures. Results are very similar.

Table 8 Tests of Managers Avoiding Issuing Adverse Earnings Forecasts During Large Market Declines

	(1)	(2)
	DV: 1 = if the management earnings forecast occurred during the last two hours of trading	
LowFirmReturn	−0.03***	−0.02***
	(−2.96)	(−2.61)
LrgeMktDecline	0.01	0.02
	(1.28)	(1.63)
LowFirmReturn × *LrgeMktDecline*		−0.03*
		(−1.93)
NumEst	0.09***	0.09***
	(2.95)	(2.93)
SaleGrwth	0.03*	0.03*
	(1.70)	(1.71)
CumRtrn	1.57	1.64
	(0.24)	(0.25)
Constant	0.09***	0.09***
	(3.71)	(3.69)
Observations	13,157	13,157
R-squared	0.14	0.14
Cluster	Firm, year	Firm, year
Fixed effects	Firm	Firm

Note. This table tabulates OLS tests of the relation between the likelihood the disclosure was issued during the last two trading hours (2:00 P.M.–4:00 P.M.) and the news in the disclosure. *LowFirmReturn* takes a value of 1 if the three-day cumulative market-adjusted firm return centered on the disclosure date is in the bottom decile. Variables are defined in the appendix.

*$p < 0.1$; ***$p < 0.01$ (one-sided tests with standard errors clustered by firm and year).

6.2. Do Earnings Announcements Issued After Hours Avoid Litigation?

Several studies suggest that managers should disclose adverse news after hours because the market incorporates information disclosed after hours more slowly than information disclosed during trading periods (Francis et al. 1992, Gennotte and Trueman 1996). These studies attribute this phenomenon to varied explanations such as limited cognitive attention, an inability of market makers to discern noise traders from informed

investors in opening bids, and strategic bidding by informed traders to delay trading so as to not affect opening prices. Overall, these studies confirm conventional wisdom to delay releasing bad news until after the market closes because the reaction will be less extreme.

Similarly, evidence indicates that firms follow this strategy, because bad news is more frequently disclosed at times of relatively low investor attention, including after trading hours (e.g., Patell and Wolfson 1982, Doyle and Magilke 2016). Regardless of whether the average firm discloses strategically, those that believe they may face disclosure-related litigation are likely to consider all options to minimize the risk of litigation. These firms may choose to disclose after hours to attenuate the stock price decline which, in turn, reduces the likelihood of litigation. Also, it may be that potential litigants face the same cognitive constraints as investors and might not properly detect illicit actions disclosed during these periods.

To test whether a strategy of after-hours disclosure of adverse news reduces the risk of litigation, we replicate Table 3 and add an indicator for whether the disclosure occurred after hours. Column (1) of Table 9 demonstrates that disclosures occurring after hours are *more* likely to trigger litigation. However, this could be attributable to managers issuing more adverse news after hours, and not that the action of disclosing after hours caused litigation. Column (2) tabulates a model explicitly controlling for the news of the earnings announcement using both the three-day market-adjusted return and analyst surprise as well as adding the large market decline indicator. These variables drive away the statistical relation between after-hours disclosures and the incidence of litigation.[17] Furthermore, the large market decline result still holds over this smaller sample. Overall, we detect no relation between after-hours disclosures and the incidence of litigation after controlling for the news in the disclosure, indicating that this strategy does not appear to be an effective deterrent to litigation.

Table 9 Tests of the Relation Between After-Hours Disclosures and the Incidence of Litigation

	(1)	(2)
	DV: 1 = if the earnings announcement triggered litigation	
AfterHours	1.68***	0.86
	(2.69)	(1.62)
LrgeMktDecline		2.02***
		(2.90)
Surprise		0.63
		(0.25)
AbnRtrn		−46.73***
		(−10.55)
LogAssts		0.78***
		(6.60)
SaleGrwth		2.56***
		(3.03)
CumRtrn		−1.19***
		(−3.36)
StdRet		14.42***
		(3.36)
Skew		−0.81***
		(−3.91)
Turnover		72.23***
		(4.77)
Constant	1.96***	−9.39***
	(12.34)	(−4.69)
Observations	78,128	78,128
Pseudo R-squared	<0.01	0.01
Cluster	Firm, year	Firm, year
Fixed effects	N/a	Year, industry

Notes. This table tabulates OLS tests of the relation between the timing of disclosures with respect to whether the disclosure occurred after hours (*AfterHours*). *AfterHours* takes a value of 1 if the earnings announcement was issued after hours. The dependent variable in each model takes a value of 1 if the disclosure subsequently triggered litigation. In this table, *CumRtrn* is scaled by 1,000; otherwise variables are defined as in the appendix.

***$p < 0.01$ (one-sided test with standard errors clustered at the firm level).

7. Robustness Tests

7.1. Do Adverse Disclosures Trigger Litigation and Large Market Declines?

Next, we test whether adverse disclosures trigger both large market declines and litigation. First, we conduct univariate tests of the content of disclosures across large-market-decline days. Untabulated tests indicate that adverse disclosures (those in the bottom decile of surprise) are *less* likely to occur on days with large market declines than on other days, although the difference is only marginally significant ($t = 1.82$, untabulated). We find no discernible difference in mean levels of surprise across these days. Although this suggests that the *average* adverse disclosure is less prevalent on days with market declines, it is likely that large "bellwether" firms are more likely to affect broader markets. Thus, we conduct identical tests limiting the sample to firms in the largest decile of assets and find similar results. To further safeguard that this does not affect our results, we replicate Table 3 and drop firms in the largest decile of assets. Untabulated results are very similar to those in Table 3. Overall, this evidence suggests that prior results are not driven

[17] Untabulated tests indicate that the positive relation between the after hours indicator and the incidence of litigation is not statistically significant at conventional levels after controlling for the news in the disclosure.

by adverse disclosures triggering market declines and litigation.

7.2. Additional Tests

We conduct a number of additional tests to ensure that our results are not driven by either managers choosing to disclose adverse news during market declines or adverse disclosures triggering both market declines and litigation. First, we obtain market returns over all trading days in the sample period and identify the lowest decile of three-day returns. If adverse disclosures trigger market declines, we would expect to see more adverse forecasts issued on days in the lowest decile of market returns than on days immediately surrounding the market decline. Similarly, if managers strive to disclose adverse forecasts on days with large market declines, this increase in adverse disclosures during market declines should be followed by a significantly lower proportion of adverse forecasts shortly thereafter. We aggregate forecasts on a daily basis by the number of adverse forecasts issued during the day scaled by the number of forecasts issued, and also by the mean surprise of all forecasts issued.

Overall, we find no uniform pattern that would suggest that either disclosures trigger market declines or that managers "save" adverse disclosures for days with large market declines. Second, we examine whether issuing an adverse disclosure on a day with a large market decline increases the likelihood of the next adverse disclosure also falling on a day with a large market decline. Again, we find no detectable pattern. Firms that disclose adverse news during days with large market declines are no more or less likely to do so again in the future. Similarly, we also find that the market return during the prior adverse disclosure is not correlated with the market return during the current adverse disclosure.

This study focuses on market *declines* because we believe that declines should have a greater effect on litigation than large market increases. There are two reasons for this conjecture. First, consistent with Tauchen and Zhou (2011), market declines are larger in absolute value than increases. The largest declines are in the area of a 10% drop, whereas the largest upswings are below 7%. We conduct *t*-tests of the difference between large drops and large upswings for various thresholds (10%, 5%, and 1%) and find that the magnitude of the decline is usually statistically larger than the magnitude of the increase. Second, it is commonly recognized that stock drops frequently lead to litigation (e.g., Donelson et al. 2012). Thus, with focus almost exclusively on large price drops, a market day at the very top of the distribution may not differ materially from any day with, for instance, above average returns.

8. Conclusion

This study examines the relation between litigation and large market declines. Employing a variety of tests, we find that large market declines are significantly associated with litigation. This relation persists even after investigating and ruling out strategic behavior on the part of managers, or adverse disclosures triggering large market declines and litigation. Furthermore, we find that cases with a large market decline occurring at the end of the class period are more likely to be dismissed by judges with specialized experience, whereas judges without specialized experience are less likely to dismiss such cases. Cases with class periods ending during a large market decline also settle for a higher value if they get past the motion to dismiss. Overall, we conclude that large market declines are strongly associated with litigation costs.

Next, we find some evidence consistent with managers avoiding disclosure of adverse news on days with large market declines. In particular, we observe fewer adverse earnings forecasts disclosed during the end of the trading day when the market is down significantly. However, we find a significantly lower amount of adverse disclosures issued during trading hours, regardless of the market sentiment. Overall, this suggests that managers avoid adverse disclosures at the end of a day, especially when the market declines significantly.

However, many managers wait until after hours to disclose bad news (e.g., Doyle and Magilke 2016). Disclosing after hours leaves the firm susceptible to a full day of possible negative news (from the after-hours disclosure until the end of the following trading day). We provide evidence that disclosing after hours does not reduce the risk of litigation, but it is still possible that the costs of disclosing adverse news at the end of a day when the market is not down significantly outweigh the benefits. Disclosure strategies are highly contextual decisions, and our study provides a more complete understanding of the repercussions of these strategies.

Acknowledgments

The authors thank department editor Mary Barth, an anonymous associate editor, an anonymous referee, and Judson Caskey, Rich Evans, Mary Margaret Frank, Ross Jennings, Marc Lipson, Elena Loutskina, Luann Lynch, John McInnis, Ray Pfeiffer, Robert Prentice, Paul Simko, Laura Simmons, and Mary Stanford, as well as workshop participants at the 2014 Darden Accounting Conference, the University of Texas at Austin, Texas Christian University, and the 2013 Virginia Accounting Research Conference. They also thank the Darden Graduate School of Business at the University of Virginia and the Red McCombs School of Business at the University of Texas at Austin for financial support.

Appendix. Variable Definitions

Firm disclosure sample

AbnRtrn	=	Three-day cumulative abnormal firm return centered on the disclosure date
After	=	0.00001 if the disclosure occurred after the market closed, 0 otherwise
CumRtrn	=	Abnormal return accumulated over the prior 12 months for firms that do not face litigation; otherwise, it is the return accumulated over the 12 months prior to the litigation, following Kim and Skinner (2012)
IndustryRisk	=	1 if the firm operates in one of the following Standard Industrial Classification (SIC) codes, following Francis et al. (1994): 2833–2836, 8731–8734, 3570–3577, 7370–7374, 3600–3674, 5200–5961; 0 otherwise
Litigation	=	1 if the disclosure was within five days of the end of the class period of a shareholder class action under securities law indicating that the disclosure triggered litigation, 0 otherwise
LogAssts	=	Log of total assets (*AT*)
LowFirmReturn	=	1 if the three-day cumulative abnormal firm return centered on the disclosure date is in the bottom decile, 0 otherwise
LrgeMktDecline	=	1 if the three-day market return centered on the disclosure date was in the lowest decile among disclosures issued during the calendar year, 0 otherwise
MrktRtrn	=	Three-day raw equal-weighted market return centered on the disclosure date
NumEst	=	Number of analysts following the firm
SaleGrwth	=	Yearly change in revenues (*SALE*) scaled by average total assets, following Kim and Skinner (2012)
Skew	=	Skewness of returns accumulated over the prior 12 months for firms that do not face litigation; otherwise, it is accumulated over the 12 months prior to the litigation, following Kim and Skinner (2012)
StdRet	=	Standard deviation of returns measured over the prior 12 months for firms that do not face litigation; otherwise, it is measured over the 12 months prior to the litigation, following Kim and Skinner (2012)
Surprise	=	Actual (forecasted) earnings less the most recent analyst forecast scaled by lagged price for earnings announcements (management forecasts)
Turnover	=	Share turnover (trading volume/shares outstanding) measured over the prior 12 months for firms that do not face litigation; otherwise, it is measured over the 12 months prior to the litigation, following Kim and Skinner (2012) and scaled by 1,000

Litigation sample

AbnRtrn	=	Three-day cumulative abnormal firm return centered on the end of the class period
ClassLngth	=	Length, in days, of the class period
Dismiss	=	1 if the law suit was subsequently dismissed, 0 otherwise
FilingTime	=	Length, in days, between the end of the class period and the filing date
FirmDiscl	=	1 if a firm disclosure (earnings announcement or management forecast) occurred within five days of the end of the class period indicating that the disclosure triggered the law suit, 0 otherwise
FirmRtrnClss	=	Raw firm return accumulated over the class period
Hi Specialized Expertise	=	1 if the judge is among the top quartile in the number of securities litigation cases presiding over, 0 otherwise
IndivPlntff	=	1 if the lead plaintiff was an individual, 0 otherwise
LogAssts	=	Log of total assets (*AT*)
LogMaxDmg	=	Log of maximum damages (highest market capitalization during the class period less market capitalization two days after the end of the class period) scaled by 100
LogSettle	=	Log of the settlement amount
LrgeMktDecline	=	1 if the three-day market return centered on the end of the class period was in the lowest among all litigation filed in the same calendar year, 0 otherwise
MrktRtrnClss	=	Raw market return accumulated over the class period
NumSecurities	=	Number of unique securities related to the law suit
Restate	=	1 if the litigation relates to a restatement, 0 otherwise

References

Anderson J, Jennings M, Lowe D, Reckers P (1997) The mitigation of hindsight bias in judges' evaluation of auditor decisions. *Auditing: J. Practice Theory* 16(2):35–39.

Archarya V, DeMarzo P, Kremer I (2011) Endogenous information flows and the clustering of announcements. *Amer. Econom. Rev.* 101(7):2955–2979.

Baginski SP, Hassell JM, Pagach D (1995) Further evidence on nontrading-period information release. *Contemporary Accounting Res.* 12(1):207–221.

Bagnoli M, Kross W, Watts SG (2002) The information in management's expected earnings report date: A day late, a penny short. *J. Accounting Res.* 40(5):1275–1296.

Baker T, Griffith S (2010) *Ensuring Corporate Misconduct* (University of Chicago Press, Chicago).

Boudreau B, McCubbins M (2009) Competition in the courtroom: When does expert testimony improve jurors' decisions? *J. Empirical Legal Res.* 6(4):793–817.

Bruegger E, Dunbar F (2009) Estimating financial fraud damages with response coefficients. *J. Corporate Law* 35:11–70.

Cornerstone Research (2012) *Securities Class Action Filings: 2012 Year in Review* (Cornerstone Research, Washington, DC).

Diamond S, Rose M, Murphy B, Mexiner J (2011) Damage anchors on real juries. *J. Empirical Legal Stud.* 8(S1):148–178.

Donelson D, McInnis J, Mergenthaler R, Yu Y (2012) The timeliness of bad earnings news and litigation risk. *Accounting Rev.* 87(6): 1967–1991.

Doyle JT, Magilke MJ (2009) The timing of earnings announcements: An examination of the strategic disclosure hypothesis. *Accounting Rev.* 84(1):157–182.

Doyle JT, Magilke MJ (2016) The strategic timing of management forecasts. Working paper, Utah State University, Logan.

Duchin R, Sosyura D (2014) Safer ratios, riskier portfolios: Banks' response to government aid. *J. Financial Econom.* 113(1):1–28.

Ferrell A, Saha A (2007) The loss causation requirement of Rule 10b-5 causes of action: The implications of *Dura Pharmaceuticals, Inc. v. Broudo*. *Bus. Lawyer* 63(1):163–186.

Field L, Lowry M, Shu S (2005) Does disclosure deter or trigger litigation? *J. Accounting Econom.* 39(3):487–507.

Finnerty J, Pushner G (2002) An improved two-trader model for measuring damages in securities fraud class actions. *Stanford J. Law, Bus., Finance* 8(2):213–264.

Francis J, Pagach D, Stephan J (1992) The stock market response to earnings announcements released during trading versus nontrading periods. *J. Accounting Res.* 30(2):165–184.

Francis J, Philbrick D, Schipper K (1994) Shareholder litigation and corporate disclosures. *J. Accounting Res.* 32(2):137–164.

Gennotte G, Trueman B (1996) The strategic timing of corporate disclosures. *Rev. Financial Stud.* 9(2):665–690.

Greene E, Johns M, Bowman J (1999) The effects of injury severity on jury negligence decisions. *Law Human Behav.* 23(6):675–693.

Jenter D, Kanaan F (2015) CEO turnover and relative performance evaluation. *J. Finance* 70(5):2155–2183.

Johnson M, Kasznik R, Nelson K (2001) The impact of securities litigation reform on the disclosure of forward-looking information by high technology firms. *J. Accounting Res.* 39(2): 297–327.

Johnson M, Nelson K, Pritchard A (2007) Do the merits matter more? The impact of the Private Securities Litigation Reform Act. *J. Law, Econom., Organ.* 23(3):627–652.

Kadous K (2000) The effect of audit quality and consequence severity on juror evaluations of auditor responsibility for plaintiff losses. *Accounting Rev.* 75(3):327–341.

Kesan J, Ball G (2011) Judicial experience and the efficiency and accuracy of patent adjudication: An empirical analysis of the case for a specialized patent trial court. *Harvard J. Law Tech.* 24(2):393–467.

Kim I, Skinner D (2012) Measuring securities litigation risk. *J. Accounting Econom.* 53(1–2):290–310.

Lucca D, Moench E (2015) The pre-FOMC announcement drift. *J. Finance*. 70(1):329–371.

McShane B, Watson OP, Baker T, Griffith S (2012) Predicting securities fraud settlements and amounts: A hierarchical Bayesian model of federal securities class action lawsuits. *J. Empirical Legal Stud.* 9(3):482–510.

NERA Economic Consulting (2013) Recent trends in securities class action litigation: 2012 full-year review. Accessed January 12, 2016, http://www.nera.com/content/dam/nera/publications/archive2/PUB_Year_End_Trends_2012_1113.pdf.

Palmrose Z-V (1991) Trials of legal disputes involving independent auditors: Some empirical evidence. *J. Accounting Res.* 29(Supplement):149–185.

Patell J, Wolfson P (1982) Good news, bad news, and the intraday timing of corporate disclosures. *Accounting Rev.* 57(3): 509–527.

Piotroski JD, Roulstone DT (2005) Do insider trades reflect both contrarian beliefs and superior knowledge about future cash flow realizations? *J. Accounting Econom.* 39(1):55–81.

Prentice RA (2009) *The Ethical and Legal Environment of Accounting* (Engage Learning, Mason, OH).

PricewaterhouseCoopers (2011) Securities litigation study. Accessed January 12, 2016, http://www.pwc.com/us/en/forensic-services/publications/assets/2011-securities-litigation-study.pdf.

Pritchard AC, Sale H (2005) What counts as fraud? An empirical study of motions to dismiss under the Private Securities Litigation Reform Act. *J. Empirical Legal Stud.* 2(1):125–149.

Puhani PA (2000) The Heckman correction for sample selection and its critique. *J. Econom. Surveys* 14(1):53–68.

Seyhun NN (1992) Why does aggregate insider trading predict future stock returns? *Quart. J. Econom.* 107(4):1303–1331.

Shavell S (1982) The social versus the private incentive to bring suit in a costly legal system. *J. Legal Stud.* 11(2):333–340.

Skinner D (1994) Why firms voluntarily disclose bad news. *J. Accounting Res.* 32(1):38–60.

Skinner D (1997) Earnings disclosures and stockholder lawsuits. *J. Accounting Econom.* 23(3):38–60.

So EC, Wang S (2014) News-driven return reversals: Liquidity provision ahead of earnings announcements. *J. Financial Econom.* 114(1):20–35.

Tauchen G, Zhou H (2011) Realized jumps in financial markets and predicting credit spreads. *J. Econometrics* 160(1):102–118.

Tse S, Tucker J (2010) Within-industry timing of earnings warnings: Do managers herd? *Rev. Accounting Stud.* 15(4):879–914.