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Market Reaction to Earnings Surprise Warnings: The Incremental Effect of Shareholder Litigation Risk on the Warning Effect

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We examine the incremental effect of shareholder litigation risk on market reaction to earnings surprise warnings, that is, the warning effect. Prior research examines earnings warnings by firms reporting large earnings news (at least 1% of share price), and finds a negative warning effect for bad news firms but no warning effect for good news firms. We find similar results for a larger sample of firms. In addition, we find negative and positive warning effects, respectively, for firms reporting small bad and good earnings news, suggesting that the insignificant warning effect for good news firms is restricted to large earnings news. More importantly, we find that litigation risk magnifies the warning effect—for bad news firms, the warning effect is more negative for high-litigation-risk firms than for low-litigation-risk firms, but for good news firms, the warning effect is more positive for high-litigation-risk firms than for low-litigation-risk firms.

1. Introduction

Prior studies suggest that shareholder litigation risk is an important motivator for companies' disclosures (Skinner [1994, 1997]). Kasznik and Lev (1995; hereafter, KL) examine return responses to earnings surprise warnings, but the

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effects of shareholder litigation risk on those return responses have not previously been examined.¹ This issue has become more important as firms increasingly issue earnings surprise warnings. In this study, we examine differences in return responses to earnings warnings for firms with different levels of shareholder litigation risk estimated from a litigation-risk model.

Skinner (1997) finds that timely earnings disclosures, including earnings warnings, may lower settlement costs in the event a firm is sued by shareholders, but he also finds that firms issue earnings surprise warnings much more frequently in lawsuit quarters than in nonlawsuit quarters, and conjectures that managers may issue warnings when they believe their firms are likely to face litigation. Investors' response to earnings warnings would therefore depend on both the expected cost of litigation signaled by earnings warnings and the reduced settlement cost incurred by warning firms (more specifically, timely disclosers) in the event of a lawsuit. The net effect of these two litigation-risk-related influences is likely to affect market reactions to earnings surprise warnings (i.e., the *warning effect*, defined as the incremental price reaction to the earnings news reported by warning firms beyond the price reaction to similar earnings news reported by no-warning firms).² This paper provides empirical evidence on the incremental effect of shareholder litigation risk on the warning effect.

We first confirm KL's (1995) finding that among firms reporting large earnings news (absolute values of at least 1% of share price), the warning effect is negative for bad news firms but insignificant for good news firms.³ We extend KL by examining the warning effect for small earnings news (absolute values less than 1% of share price). This extension is motivated by prior studies showing that returns respond more strongly to small earnings surprises than to large earnings surprises (Freeman & Tse [1992]). We find negative and positive warning effects, respectively, for firms reporting small negative or positive earnings news. Thus, KL's conclusion that there is no warning effect for good news firms appears to be restricted to large-earnings-news firms.

Next, we investigate the incremental effect of shareholder litigation risk on the warning effect. We estimate shareholder litigation risk using firm characteristics before the warning quarter. Firms may face shareholder litigation risk when they fail to warn about bad earnings news that precedes a large stock price decline, and may issue earnings surprise warnings to reduce the expected cost of shareholder

1. An *earnings surprise warning* is a voluntary disclosure of earnings news prior to the formal earnings announcement date, and is sometimes referred to as *earnings guidance*. We use the term *earnings surprise warning* for both good and bad news voluntary disclosures to be consistent with prior research.

2. We measure the warning effect as the difference between the combined price reaction to earnings surprise warnings and earnings announcements of firms that warn about their earnings surprise and the price reaction to earnings announcements of firms with similar earnings news that do not warn.

3. We classify firms as having bad news in a particular quarter if their actual earnings are less than analysts' earnings forecasts for that quarter, and as having good news if actual earnings exceed analysts' forecasts.

lawsuits (Skinner [1994, 1997]).⁴ High-litigation-risk firms are more likely than low-litigation-risk firms to benefit when they warn about bad earnings news (through reduced expected litigation costs). However, bad earnings news warnings may not necessarily protect firms from litigation (Francis, Philbrick, & Schipper [1994]). Indeed, Skinner (1997) finds that firms issue significantly more earnings warnings in lawsuit quarters than in nonlawsuit quarters, suggesting that earnings warnings may signal to investors that the firm faces a high likelihood of lawsuits. This effect is likely to be more pronounced for high-litigation-risk firms expecting bad news. Consequently, the warning effect for bad news firms could be less negative, similar, or even more negative for high-litigation-risk firms when compared with low-litigation-risk firms. We find that among bad news firms, the warning effect is *more* negative for high-litigation-risk firms than for low-litigation-risk firms, suggesting that the costs of increased likelihood of shareholder lawsuit outweigh the potential benefit of reduced expected settlement costs from bad news warnings.⁵

Firms with good earnings news potentially face different incentives to issue earnings warnings than bad news firms. Lawsuits are typically initiated after large stock price declines, so failure to warn about good news, which on average increases stock prices, is not likely to lead to lawsuits. Instead, firms may face shareholder litigation risk when their stock price declines after managers issue overoptimistic earnings projections. To reduce the potential litigation cost, managers may avoid issuing good-news projections unless they believe the projections are likely to be met. Good news warnings may therefore signal management's confidence in its projections and increase the credibility of the good news. This effect is likely to be stronger for high-litigation-risk firms, since they are more vulnerable to lawsuits if good news predictions are overstated. Consequently, we expect good news warnings issued by high-litigation-risk firms to be more credible than those issued by low-litigation-risk firms, and therefore induce more positive market reaction than low-litigation-risk firms' good news warnings. Our results support this prediction.

For insight on the apparent negative effect of shareholder litigation risk on bad news firms' warning effect, we examine the relation between earnings warnings and the likelihood of shareholder litigation, and find that earnings warnings are associated with subsequent increased likelihood of lawsuits for bad news firms, but not for good news firms. Thus, the significantly negative effect of shareholder litigation risk on bad news firms' warning effect may be partly due to the increased likelihood of lawsuits signaled by earnings warnings.

This paper makes several contributions to the literature on voluntary management disclosures. We extend KL's finding of a negative warning effect for large-

4. Lev (1995) finds that a dramatic stock price decline may be a necessary but not sufficient condition for lawsuits.

5. This result is stronger for small-bad-news firms than for large-bad-news firms.

bad-news firms by documenting negative and positive warning effects, respectively, for firms reporting small bad and good earnings news. This suggests that KL's results are due to their selection of large-earnings-news firms. More importantly, we provide empirical evidence on the incremental effect of shareholder litigation risk on the warning effect, a previously unaddressed issue. For bad news firms, the warning effect is more negative for high-litigation-risk firms than for low-litigation-risk firms, but the opposite is true for good news firms. Finally, we find evidence that the significantly negative effect of shareholder litigation risk on bad news firms' warning effect may be partly because bad news warnings are associated with increased likelihood of lawsuits. Our results suggest that good news firms may have an incentive to warn about their good news while bad news firms do not, and that this incentive increases with litigation risk. However, managers of bad news firms who believe litigation is likely may issue warnings to reduce their expected litigation cost. Our results also suggest that studies of the warning effect that ignore the effect of shareholder litigation risk may understate the negative effect of bad news warnings and the positive effect of good news warnings for high-litigation-risk versus low-litigation-risk firms.

The next section discusses previous research and hypothesis development. Research methodology and variable definitions are discussed in Section 3. We report empirical tests and results in Section 4, and conclude with Section 5.

2. Previous Research and Hypothesis Development

2.1 Market Reaction to Earnings Surprise Warnings or the "Warning Effect"

Kasznik and Lev (1995) define the *warning effect* as warning firms' incremental market reaction to earnings news released on the warning and earnings announcement dates (i.e., *total earnings news*). Thus, the warning effect is the incremental cumulative abnormal return associated with warning firms' total earnings news (relative to no-warning firms with the same total earnings news). KL examine firms whose absolute total earnings news is at least 1 percent of their stock price, that is, large-bad-news and large-good-news firms. They find a significantly negative warning effect for large-bad-news firms and no warning effect for large-good-news firms.

Libby and Tan (1999) provide a plausible explanation for bad news firms' negative warning effect. They conduct an experiment in which analysts revise their forecasts after the bad earnings news warning (if any) and after the earnings announcement. When an earnings warning results in negative earnings surprises at both the warning and earnings announcement dates, the financial analysts in the experiment revise their forecasts twice, once at the warning date and again at the earnings announcement date. In contrast, the analysts only revise their forecasts once if the firm discloses all of its bad earnings news at the announcement date. They find that analysts' overall forecast revisions are more negative when negative

news is split between the warning and earnings announcement dates than when all the negative news is disclosed at the earnings announcement date. Their finding suggests that, controlling for total earnings news, warnings that result in negative earnings surprises at both the warning and earnings announcement dates induce more negative combined market reactions, consistent with KL's results.⁶

2.2 The Incremental Effect of Shareholder Litigation Risk

Although firms are not legally obligated to disclose their private information to investors, the SEC requires public companies to disclose material information in quarterly and annual reports. Companies are also required to disclose material information in a forthright and timely manner under Rule 10b-5 of the Securities Exchange Act of 1934 when an insider or the corporation is trading in the corporation's stock, and to update previously disclosed information that becomes inaccurate, incomplete, or misleading.⁷

Many securities class action suits allege violation of Rule 10b-5. Plaintiffs' attorneys typically initiate 10b-5 litigation when the stock price declines sharply after the firm announces earnings, alleging that managers withheld unfavorable information prior to the earnings announcement, that is, during the *class period*. To win damages, attorneys must show that plaintiffs suffered losses by basing investment decisions on the allegedly misleading information. In other words, they must show that plaintiffs' decisions would have been changed, and losses avoided, had the allegedly withheld information been disclosed promptly. Skinner (1994) suggests that managers issue warnings in part to reduce the expected costs of shareholder lawsuits. He finds stronger market reaction to bad news warnings than to good news warnings, and suggests that bad news preempted by warnings tends to be larger than good news preempted by warnings. Skinner (1997) finds that after controlling for estimated shareholder damages, more timely disclosures (e.g., forecasts, earnings preannouncements, or earnings announcements) are associated with smaller settlements.⁸ Early disclosers may reduce settlement amounts by shortening

6. Soffer, Thiagarajan, and Walther (2000) build on Libby and Tan (1999) to examine preannouncement strategies. They restrict their analysis to firms that preannounce earnings, and their analysis therefore provides no evidence on the warning effect or the incremental effect of shareholder litigation risk on the warning effect.

7. The Private Securities Litigation Reform Act of 1995 imposes several procedural limitations on federal securities class action lawsuits. The act aims to shift negotiating power from plaintiffs to defendants, but plaintiffs' attorneys sought to restore their bargaining power by filing multiple concurrent state court actions. Recently, Congress passed the Securities Litigation Uniform Standards Act of 1998 to preempt state court class action securities litigation. However, Prentice, Richardson, and Scholz (1999) argue that the Uniform Standards Act is unlikely to protect potential securities fraud defendants from liability.

8. Most shareholder lawsuits are settled out of court, many without a formal finding that the company was at fault (Alexander [1991]), consistent with managers' and plaintiff attorneys' incentives to settle (Niehaus & Roth [1999]). Some firms pay settlements on cases that are dismissed by the courts in exchange for agreements by the plaintiffs not to appeal the dismissal.

the class period, thereby reducing the class of plaintiffs and weakening the plaintiffs' argument that the firm caused shareholder losses by withholding information.

Timely disclosures may reduce settlement costs if the firm is sued, but earnings warnings may also signal increased likelihood of litigation. Skinner (1997) finds that earnings warnings occur much more frequently in lawsuit quarters than in nonlawsuit quarters, and suggests that managers tend to issue warnings when their private information indicates that a lawsuit is likely.⁹ However, Skinner (1997) finds that earnings warnings have a relatively small effect on settlement costs, suggesting that the negative impact from warnings signaling a higher likelihood of shareholder lawsuits may dominate reductions in settlement amounts from early disclosure. This effect is likely to be greater for firms that already face high shareholder litigation risk, and is the basis of our hypothesis on the incremental effect of shareholder litigation risk on bad news firms' warning effect:

Hypothesis 1: The warning effect for bad news firms with high litigation risk is more negative than the warning effect for bad news firms with low litigation risk.

Firms with good earnings news may face shareholder litigation risk if stock price declines coincide with overoptimistic earnings projections (Lev [1995]; Frankel, McNichols, & Wilson [1995]). Therefore, managers are only likely to warn about good news when they are confident of their expectations, and this may increase the credibility of good news warnings. This effect is likely to be stronger for high-litigation-risk firms, since they are more vulnerable to lawsuits if good news predictions are overstated. Consequently, high-litigation-risk firms' good news warnings may induce more positive market reactions than similar warnings by low-litigation-risk firms (Jennings [1987]; King, Pownall, & Waymire [1990]).¹⁰ This is the basis of our hypothesis on the incremental effect of shareholder litigation risk on good news firms' warning effect:¹¹

Hypothesis 2: The warning effect for good news firms with high litigation risk is more positive than the warning effect for good news firms with low litigation risk.

9. Similarly, Francis, Philbrick, and Schipper (1994) find no evidence that warnings necessarily reduce the chance of shareholder lawsuits.

10. King, Pownall, and Waymire (1990) suggest that the transaction cost savings induced by timely management voluntary disclosures depend on the credibility of disclosures. Jennings (1987) finds an additional price reaction following analyst revisions that confirm good news management forecasts but none following confirmation of bad news. This confirmation effect suggests that investors may view good news warnings more skeptically than bad news warnings. Therefore, the credibility effect is likely to be more pronounced for good news warnings than for bad news warnings.

11. We should note that firms may issue warnings for reasons other than to reduce expected litigation cost, including (1) managing expectations to ensure that the firm can meet or beat analyst expectations at the earnings announcement (e.g., Matsumoto [2002]); and (2) maintaining a credible disclosure reputation (e.g., Tucker [2004]).

3. Research Methodology

3.1 Sample Design and Data Collection

Firms must meet the following criteria to be included in our sample in any quarter: (1) actual quarterly earnings along with current-quarter and prior-quarter earnings announcement dates available on the *First Call Historical* database from 1995 to 1999; (2) at least one individual analyst forecast made within thirty days after a prior quarter's earnings announcement date on the *First Call Historical* database; (3) market value and book value of common stock available on the *Quarterly Compustat* database; and (4) daily security return data available on the *CRSP Daily Stock* database.

Criteria 1 through 3 are required to compute the firm's total earnings surprise, market value, and book value, and criterion 4 is required to calculate the firm's cumulative abnormal returns. Earnings surprise warnings are obtained from the *First Call Historical* database, and may be quantitative (i.e., point, range, maximum, and minimum estimates) or qualitative (e.g., "Our earnings may not meet expectations," or "Our revenues might exceed expectations").

Table 1 reports the filters we apply to obtain the final sample. There are 40,428 firm-quarter observations in our final sample after we remove outliers, consisting of 24,196 (59.85%) good news observations and 16,232 (40.15%) bad news observations.

3.2 Variable Definitions

3.2.1 Combined Window Cumulative Abnormal Returns

We compute market-adjusted (abnormal) returns as the firm's daily return minus the Center for Research in Security Prices (CRSP) daily equally weighted market return. The combined window cumulative abnormal returns (*CWCAR*) is the sum of 2 five-day cumulative abnormal returns: the warning window cumulative abnormal returns (*WWCAR*), and the earnings announcement window cumulative abnormal returns (*EWCAR*). Figure 1 shows the timeline for these two windows. For firm-quarters with earnings surprise warnings (warning firms), *WWCAR* is the five-day cumulative abnormal return centered on the warning date.¹² For firm-quarters with no earnings surprise warnings (no-warning firms), *WWCAR* is the mean five-day abnormal return from the thirty-first day after the prior quarter's earnings announcement date to two days before the current period's earnings announcement date.¹³ For all firm-quarters, *EWCAR* is the five-day cumulative abnormal return centered on the current quarter's earnings announcement.

12. We eliminate observations whose warning and earnings-announcement windows overlap from the sample.

13. We include no-warning firms' *WWCAR* in *CWCAR* so that both warning and no-warning firms' *CWCARs* are measured over ten days.

TABLE 1
Reconciliation of Sample Data^a

	Firm-Quarters	Firms
Firm-quarters from 1995 to 1999 with actual quarterly earnings announcement data ^b	155,933	11,901
<i>Removing the Following Items</i>		
Firm-quarters with missing prior quarter's earnings announcement date	(54,320)	(2,935)
Firm-quarters with missing individual analyst's forecast	(55,115)	(3,011)
Firm-quarters with missing return data ^c	(2,343)	(327)
Firm-quarters without SIC codes	(228)	(43)
	43,927	5,595
<i>Less: 2% total earnings news (TOTNEWS) outliers^d</i>	(878)	(42)
	43,049	5,553
<i>Less: Firm-quarters with missing market value (MV) 2% market value outliers^d</i>	(771)	(57)
	(845)	(103)
	41,433	5,393
<i>Less: Firm-quarters with missing market-to-book ratio (MB) 2% market-to-book ratio outliers^d</i>	(180)	(24)
	(825)	(47)
Final sample	<u>40,428</u>	<u>5,304</u>

^aThis table reports the sequential filters applied to obtain the sample for each model.

^bEarnings announcement data are from the *First Call Historical* database for consistency with the analysts' forecasts used to calculate total earnings news; we use Compustat earnings data if the *First Call* data are unavailable.

^cWe remove firm-quarters whose warning and earnings announcement windows overlap from our sample.

^dOutliers are observations whose total earnings news, market value, and/or market-to-book ratio are in the highest or lowest 1 percent of their respective distributions.

3.2.2 Earnings Surprise Warnings

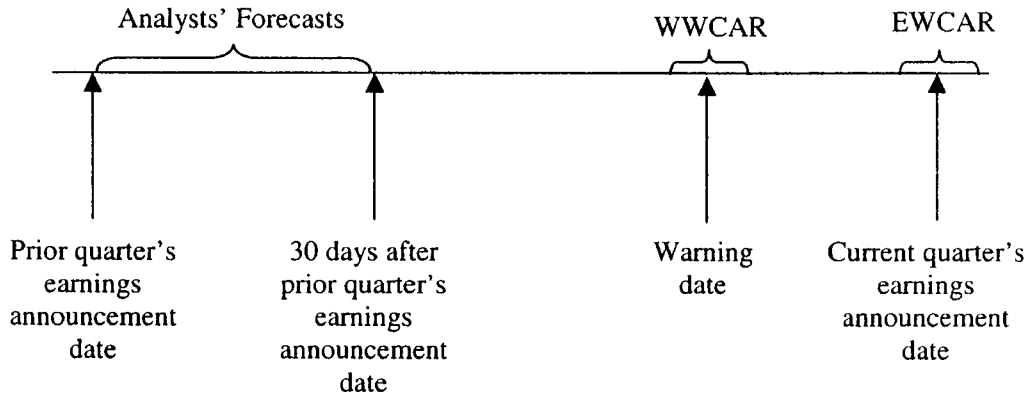
Earnings surprise warnings (*WARN*) are any form of earnings-related voluntary management disclosure made between the thirty-first day after the prior quarter's earnings announcement date and the current quarter's earnings announcement date (see the timeline in Figure 1). *WARN* takes a value of 1 for a firm-quarter in which management warns about an earnings surprise, and 0 otherwise.

3.2.3 Shareholder Litigation Risk

Shareholder litigation risk (*LITRISK*) is the risk of being sued by shareholders in class action lawsuits. Following Rogers and Stocken (2005), we estimate firms' litigation risk using a calendar-quarter logistic regression on lawsuit filings from 1996 to 1999 from Stanford Securities Class Action Clearinghouse (<http://securities>

FIGURE 1

A Timeline for Combined Window Cumulative Abnormal Returns



Cumulative abnormal returns for firm *i* in quarter *t* are defined as follows:

$CWCAR_{it}$, combined window cumulative abnormal returns, = $WWCAR_{it} + EWCAR_{it}$;

$EWCAR_{it}$, earnings announcement window cumulative abnormal returns, = $\sum_{j=EA_{it}-2}^{EA_{it}+2} AR_{ij}$; and

$WWCAR_{it}$, warning window cumulative abnormal returns, = $\sum_{j=EW_{it}-2}^{EW_{it}+2} AR_{ij}$ for warning firms and

$\sum_{j=EA_{it-1}+31}^{EA_{it}-2} AR_{ij} / T_{it} \times 5$ for no-warning firms.

AR_{ij} = firm *i*'s abnormal returns on day *j*;

EW_{it-1}, EW_{it} = firm *i*'s warning date for quarters *t*-1 and *t*, respectively;

EA_{it-1}, EA_{it} = firm *i*'s earnings announcement date for quarters *t*-1 and *t*, respectively; and

T_{it} = number of days from the thirty-first day after EA_{it-1} to two days before EA_{it} for firm *i*.

.stanford.edu). The dependent variable, $LAWSUIT_{iq}$, is 1 if the company is the subject of a lawsuit filed that quarter.¹⁴ The explanatory variables are firm size, stock trading variables (for example, turnover and returns), and industry membership. The model is as follows:

MODEL 1

$$\begin{aligned}
 LAWSUIT_{iq} = & \gamma_0 + \gamma_1 LOGSIZE_{iq} + \gamma_2 TURNOVER_{iq} + \gamma_3 BETA_{iq} \\
 & + \gamma_4 CARET_{iq} + \gamma_5 STDEVN_{iq} + \gamma_6 SKEW_{iq} + \gamma_7 MINRET_{iq} \quad (1) \\
 & + \gamma_8 BIOTECH_{iq} + \gamma_9 HARDWARE_{iq} + \gamma_{10} ELECTRONICS_{iq} \\
 & + \gamma_{11} RETAIL_{iq} + \gamma_{12} SOFTWARE_{iq} + \varepsilon_{iq},
 \end{aligned}$$

14. More precisely, if a date seventy-nine days preceding the filing date falls in that calendar quarter. Rogers and Stocken (2005) use this adjustment because Grundfest and Perino (1997) find that lawsuit filings follow the triggering event by an average of seventy-nine days.

where

$LAWSUIT_{iq}$	= 1 if a triggering event for a lawsuit for firm i occurs in quarter q —a triggering event is assumed to have occurred seventy-nine days before a lawsuit filing date as recorded by the Stanford Securities Class Action Clearinghouse;
$LOGSIZE_{iq}$	= logarithm of firm i 's market value at the beginning of quarter q ;
$TURNOVER_{iq}$	= firm i 's mean daily share volume in quarter q , divided by the mean number of shares outstanding on each day in the quarter;
$BETA_{iq}$	= firm i 's market model beta in quarter q , calculated using equal-weighted daily market returns;
$CARET_{iq}$	= firm i 's cumulative raw daily returns in quarter q ;
$STDEVN_{iq}$	= standard deviation of firm i 's daily returns in quarter q ;
$SKEW_{iq}$	= skewness of firm i 's daily returns in quarter q ;
$MINRET_{iq}$	= firm i 's smallest daily return in quarter q ;
$BIOTECH_{iq}$	= 1 if firm i is in the biotechnology industry (SIC codes 2830 to 2836), and zero otherwise;
$ELECTRONICS_{iq}$	= 1 if firm i is in the electronics industry (SIC codes 3570 to 3577), and zero otherwise;
$RETAIL_{iq}$	= 1 if firm i is in the retail industry (SIC codes 5200 to 5961), and zero otherwise; and
$SOFTWARE_{iq}$	= 1 if firm i is in the computer software industry (SIC codes 7371 to 7379), and zero otherwise.

We use the estimated coefficients from this logistic regression to estimate each sample firm's litigation risk. We classify firms in the top quartile of estimated litigation risk as *high-litigation-risk* firms, and classify the remaining firms as *low-litigation-risk* firms.¹⁵ We report estimation results for the litigation risk model (along with sensitivity test results described below) in Table 6.

3.2.4 Total Earnings News

We define total earnings news (*TOTNEWS*) as the difference between actual quarterly earnings per share (EPS) and the mean of individual analysts' quarterly EPS forecasts made within thirty days after the prior quarter's earnings announcement date, deflated by the stock price at the beginning of the current quarter. We classify firms as having *good news* when *TOTNEWS* is positive, and as having *bad news* when *TOTNEWS* is negative.

15. The top-quartile cutoff is based on all firms with available data on CRSP. High-litigation-risk firms comprise 20.3 percent of our final sample. We obtain qualitatively similar results when we classify firms above the median or the ninetyth percentile of predicted litigation risk as high-litigation-risk.

3.2.5 *Large versus Small Earnings News*

To examine the effect of earnings news magnitude on the warning effect and to control for the nonlinear relation between price reaction and earnings news (Freeman & Tse [1992]), we define large earnings news, *DLARGE*, to equal 1 if absolute *TOTNEWS* (price-deflated earnings news) is at least 0.01, and 0 otherwise.¹⁶

3.2.6 *Firm Size*

We use firm size (*LMV*, the logarithm of the firm's beginning-of-quarter market value) to control for differences in the predisclosure information environment (Atiase [1985]; Lang & Lundholm [1993]).

3.2.7 *Firm Growth*

We include beginning-of-quarter market-to-book value ratios (*MB*) in the model to control for the possibility that high-litigation-risk firms are "glamour" stocks, that is, firms with high expected growth rates and therefore high *MB*.

4. Empirical Tests and Results

4.1 Descriptive Statistics

We report descriptive statistics on the main returns-model variables in Panel A of Table 2. Mean values for bad news and good news firms, respectively, are -0.040 and 0.016 for combined window cumulative abnormal returns (*CWCAR*); -0.007 and 0.003 for total earnings news (*TOTNEWS*); \$1,888 million and \$2,111 million for market values (*MV*); and 2.8 and 3.2 for market-to-book-value ratios (*MB*). Statistics for warning firms, also in Panel A of Table 2, show that combined window cumulative abnormal returns and total earnings news for bad news firms are lower for the warning firms than for the full sample. Cumulative abnormal returns for good news firms are higher for the warning firms than for the full sample, but the warning firms' total earnings news is only slightly higher than the overall sample's news.

We compare returns and earnings news across risk levels in Panel B of Table 2. High-litigation-risk firms have significantly lower cumulative abnormal returns in the overall and bad news samples than low-litigation-risk firms. However, high-litigation-risk firms have significantly higher total earnings news in both cases. For good news firms, cumulative abnormal returns do not differ significantly across risk levels, but high-litigation-risk firms' mean total earnings news is significantly

16. We use 1 percent of stock price as the cutoff for large earnings news because KL restrict their analysis to earnings news exceeding this level. Of 40,428 firm-quarters in our final sample, 4,724 (11.69%) have large earnings news.

TABLE 2
Descriptive Statistics

Panel A: Distribution of dependent and independent variables for all observations and for warning firms^a

All Observations

	Mean	Std. Dev.	Max.	90%	75%	50%	25%	10%	Min.
Bad news (negative TOTNEWS) firms, $N = 16,232$									
CWCAR	-0.040	0.118	1.544	0.064	0.017	-0.024	-0.077	-0.162	-1.363
TOTNEWS	-0.007	0.010	-0.000	-0.000	-0.001	-0.003	-0.007	-0.017	-0.068
MV	1,888	4,490	48,261	4,675	1,429	415	140	66	22
MB	2.805	2.333	20.630	5.255	3.307	2.132	1.446	1.029	-2.809
Good news (positive TOTNEWS) firms, $N = 24,196$									
CWCAR	0.016	0.088	1.117	0.112	0.054	0.009	-0.028	-0.070	-0.804
TOTNEWS	0.003	0.005	0.042	0.007	0.003	0.001	0.000	0.000	0.000
MV	2,111	5,106	48,930	4,940	1,592	496	170	78	22
MB	3.219	2.710	20.908	6.199	3.836	2.389	1.596	1.142	-2.836

Warning Firms

	Mean	Std. Dev.	Max.	90%	75%	50%	25%	10%	Min.
Bad news (negative TOTNEWS) firms, $N = 2,099$									
CWCAR	-0.143	0.187	0.508	0.049	-0.029	-0.111	-0.228	-0.371	-1.363
TOTNEWS	-0.010	0.012	-0.000	-0.001	-0.003	-0.006	-0.014	-0.027	-0.067
MV	1,699	4,128	45,346	4,060	1,231	430	156	78	23
MB	3.027	2.370	20.630	5.681	3.596	2.381	1.594	1.119	-2.443
Good news (positive TOTNEWS) firms, $N = 681$									
CWCAR	0.048	0.146	0.981	0.205	0.122	0.034	-0.029	-0.092	-0.570
TOTNEWS	0.004	0.005	0.041	0.010	0.005	0.002	0.001	0.000	0.000
MV	2,325	5,275	46,872	5,467	1,959	606	205	96	22
MB	3.326	2.890	20.037	6.538	4.065	2.402	1.610	1.122	-2.836

Panel B: Comparison of high-litigation-risk and low-litigation-risk observations

All Observations

	High-Litigation-Risk Firms ($N = 848$)	Low-Litigation-Risk Firms ($N = 1,932$)	<i>t</i> -statistic to Test Difference In Means
CWCAR	-0.119	-0.086	-4.04
TOTNEWS	-0.006	-0.007	2.05
MV	3,954	930	12.97
MB	3.808	2.789	9.41

TABLE 2 (continued)

Bad News Firms

	High-Litigation-Risk Firms (<i>N</i> = 687)	Low-Litigation-Risk Firms (<i>N</i> = 1,412)	<i>t</i> -statistic to Test Difference in Means
CWCAR	-0.159	-0.135	-2.75
TOTNEWS	-0.008	-0.011	5.81
MV	3,553	796	11.58
MB	3.645	2.726	8.09

Good News Firms

	High-Litigation-Risk Firms (<i>N</i> = 161)	Low-Litigation-Risk Firms (<i>N</i> = 520)	<i>t</i> -statistic to Test Difference in Means
CWCAR	0.047	0.050	0.20
TOTNEWS	0.003	0.004	-2.67
MV	5,666	1,291	6.54
MB	4.504	2.961	5.27

Panel C: Correlation matrices^a

	TOTNEWS	LMV	MB	WARN	LITRISK
Bad news (negative TOTNEWS) firms, <i>N</i> = 16,232					
CWCAR	0.148 (<i><</i> 0.001) ^b	0.060 (<i><</i> 0.001)	-0.080 (<i><</i> 0.001)	-0.324 (<i><</i> 0.001)	-0.046 (<i><</i> 0.001)
TOTNEWS		0.333 (<i><</i> 0.001)	0.132 (<i><</i> 0.001)	-0.143 (<i><</i> 0.001)	0.086 (<i><</i> 0.001)
LMV			0.201 (<i><</i> 0.001)	0.007 (0.379)	0.475 (<i><</i> 0.001)
MB				0.042 (<i><</i> 0.001)	0.172 (0.210)
WARN					0.117 (<i><</i> 0.001)
Good news (positive TOTNEWS) firms, <i>N</i> = 24,196					
CWCAR	0.104 (<i><</i> 0.001)	-0.062 (<i><</i> 0.001)	-0.018 (0.006)	0.045 (<i><</i> 0.001)	-0.003 (0.621)
TOTNEWS		-0.149 (<i><</i> 0.001)	-0.125 (<i><</i> 0.001)	0.020 (0.002)	-0.096 (<i><</i> 0.001)
LMV			0.225 (<i><</i> 0.001)	0.018 (0.004)	0.508 (<i><</i> 0.001)
MB				0.020 (0.002)	0.224 (<i><</i> 0.001)
WARN					0.028 (<i><</i> 0.001)

TABLE 2 (continued)

^aVariable definitions:

CWCAR = combined window cumulative abnormal returns, the sum of five-day cumulative abnormal returns in the warning and earnings announcement windows. For firm-quarters with management warnings, the warning window cumulative abnormal returns are centered on the warning date. For firm-quarters with no management warning, the warning window cumulative abnormal returns are the five-day mean of abnormal returns earned from the thirty-first day after the prior quarter's earnings announcement date to two days before the current period's earnings announcement date. For all firm-quarters, the earnings announcement window cumulative abnormal returns are centered on the current quarter's earnings announcement date.

TOTNEWS = total earnings news, the actual quarterly EPS minus the mean of individual analysts' quarterly EPS forecasts made within thirty days after the prior quarter's earnings announcement date, deflated by the stock price at the beginning of the current quarter.

WARN = 1 for a firm-quarter in which management warns (i.e., issues any earnings-related voluntary management disclosure between the thirty-first day after the prior quarter's earnings announcement date and the current quarter's earnings announcement date), and 0 otherwise.

LITRISK = shareholder litigation risk: 1 if the firm's predicted risk of a lawsuit during the quarter is in the top quartile, and zero otherwise.

MV = the firm's market value: the product of the number of shares outstanding and the stock price at the beginning of the quarter.

LMV = the logarithm of the firm's market value (MV) at the beginning of the quarter.

MB = the firm's beginning-of-quarter market-to-book-value ratio calculated as market value divided by the book value of common equity.

^bThe *p*-value is reported in parentheses.

lower than low-litigation-risk firms' news, suggesting that high-litigation-risk firms issue warnings at lower earnings news-magnitude thresholds.

Panel C of Table 2 reports correlations for good news and bad news firms. Combined window cumulative abnormal returns are significantly positively correlated with total earnings news for both bad news and good news firms. The relation between cumulative abnormal returns and warnings is significantly negative for bad news firms (the correlation is -0.32), but significantly positive for good news firms (the correlation is 0.05), suggesting a negative warning effect for bad news and a smaller positive warning effect for good news. Cumulative abnormal returns are significantly negatively correlated with litigation risk for bad news firms, but the relation for good news firms is statistically insignificant.

4.2 The Relation of News, Warning Decision, and Litigation Risk

Panel A of Table 3 reports the association between types of news and earnings surprise warnings. Warnings occur in 6.88 percent of the firm-quarters in our sample, indicating that warnings are rare, consistent with KL. Earnings surprise warnings are more common among bad news firms than good news firms—12.93 percent of bad news firms warn, compared with 2.81 percent of good news firms. This difference is statistically significant at better than the 1 percent level.

Panel B of Table 3 reports the association between litigation risk and warnings.

TABLE 3
Earnings News, Warning, and Litigation Risk

<i>Panel A: The relation between news and warning</i>			
All Firms	Warning Firms	No-Warning Firms	Total
Bad news firms	2,099 (12.93%)	14,133 (87.07%)	16,232 (100%)
Good News Firms	681 (2.81%)	23,515 (97.19%)	24,196 (100%)
Total	2,780 (6.88%)	37,648 (93.12%)	40,428 (100%)
Chi-square (χ^2) = 1,552.71 <i>p</i> -value = < 0.001			
<i>Panel B: Litigation risk and earnings warning</i>			
All Firms	Warning Firms	No-Warning Firms	Total
High-litigation-risk firms	848 (10.34%)	7,355 (89.66%)	8,203 (100%)
Low-litigation-risk firms	1,932 (6.00%)	30,293 (94.00%)	32,225 (100%)
Total	2,780 (6.88%)	37,648 (93.12%)	40,428 (100%)
Chi-square (χ^2) = 192.53 <i>p</i> -value = < 0.001			
<i>Bad News Firms</i>			
	Warning Firms	No-Warning Firms	Total
High-litigation-risk firms	687 (20.55%)	2,656 (79.45%)	3,343 (100%)
Low-litigation-risk firms	1,412 (10.96%)	11,477 (89.04%)	12,899 (100%)
Total	2,099 (12.93%)	14,133 (87.07%)	16,232 (100%)
Chi-square (χ^2) = 217.07 <i>p</i> -value = < 0.001			
<i>Good News Firms</i>			
	Warning Firms	No-Warning Firms	Total
High-litigation-risk firms	161 (3.31%)	4,699 (96.69%)	4,860 (100%)
Low-litigation-risk firms	520 (2.69%)	18,816 (97.31%)	19,336 (100%)
Total	681 (2.81%)	23,515 (97.19%)	24,196 (100%)
Chi-square (χ^2) = 5.52 <i>p</i> -value = < 0.019			

TABLE 3 (continued)

Panel C: Litigation risk and types of warnings

All Firms

	Type of Warning					
	Point	Range	Max.	Min.	Other	Total
High-litigation-risk ^a firms	280 (33.02%)	344 (40.57%)	72 (8.49%)	21 (2.48%)	131 (15.45%)	848 (100%)
Low-litigation-risk firms	542 (28.05%)	859 (44.46%)	197 (10.20%)	91 (4.71%)	243 (12.58%)	1,932 (100%)
Total	822 (29.57)	1,203 (43.27)	269 (9.68%)	112 (4.03%)	374 (13.45%)	2,780 (100%)
Chi-square (χ^2) = 19.661	p -value = < 0.001					

Bad News Firms

	Type of Warning					
	Point	Range	Max.	Min.	Other	Total
High-litigation-risk firms	185 (26.93%)	297 (43.23%)	72 (10.48%)	6 (0.87%)	127 (18.49%)	687 (100%)
Low-litigation-risk firms	325 (23.02%)	654 (46.32%)	192 (13.60%)	10 (0.71%)	231 (23.02%)	1,412 (100%)
Total	510 (24.30%)	951 (45.31%)	264 (12.58%)	16 (0.76%)	358 (17.06%)	2,099 (100%)
Chi-square (χ^2) = 8.843	p -value = 0.066					

Good News Firms

	Type of Warning					
	Point	Range	Max.	Min.	Other	Total
High-litigation-risk firms	95 (59.01%)	47 (29.19%)	0 (0.00%)	15 (9.32%)	4 (2.48%)	161 (100%)
Low-litigation-risk firms	217 (41.73%)	205 (39.42%)	5 (0.96%)	81 (15.58%)	12 (2.31%)	520 (100%)
Total	312 (45.81%)	252 (37.00%)	5 (0.73%)	96 (14.10%)	16 (2.35%)	681 (100%)
Chi-square (χ^2) = 16.467	p -value = 0.003					

High-litigation-risk firms are more likely to warn about their earnings news than are low-litigation-risk firms, and the difference is more pronounced for bad news firms than for good news firms.¹⁷ This is consistent with Skinner's (1994) conjec-

17. For example, among bad news firms, 20.55 percent of high-litigation-risk firms issue warnings, compared with 10.96 percent of low-litigation-risk firms. High-litigation-risk firms are 20.60 percent (3,343/16,232) of the bad news sample, but they issue 32.73 percent of the bad-news-firm warnings (687/2,099). This difference is significant at better than the 1 percent significance level.

TABLE 3 (continued)

Panel D: The timing of warnings (by fiscal quarter), earnings news, and litigation risk

All Firms	Fiscal Quarter				Total
	1st	2nd	3rd	4th	
Bad news firms	408 (19.44%)	593 (28.25%)	607 (28.92%)	491 (23.39%)	2,099 (100%)
Good news firms	180 (26.43%)	185 (27.17%)	132 (19.38%)	184 (27.02%)	681 (100%)
Total	588 (21.15%)	778 (27.99%)	739 (26.58%)	675 (24.28%)	2,780 (100%)
Chi-square (χ^2) = 32.480 <i>p</i> -value = < 0.001					

All Firms	Fiscal Quarter				Total
	1st	2nd	3rd	4th	
High-litigation-risk firms	174 (20.52%)	227 (26.77%)	245 (28.39%)	202 (23.82%)	848 (100%)
Low-litigation-risk firms	414 (21.43%)	551 (28.52%)	494 (25.57%)	473 (24.48%)	1,932 (100%)
Total	588 (21.15%)	778 (27.99%)	739 (26.58%)	675 (24.28%)	2,780 (100%)
Chi-square (χ^2) = 3.429 <i>p</i> -value = 0.331					

Bad News Firms	Fiscal Quarter				Total
	1st	2nd	3rd	4th	
High-litigation-risk firms	133 (19.36%)	189 (27.51%)	206 (29.99%)	159 (23.14%)	687 (100%)
Low-litigation-risk firms	275 (19.48%)	404 (28.61%)	401 (28.40%)	332 (23.51%)	1,412 (100%)
Total	408 (19.44%)	593 (28.25%)	607 (28.92%)	491 (23.39%)	2,099 (100%)
Chi-square (χ^2) = 0.630 <i>p</i> -value = 0.890					

Good News Firms	Fiscal Quarter				Total
	1st	2nd	3rd	4th	
High-litigation-risk firms	41 (25.47%)	38 (23.60%)	39 (24.22%)	43 (26.71%)	161 (100%)
Low-litigation-risk firms	139 (26.73%)	147 (28.27%)	93 (17.88%)	141 (27.12%)	520 (100%)
Total	180 (26.43%)	185 (27.17%)	132 (19.38%)	184 (27.02%)	681 (100%)
Chi-square (χ^2) = 3.616 <i>p</i> -value = 0.306					

*Firms are labeled *high-litigation-risk* if their predicted risk of a lawsuit during the quarter is in the top quartile; otherwise, they are labeled *low-litigation-risk*.

ture that firms use timely earnings disclosures to reduce expected litigation cost, a tendency that is likely to increase with litigation risk.

We report differences in types of warnings (point, range, maximum, or minimum earnings warnings, or nonearnings warnings) across litigation-risk classes in Panel C of Table 3. The number of firms reporting each type of news differs by only a few percentage points between the high- and low-litigation-risk groups. High-litigation-risk firms issue point forecasts significantly more frequently than do low-litigation-risk firms (5% significance level; results are not reported in the tables). The high incidence of good news warnings issued as point forecasts among high-litigation-risk firms is consistent with our conjecture that those firms tend to issue good news warnings only when they are relatively confident of their predictions. Differences by news type are much more pronounced than the litigation-risk differences. Bad news firms tend to issue point forecasts less frequently than good news firms (24.30% of bad news warnings are point forecasts, versus 45.81% for good news firms).¹⁸ Finally, we report the distribution of earnings warnings across fiscal quarters in Table 3, Panel D.¹⁹

4.3 Regression Analysis

4.3.1 Market Reaction to Earnings Surprise Warnings or the “Warning Effect”

We use the following model to investigate the warning effect.

MODEL 2

$$\begin{aligned} CWCAR_{it} = & \alpha_0 + \alpha_1 DLARGE_{it} + \alpha_2 WARN_{it} + \alpha_3 (WARN_{it} \times DLARGE_{it}) \\ & + \alpha_4 TOTNEWS_{it} + \alpha_5 (TOTNEWS_{it} \times DLARGE_{it}) \\ & + \alpha_6 (TOTNEWS_{it} \times WARN_{it}) + \alpha_7 (TOTNEWS_{it} \times WARN_{it} \\ & \times DLARGE_{it}) + \alpha_8 LMV_{it} + \alpha_9 MB_{it} + \varepsilon'_{it} \end{aligned} \quad (2)$$

where

$CWCAR_{it}$ = firm i 's combined window cumulative abnormal returns in quarter t ;

18. Bad news firms also issue more maximum and “other” (i.e., nonearnings) warnings (12.58% and 17.06%, respectively, of bad news firms’ warnings are maximum or other forecasts). In contrast, 0.73 percent of good news warnings are in the form of a maximum forecast, while 2.35 percent are “other” forecasts. Bad news firms issue just 0.76 percent of their warnings in the form of a minimum, compared with 14.10 percent of good news firms’ warnings.

19. Among bad news firms, earnings warnings occur less frequently in the first and fourth quarters (19.4% and 23.4%, respectively) than in the second and third quarters (28.3% and 28.9%, respectively). Among good news firms, earnings warnings are more evenly distributed, but are less common in the third quarter (19.4%) than in other quarters (the range is from 26.4% to 27.2%). We find no significant differences in the distribution of warnings by firms’ risk levels.

- $DLARGE_{it}$ = 1 if the absolute value of firm i 's $TOTNEWS$ in quarter t is at least 0.01, and zero otherwise;
- $WARN_{it}$ = 1 if firm i issues a warning in quarter t , and zero otherwise;
- $TOTNEWS_{it}$ = firm i 's total earnings news, actual EPS in quarter t minus the mean of individual analysts' quarterly EPS forecasts made within thirty days after the prior quarter's earnings announcement date, deflated by firm i 's stock price at the beginning of quarter t ;
- LMV_{it} = logarithm of firm i 's market value at the beginning of quarter t ; and
- MB_{it} = firm i 's market-to-book value ratio at the beginning of quarter t .

The coefficient of $TOTNEWS_{it}$, $\hat{\alpha}_4$, measures the association between total earnings news and returns for no-warning firms with small total earnings news, and the coefficient of $TOTNEWS_{it} \times DLARGE_{it}$, $\hat{\alpha}_5$, is the no-warning firms' incremental coefficient for large total earnings news. Thus $\hat{\alpha}_4 + \hat{\alpha}_5$ measures the relation between total earnings news and returns for no-warning firms with large total earnings news. The coefficient of $WARN_{it}$, $\hat{\alpha}_2$, is the incremental intercept coefficient for warning firms relative to no-warning firms. The coefficient of $TOTNEWS_{it} \times WARN_{it}$, $\hat{\alpha}_6$, is the incremental total earnings news coefficient for warning firms with small total earnings news, relative to no-warning firms with small total earnings news; and $\hat{\alpha}_7$, the coefficient of $TOTNEWS_{it} \times WARN_{it} \times DLARGE_{it}$, is the incremental total earnings coefficient for warning firms with large total earnings news. Thus, $\hat{\alpha}_6 + \hat{\alpha}_7$ is the incremental slope coefficient for warning firms with large total earnings news relative to no-warning firms with large total earnings news. If the warning effect is negative for bad news firms, then $\hat{\alpha}_2$ would be negative and both $\hat{\alpha}_6$ and $\hat{\alpha}_6 + \hat{\alpha}_7$ would be positive. If the warning effect is positive for good news firms, then $\hat{\alpha}_2$, $\hat{\alpha}_6$ and $\hat{\alpha}_6 + \hat{\alpha}_7$ would be positive.

We estimate the returns models separately for firms issuing warnings in the form of point estimates, or point/range estimates, because return responses to earnings warnings may depend on the type of warning. Corporate acquisitions may also contaminate our results if firms involved in acquisitions issue warnings more frequently to increase transparency and secure more favorable terms for their acquisitions. We therefore also estimate the model after eliminating firms with acquisition-related cash flows on Compustat (quarterly data item 94). We obtain similar results for most estimations, and focus on the full sample in our discussion except where the warning-type and nonacquisition samples yield different results.

We report estimation results for Model 2 separately for bad news and good news firms in Panels A and B, respectively, of Table 4. The warning effect is negative for bad new firms with both small and large total earnings news. For small-bad-news firms, the differential warning-firm intercept term ($\hat{\alpha}_2$, the $WARN_{it}$ coefficient) is significantly negative, and the differential slope coefficient on earnings news ($\hat{\alpha}_6$, the $TOTNEWS_{it} \times WARN_{it}$ coefficient) is significantly positive, so both the intercept and earnings news coefficients contribute to a negative warning

TABLE 4
The Relation between Returns and Earnings Surprise Warnings
(the “Warning Effect”)

<i>MODEL 2^a</i>						
$CWCAR_{it} = \alpha_0 + \alpha_1 DLARGE_{it} + \alpha_2 WARN_{it} + \alpha_3 (WARN_{it} \times DLARGE_{it}) + \alpha_4 TOTNEWS_{it}$ $+ \alpha_5 (TOTNEWS_{it} \times DLARGE_{it}) + \alpha_6 (TOTNEWS_{it} \times WARN_{it})$ $+ \alpha_7 (TOTNEWS_{it} \times WARN_{it} \times DLARGE_{it}) + \alpha_8 LMV_{it} + \alpha_9 MV_{it} + \varepsilon_{it}$						
<i>Panel A: Bad news (negative TOTNEWS) firms</i>						
Independent Variables	Est. Coeff.	Model 2	Point	Point and Range	Model 2, No Acq.	Point and Range, No Acq.
Intercept	$\hat{\alpha}_0$	-0.0155 (-3.59)	-0.0166 (-4.13)	-0.0148 (-3.48)	-0.0122 (-2.46)	-0.0109 (-2.24)
DLARGE	$\hat{\alpha}_1$	-0.0174 (-3.62)	-0.0169 (-3.91)	-0.0174 (-3.77)	-0.0170 (-3.23)	-0.0172 (-3.37)
WARN	$\hat{\alpha}_2$	-0.0783 (-13.98)	-0.0613 (-7.42)	-0.0854 (-13.97)	-0.0778 (-11.19)	-0.0885 (-11.61)
WARN × DLARGE	$\hat{\alpha}_3$	-0.0525 (-4.69)	-0.0697 (-3.57)	-0.0599 (-4.59)	-0.0548 (-4.34)	-0.0479 (-3.29)
TOTNEWS	$\hat{\alpha}_4$	2.7572 (6.47)	2.6557 (6.93)	2.7550 (6.71)	2.7535 (5.74)	2.7760 (5.97)
TOTNEWS × DLARGE	$\hat{\alpha}_5$	-2.2350 (-4.91)	-2.1385 (-5.23)	-2.2312 (-5.09)	-2.1991 (-4.32)	-2.2195 (-4.50)
TOTNEWS × WARN	$\hat{\alpha}_6$	4.9877 (4.30)	8.3945 (4.46)	3.8836 (3.03)	4.8960 (3.57)	3.7788 (2.49)
TOTNEWS × WARN × DLARGE	$\hat{\alpha}_7$	-4.9381 (-4.06)	-9.5195 (-4.78)	-4.6229 (-3.40)	-4.9329 (-3.46)	-4.2474 (-2.67)
LMV	$\hat{\alpha}_8$	0.0025 (4.14)	0.0017 (3.00)	0.0020 (3.47)	0.0019 (2.75)	0.0014 (2.14)
MB	$\hat{\alpha}_9$	-0.0049 (-12.92)	-0.0028 (-7.95)	-0.0042 (-11.23)	-0.0052 (-12.19)	-0.0046 (-10.96)
Coefficient on large total earnings news for no-warning firms	$\hat{\alpha}_4 + \hat{\alpha}_5$	0.5221 (3.11)	0.5172 (3.43)	0.5237 (3.24)	0.5543 (3.09)	0.5565 (3.20)
Differential warning coefficient for large-total-earnings news	$\hat{\alpha}_6 + \hat{\alpha}_7$	0.0496 (0.14)	-1.1250 (-1.73)	-0.7394 (-1.61)	-0.0369 (0.10)	-0.4687 (-0.97)
Coefficient on large earnings news for warning firms	$\hat{\alpha}_4 + \hat{\alpha}_5 + \hat{\alpha}_6 + \hat{\alpha}_7$	0.5717 (1.76)	-0.6078 (-0.96)	-0.2156 (-0.50)	0.5174 (1.47)	0.0879 (0.20)
Adj. R^2		0.136	0.050	0.112	0.136	0.111
N		16,232	14,463	15,594	12,941	12,443

TABLE 4 (*continued*)

Panel B: Good news (positive TOTNEWS) firms

Independent Variables	Est. Coeff.	Model 2	Point	Point and Range	Model 2, No Acq.	Point and Range, No Acq.
Intercept	$\hat{\alpha}_0$	0.0156 (6.15)	0.0147 (5.83)	0.0155 (6.08)	0.0154 (5.18)	0.0153 (5.15)
DLARGE	$\hat{\alpha}_1$	0.0502 (9.21)	0.0504 (9.37)	0.0502 (9.23)	0.0531 (8.87)	0.0531 (8.89)
WARN	$\hat{\alpha}_2$	0.0027 (0.52)	-0.0104 (-1.49)	0.0023 (0.41)	0.0062 (0.96)	0.0024 (0.35)
WARN × DLARGE	$\hat{\alpha}_3$	0.0968 (3.34)	-0.0124 (-0.19)	0.0337 (0.91)	0.1065 (3.21)	0.0519 (1.26)
TOTNEWS	$\hat{\alpha}_4$	4.8163 (16.74)	4.8408 (17.04)	4.8190 (16.78)	4.4807 (13.71)	4.4795 (13.73)
TOTNEWS × DLARGE	$\hat{\alpha}_5$	-5.6908 (-14.83)	-5.7181 (-15.10)	-5.6941 (-14.87)	-5.4993 (-12.81)	-5.4984 (-12.83)
TOTNEWS × WARN	$\hat{\alpha}_6$	7.9176 (5.12)	13.9863 (5.69)	8.2621 (4.85)	9.1573 (4.94)	11.6523 (5.75)
TOTNEWS × WARN × DLARGE	$\hat{\alpha}_7$	-9.0465 (-4.12)	-9.5269 (-2.00)	-4.8409 (-1.80)	-11.7397 (-4.60)	-10.1764 (-3.35)
LMV	$\hat{\alpha}_8$	-0.0020 (-5.24)	-0.0018 (-5.24)	-0.0019 (-5.16)	-0.0018 (-4.17)	-0.0018 (-4.12)
MB	$\hat{\alpha}_9$	0.0005 (2.35)	0.0005 (2.52)	0.0005 (2.31)	0.0024 (0.96)	0.0022 (0.87)
Coefficient on large total earnings news for no-warning firms	$\hat{\alpha}_4 + \hat{\alpha}_5$	-0.8745 (-3.47)	-0.8774 (-3.52)	-0.8752 (-3.48)	-1.0186 (-3.69)	-1.0189 (-3.70)
Differential warning coefficient for large-total-earnings news	$\hat{\alpha}_6 + \hat{\alpha}_7$	-1.1289 (-0.72)	4.4594 (1.09)	3.4213 (1.64)	-2.5825 (-1.47)	1.4759 (0.65)
Coefficient on large earnings news for warning firms	$\hat{\alpha}_4 + \hat{\alpha}_5 + \hat{\alpha}_6 + \hat{\alpha}_7$	-2.0034 (-1.30)	3.5821 (0.88)	2.5461 (1.23)	-3.6011 (-2.08)	0.4570 (0.20)
Adj. R^2		0.029	0.024	0.028	0.028	0.028
N		24,196	23,827	24,079	18,251	18,165

t-statistics are reported in parentheses.

^aVariable definitions:

DLARGE = 1 if the absolute value of TOTNEWS is at least 0.01, and 0 otherwise.

Other variables are defined in Table 2.

effect for small-bad-news firms. The differential intercept term for large-bad-news warning firms ($\hat{\alpha}_3$, the $WARN_{it} \times DLARGE_{it}$ coefficient) is significantly negative. The overall slope coefficient for large-bad-news firms ($\hat{\alpha}_4 + \hat{\alpha}_5$) is significantly positive, but the overall slope coefficient for large-bad-news warning firms ($\hat{\alpha}_4 + \hat{\alpha}_5 + \hat{\alpha}_6 + \hat{\alpha}_7$) is statistically insignificant.²⁰ Thus, large-bad-news firms have a negative warning effect through the intercept term, consistent with KL.

Results for good news firms are in Panel B. We find insignificant warning effects for good news firms with large total earnings news, consistent with KL (that is, the large-earnings-news warning firms' differential intercept and earnings coefficients are both statistically insignificant at the 5% level).²¹ For firms with small total earnings news, the differential response to earnings news is significantly higher for warning firms than for no-warning firms, indicating a significant warning effect. The differential intercepts for warning firms are statistically insignificant. Thus, good news firms with small total earnings news have a positive warning effect through the total-earnings-news coefficient.

The negative warning effect for bad news firms may be due to differences in earnings permanence. Specifically, a given amount of bad news may be associated with worse future performance for warning firms than for no-warning firms, and the negative warning effect could be a consequence of this difference. We examine this possibility by comparing changes in quarterly earnings that precede and follow the current (warning) quarter. We find that earnings changes ending in the warning quarter are significantly more negative for warning firms than for no-warning firms, consistent with a higher frequency of warnings as earnings deteriorate. In the year following the warning, earnings on average increase for warning and no-warning groups, consistent with mean-reversion. More importantly, the warning firms have significantly *higher* earnings changes following the warning than no-warning firms. Thus, the negative warning effect for bad news firms does not appear to be because warning firms have worse future earnings performance than no-warning firms.

20. The negative differential slope coefficients for firms reporting large earnings news ($TOTNEWS_{it} \times DLARGE_{it}$ and $TOTNEWS_{it} \times WARN_{it} \times DLARGE_{it}$) suggest that the relation between warning firms' earnings news and returns is weaker for large bad news than for small bad news (Freeman & Tse [1992]).

21. This result is for warnings issued in the form of a point or range forecast. The warning firms' differential large-earnings coefficient is significantly positive when we include other warnings (i.e., maximum or minimum earnings predictions or qualitative projections). The positive coefficient is consistent with a positive warning effect for firms with large earnings news. The difference in the coefficients for the full sample and for point and range forecasts in this table and some later tables suggests that some observations may be influential, particularly for large-earnings-news subsamples (all estimations are after eliminating the most extreme 2 percent of the explanatory variable observations). However, our primary estimation results in this and subsequent tables are consistent across subsamples (e.g., coefficient sums to test the warning effect). Furthermore, we obtain results consistent with those we report in the tables after we eliminate the next most extreme 2 percent of the large-earnings-news observations, and we conclude that our primary results are not likely to be due to a few influential observations.

4.3.2 The Incremental Effect of Shareholder Litigation Risk

We examine the incremental effect of shareholder litigation risk on the warning effect using the following model:

MODEL 3

$$\begin{aligned}
 CWCAR_{it} = & \beta_0 + \beta_1 WARN_{it} + \beta_2 LITRISK_{it} + \beta_3 (WARN_{it} \times LITRISK_{it}) \\
 & + \beta_4 TOTNEWS_{it} + \beta_5 (TOTNEWS_{it} \times WARN_{it}) \\
 & + \beta_6 (TOTNEWS_{it} \times LITRISK_{it}) + \beta_7 (TOTNEWS_{it} \times WARN_{it} \\
 & \times LITRISK_{it}) + \beta_8 LMV_{it} + \beta_9 MB_{it} + \varepsilon''_{it},
 \end{aligned} \tag{3}$$

where

$LITRISK_{it} = 1$ if firm i 's predicted risk of a lawsuit in quarter t is in the top quartile, and zero otherwise.

We estimate Model 3 separately for bad news and good news firms. To simplify the exposition, we analyze small- and large-total-news firms separately. Panels A and B of Table 5 report results for small-bad-news firms and large-bad-news firms, respectively.

In Panel A, the incremental intercept term for bad news warning firms with low litigation risk, $\hat{\beta}_1$, is significantly negative, while those firms' incremental total-earnings news slope coefficient, $\hat{\beta}_5$, is positive and significant in some models but not in others. These results suggest that the warning effect is negative for bad news firms with small total earnings news, consistent with the results in Table 4. The incremental intercept term for high-risk warning firms ($\hat{\beta}_3$, the $WARN_{it} \times LITRISK_{it}$ coefficient) is insignificant, but those firms' incremental total-earnings-news coefficient ($\hat{\beta}_7$, the $TOTNEWS_{it} \times WARN_{it} \times LITRISK_{it}$ coefficient) is significantly positive, so the warning effect for high-litigation-risk firms with small total bad earnings news is *more* negative than that of low-litigation-risk firms.

In Panel B, the incremental intercept term for high-litigation-risk warning firms with large bad news ($\hat{\beta}_3$, the $WARN_{it} \times LITRISK_{it}$ coefficient) is significantly positive, suggesting a positive warning effect. However, the incremental total-earnings-news coefficient ($\hat{\beta}_7$, the $TOTNEWS_{it} \times WARN_{it} \times LITRISK_{it}$ coefficient) is significantly positive. High-litigation-risk firms with large bad news appear to have a more positive warning effect (through the intercept term) that becomes more negative as the bad earnings news increases.

Panels C and D of Table 5 report results for small-good-news and large-good-news firms, respectively. In Panel C, the high-litigation-risk firms' incremental intercept term ($\hat{\beta}_3$, the $WARN_{it} \times LITRISK_{it}$ coefficient) is significantly positive, while their incremental slope coefficient ($\hat{\beta}_7$, the $TOTNEWS_{it} \times WARN_{it} \times LITRISK_{it}$ coefficient) is statistically insignificant. Therefore, among small-good-news firms, the warning effect is significantly more positive for high-litigation-risk firms

TABLE 5

The Effect of Shareholder Litigation Risk on Return Responses to Earnings Surprise Warnings

MODEL 3^a

$$CWCAR_{it} = \beta_0 + \beta_1 WARN_{it} + \beta_2 LITRISK_{it} + \beta_3 (WARN_{it} \times LITRISK_{it}) + \beta_4 TOTNEWS_{it} + \beta_5 (TOTNEWS_{it} \times WARN_{it}) + \beta_6 (TOTNEWS_{it} \times LITRISK_{it}) + \beta_7 (TOTNEWS_{it} \times WARN_{it} \times LITRISK_{it}) + \beta_8 LMV_{it} + \beta_9 MB_{it} + \varepsilon_{it}''$$

Panel A: Small-bad-news (negative TOTNEWS > -0.01) firms

Independent Variables	Est. Coeff.	Model 3	Point	Point and Range	Model 3, No Acq.	Point and Range, No Acq.
Intercept	$\hat{\beta}_0$	-0.0189 (-4.14)	-0.0171 (-3.93)	-0.0168 (-3.72)	-0.0148 (-2.85)	-0.0125 (-2.42)
WARN	$\hat{\beta}_1$	-0.0805 (-14.31)	-0.0624 (-7.17)	-0.0861 (-13.83)	-0.0818 (-11.70)	-0.0907 (-11.63)
LITRISK	$\hat{\beta}_2$	-0.0015 (-0.58)	-0.0003 (-0.11)	-0.0005 (-0.18)	-0.0003 (-0.11)	0.0007 (0.23)
WARN × LITRISK	$\hat{\beta}_3$	0.0099 (1.63)	0.0113 (1.13)	0.0069 (1.02)	0.0124 (1.73)	0.0080 (1.01)
TOTNEWS	$\hat{\beta}_4$	2.4163 (5.69)	2.2584 (5.76)	2.3097 (5.56)	2.3300 (4.89)	2.2436 (4.77)
TOTNEWS × WARN	$\hat{\beta}_5$	2.3747 (2.10)	5.8508 (3.09)	1.5943 (1.26)	2.3899 (1.80)	1.4631 (0.98)
TOTNEWS × LITRISK	$\hat{\beta}_6$	1.2493 (2.13)	1.7479 (3.15)	1.7494 (3.02)	1.6130 (2.48)	2.0976 (3.25)
TOTNEWS × WARN × LITRISK	$\hat{\beta}_7$	8.2720 (6.71)	9.3433 (3.95)	7.6082 (5.33)	7.6960 (5.48)	7.0161 (4.32)
LMV	$\hat{\beta}_8$	0.0030 (4.45)	0.0019 (2.92)	0.0024 (3.62)	0.0022 (2.85)	0.0017 (2.19)
MB	$\hat{\beta}_9$	-0.0048 (-12.46)	-0.0031 (-8.39)	-0.0043 (-11.22)	-0.0049 (-11.40)	-0.0046 (-10.72)
Coefficient on total earnings news for low-litigation-risk warning firms	$\hat{\beta}_4 + \hat{\beta}_5$	4.7910 (6.20)	8.1092 (7.24)	3.9039 (6.98)	4.7198 (5.98)	3.7067 (6.65)
Differential high-litigation-risk coefficient on total earnings for warning firms	$\hat{\beta}_6 + \hat{\beta}_7$	9.5213 (6.95)	11.0912 (4.55)	9.3576 (6.05)	9.3026 (6.00)	9.1137 (5.20)
Coefficient on earnings for high-litigation-risk warning firms	$\hat{\beta}_4 + \hat{\beta}_5 + \hat{\beta}_6 + \hat{\beta}_7$	14.3123 (10.32)	19.2004 (7.72)	13.2615 (8.29)	14.0224 (8.69)	12.8204 (6.92)
Adj. R ²		0.114	0.045	0.097	0.109	0.097
N		13,152	12,136	12,787	10,236	9,968

TABLE 5 (continued)

Panel B: Large-bad-news (negative TOTNEWS ≤ -0.01) firms

Independent Variables	Est. Coeff.	Model 3	Point	Point and Range	Model 3, No Acq.	Point and Range, No Acq.
Intercept	$\hat{\beta}_0$	-0.0418 (-3.23)	-0.0404 (-3.30)	-0.0365 (-2.85)	-0.0357 (-2.55)	-0.0299 (-2.16)
WARN	$\hat{\beta}_1$	-0.1513 (-11.35)	-0.1348 (-5.57)	-0.1602 (-10.49)	-0.1495 (-10.49)	-0.1510 (-9.30)
LITRISK	$\hat{\beta}_2$	-0.0158 (-1.75)	-0.0134 (-1.61)	-0.0098 (-1.11)	-0.0184 (-1.88)	-0.0126 (-1.32)
WARN \times LITRISK	$\hat{\beta}_3$	0.0499 (4.19)	0.0201 (0.90)	0.0445 (3.20)	0.0445 (3.52)	0.0435 (2.96)
TOTNEWS	$\hat{\beta}_4$	0.5509 (2.44)	0.5495 (2.78)	0.5528 (2.58)	0.6303 (2.64)	0.6256 (2.75)
TOTNEWS \times WARN	$\hat{\beta}_5$	-0.2209 (-0.45)	-1.6367 (-1.99)	-1.0033 (-1.70)	-0.1891 (-0.37)	-0.6910 (-1.13)
TOTNEWS \times LITRISK	$\hat{\beta}_6$	-0.1740 (-0.77)	-0.1685 (-0.83)	-0.1198 (-0.55)	-0.2756 (-1.18)	-0.2096 (-0.93)
TOTNEWS \times WARN \times LITRISK	$\hat{\beta}_7$	1.0445 (1.93)	3.1196 (3.08)	1.7381 (2.46)	0.8876 (1.47)	1.5746 (2.16)
LMV	$\hat{\beta}_8$	0.0043 (2.04)	0.0026 (1.26)	0.0027 (1.27)	0.0037 (1.62)	0.0020 (0.86)
MB	$\hat{\beta}_9$	-0.0045 (-3.91)	-0.0012 (-1.12)	-0.0033 (-2.79)	-0.0056 (-4.50)	-0.0042 (-3.32)
Coefficient on total earnings news for low-litigation-risk warning firms	$\hat{\beta}_4 + \hat{\beta}_5$	0.3300 (1.40)	-1.0873 (-1.60)	-0.4506 (-1.69)	0.4412 (-1.26)	-0.0654 (-1.55)
Differential high-litigation-risk coefficient on total earnings for warning firms	$\hat{\beta}_6 + \hat{\beta}_7$	0.8705 (1.47)	2.9511 (2.84)	1.6183 (2.16)	0.6121 (0.93)	1.3650 (1.76)
Coefficient on earnings for high-litigation-risk warning firms	$\hat{\beta}_4 + \hat{\beta}_5 + \hat{\beta}_6 + \hat{\beta}_7$	1.2005 (2.04)	1.8638 (1.62)	1.1677 (1.47)	1.0533 (1.57)	1.2996 (1.58)
Adj. R^2		0.149	0.042	0.118	0.151	0.115
N		3,080	2,507	2,807	2,705	2,475

Panel C: Small-good-news (positive TOTNEWS < 0.01) firms

Independent Variables	Est. Coeff.	Model 3	Point	Point and Range	Model 3, No Acq.	Point and Range, No Acq.
Intercept	$\hat{\beta}_0$	0.0129 (4.69)	0.0122 (4.45)	0.0128 (4.66)	0.0111 (3.48)	0.0111 (3.47)
WARN	$\hat{\beta}_1$	-0.0039 (-0.70)	-0.0178 (-2.36)	-0.0033 (-0.56)	-0.0025 (-0.37)	-0.0066 (-0.89)

TABLE 5 (continued)

Independent Variables	Est. Coeff.	Model 3	Point	Point and Range	Model 3, No Acq.	Point and Range, No Acq.
LITRISK	$\hat{\beta}_2$	0.0064 (3.93)	0.0063 (3.89)	0.0064 (3.91)	0.0060 (3.03)	0.0060 (3.03)
WARN × LITRISK	$\hat{\beta}_3$	0.0203 (2.69)	0.0218 (2.05)	0.0163 (1.99)	0.0237 (2.65)	0.0240 (2.49)
TOTNEWS	$\hat{\beta}_4$	3.7955 (12.48)	3.8398 (12.74)	3.8185 (12.56)	3.3464 (9.71)	3.3536 (9.73)
TOTNEWS × WARN	$\hat{\beta}_5$	7.5755 (4.90)	13.4702 (5.11)	8.0038 (4.64)	9.2580 (4.98)	12.1536 (5.92)
TOTNEWS × LITRISK	$\hat{\beta}_6$	4.5359 (9.47)	4.4482 (9.33)	4.4470 (9.28)	4.9949 (9.30)	4.9609 (9.23)
TOTNEWS × WARN × LITRISK	$\hat{\beta}_7$	0.6871 (0.25)	1.3391 (0.35)	0.6709 (0.23)	-1.3004 (-0.41)	-3.8676 (-1.14)
LMV	$\hat{\beta}_8$	-0.0017 (-4.10)	-0.0017 (-3.93)	-0.0017 (-4.05)	-0.0014 (-2.71)	-0.0013 (-2.68)
MB	$\hat{\beta}_9$	0.0005 (2.09)	0.0005 (2.39)	0.0004 (2.05)	0.0002 (0.76)	0.0002 (0.69)
Coefficient on total earnings news for low-litigation-risk warning firms	$\hat{\beta}_4 + \hat{\beta}_5$	11.3711 (18.34)	17.3100 (18.37)	11.8223 (18.20)	12.6044 (16.34)	15.5072 (16.28)
Differential high-litigation-risk coefficient on total earnings for warning firms	$\hat{\beta}_6 + \hat{\beta}_7$	5.2230 (1.88)	5.7873 (1.49)	5.1180 (1.70)	3.6946 (1.16)	1.0933 (0.32)
Coefficient on earnings for high-litigation-risk warning firms	$\hat{\beta}_4 + \hat{\beta}_5 + \hat{\beta}_6 + \hat{\beta}_7$	16.5941 (5.97)	23.0973 (6.39)	16.9402 (5.72)	16.2989 (5.14)	16.6005 (4.91)
Adj. R^2		0.026	0.024	0.025	0.027	0.027
N		22,512	22,194	22,415	16,802	16,732

Panel D: Large-good-news (positive TOTNEWS \geq 0.01) firms

Independent Variables	Est. Coeff.	Model 3	Point	Point and Range	Model 3, No Acq.	Point and Range, No Acq.
Intercept	$\hat{\beta}_0$	0.1181 (9.29)	0.1135 (9.01)	0.1174 (9.24)	0.1155 (8.56)	0.1145 (8.51)
WARN	$\hat{\beta}_1$	0.1287 (3.23)	0.1128 (1.09)	0.0849 (1.70)	0.1163 (2.59)	0.0932 (1.67)
RISK	$\hat{\beta}_2$	0.0106 (1.05)	0.0063 (0.63)	0.0105 (1.05)	0.0125 (1.12)	0.0129 (1.16)
WARN × LITRISK	$\hat{\beta}_3$	0.0206 (0.62)	0.0909 (1.35)	0.0398 (0.98)	0.0335 (0.94)	0.0583 (1.36)
TOTNEWS	$\hat{\beta}_4$	-0.7716 (-2.27)	-0.7983 (-2.39)	-0.7741 (-2.28)	-0.8927 (-2.44)	-0.8973 (-2.47)
TOTNEWS × WARN	$\hat{\beta}_5$	-4.6963 (-2.10)	-8.1153 (-2.39)	-2.2284 (-0.74)	-4.3224 (-1.80)	-3.0518 (-0.94)

TABLE 5 (continued)

TOTNEWS \times LITRISK	$\hat{\beta}_6$	1.4139 (3.84)	1.4413 (3.98)	1.4159 (3.86)	1.5891 (3.99)	1.5974 (4.03)
TOTNEWS \times WARN \times LITRISK	$\hat{\beta}_7$	7.9750 (4.11)	8.5606 (2.17)	10.1304 (4.37)	6.1475 (2.43)	7.7044 (2.75)
LMV	$\hat{\beta}_8$	-0.0118 (-5.79)	-0.0107 (-5.24)	-0.0118 (-5.75)	-0.0116 (-5.07)	-0.0110 (-5.03)
MB	$\hat{\beta}_9$	-0.0014 (-1.13)	-0.0019 (-1.50)	-0.0013 (-1.01)	-0.0017 (-1.23)	-0.0015 (-1.13)
Coefficient on total earnings news for low- litigation-risk warning firms	$\hat{\beta}_4 + \hat{\beta}_5$	-5.4678 (-1.36)	-8.9136 (-1.38)	-3.0026 (-1.36)	-5.2151 (-1.37)	-3.9491 (-1.38)
Differential high- litigation-risk coefficient on total earnings for warning firms	$\hat{\beta}_6 + \hat{\beta}_7$	9.3889 (4.75)	10.0019 (2.52)	11.5463 (4.92)	7.7366 (3.02)	9.3015 (3.28)
Coefficient on earnings for high-litigation-risk warning firms	$\hat{\beta}_4 + \hat{\beta}_5 + \hat{\beta}_6 + \hat{\beta}_7$	3.9211 (1.66)	1.0883 (0.20)	8.5437 (2.77)	2.5215 (-0.86)	5.3524 (1.59)
Adj. R^2		0.070	0.044	0.071	0.063	0.064
N		1,684	1,633	1,664	1,449	1,433

t -statistics are reported in parentheses.

^aVariable definitions are in Table 2.

than for low-litigation-risk firms.²² For high-litigation-risk firms with large positive total earnings news (Panel D), the incremental warning effect is significantly positive (significantly positive $TOTNEWS_{it} \times WARN_{it} \times LITRISK_{it}$ coefficient, $\hat{\beta}_7$, but insignificant $WARN_{it} \times LITRISK_{it}$ coefficient, $\hat{\beta}_3$). Thus, for large-good-news firms, the warning effect for high-litigation-risk firms is more positive than for low-litigation-risk firms, similar to the results reported above for small-good-news firms.²³

In sum, our results suggest that shareholder litigation risk has a positive incremental effect on good news firms' warning effect. However, litigation risk appears to have a negative or, at best, mixed effect on bad news firms' warning effect, suggesting that investors believe that high-litigation-risk firms that issue earnings warnings are exposed to additional cost. This is consistent with Skinner's

22. The incremental intercept term for good news warning firms with low litigation risk ($\hat{\beta}_1$, the $WARN_{it}$ coefficient) is insignificant, while the incremental total-earnings-news coefficient ($\hat{\beta}_5$, the $TOTNEWS_{it} \times WARN_{it}$ coefficient) is significantly positive, suggesting that the warning effect is positive for good news firms with small total earnings news. These results are consistent with the Table 4 results.

23. Our results also provide interesting empirical evidence on the effect of shareholder litigation risk on market reactions to good earnings news, regardless of the warning decision. The incremental intercept ($\hat{\beta}_2$, the $LITRISK_{it}$ coefficient) and total earnings coefficient ($\hat{\beta}_6$, the $TOTNEWS_{it} \times LITRISK_{it}$ coefficient) are significantly positive. All else equal, good news firms with high litigation risk have higher cumulative abnormal returns around their earnings announcements than good news firms with low litigation risk.

(1997) finding that firms issue earnings forecasts and preannouncements much more frequently in lawsuit quarters than in nonlawsuit quarters, while settlement costs are not significantly lower for early disclosers than for other firms.

For insight on the apparent negative effect of warnings on bad news, high-risk firms' returns, we first examine the possibility that high-litigation-risk warning firms have worse current earnings than low-litigation-risk warning firms. Table 2, Panel B, shows that among bad news warning firms, high-litigation-risk firms have significantly better (less negative) total earnings news than do low-litigation-risk firms. Therefore, the incremental negative response to bad news firms' warnings is not simply due to worse current-earnings performance. To determine whether high-risk firms' warnings are associated with earnings decline permanence (i.e., worse future earnings performance than that associated with low-risk firms' warnings), we compare the one-year change in (price-deflated) earnings per share from the warning quarter for high- and low-risk firms matched by their warning-period unexpected earnings (results are not reported in the tables). We find no significant differences in future earnings changes, and conclude that the difference in announcement period returns is not likely due to differences in earnings decline permanence. Finally, we augment Rogers and Stocken's (2005) model of shareholder litigation with indicator variables for earnings warnings. Our goal is to examine the effect of earnings warnings on the likelihood of shareholder litigation.

MODEL 4

$$\begin{aligned} \text{LAWSUIT}_{iq} = & \gamma_0 + \gamma_1 \text{LOGSIZE}_{iq} + \gamma_2 \text{TURNOVER}_{iq} + \gamma_3 \text{BETA}_{iq} \\ & + \gamma_4 \text{CARET}_{iq} + \gamma_5 \text{STDEVN}_{iq} + \gamma_6 \text{SKEW}_{iq} + \gamma_7 \text{MINRET}_{iq} \\ & + \gamma_8 \text{BIOTECH}_{iq} + \gamma_9 \text{HARDWARE}_{iq} + \gamma_{10} \text{ELECTRO}_{iq} \\ & + \gamma_{11} \text{RETAIL}_{iq} + \gamma_{12} \text{SOFTWARE}_{iq} + \gamma_{13} \text{WARN}_{iq} \\ & + \gamma_{14} \text{WARNBAD}_{iq} + \gamma_{15} \text{WARNGOOD}_{iq} + \varepsilon_{iq}, \end{aligned} \quad (4)$$

where

WARN_{iq} = 1 if a date within quarter q precedes an earnings warning by firm i by 90 days, and zero otherwise—we also report results for 135-day and 180-day lags;

WARNBAD_{iq} = 1 if firm i 's quarter- q warning, WARN_{iq} , is issued in a fiscal quarter with negative unexpected news, and zero otherwise; and

WARNGOOD_{iq} = 1 if firm i 's quarter- q warning, WARN_{iq} , is issued in a fiscal quarter with positive unexpected earnings, and zero otherwise.

We report the results in Table 6. Our model coefficients in column 1 (without the warning variables) are generally similar to those reported by Rogers and Stocken (2005). Lawsuit incidence is positively associated with firm size and turnover, and negatively associated with returns and the minimum daily return during

TABLE 6

Shareholder Lawsuits, Share Performance, and Earnings Warnings

$$LAWSUIT_{i,q} = \gamma_0 + \gamma_1 LOGSIZE_{i,q} + \gamma_2 TURNOVER_{i,q} + \gamma_3 BETA_{i,q} + \gamma_4 CARET_{i,q} + \gamma_5 STDEVN_{i,q} + \gamma_6 SKEW_{i,q} + \gamma_7 MINRET_{i,q} + \gamma_8 BIOTECH_{i,q} + \gamma_9 HARDWARE_{i,q} + \gamma_{10} ELECTRONICS_{i,q} + \gamma_{11} RETAIL_{i,q} + \gamma_{12} SOFTWARE_{i,q} + \gamma_{13} WARN_{i,q} + \gamma_{14} WARNBAD_{i,q} + \gamma_{15} WARNGOOD_{i,q} + \varepsilon_{i,q}$$

$N = 146,308$

Independent Variables	Est. Coeff.	Calendar Quarter Contains a Date Preceding an Earnings Warning by				
		90 days	90 days	135 days	180 days	
Intercept	γ_0	-12.7489 (844.31)	-12.6714 (810.66)	-12.6723 (811.13)	-12.5724 (778.29)	-12.5703 (781.90)
LOGSIZE	γ_1	0.4234 (227.91)	0.4118 (206.30)	0.4124 (207.06)	0.4104 (203.27)	0.4120 (206.21)
TURNOVER	γ_2	0.0006 (8.47)	0.0006 (8.16)	0.0006 (8.18)	0.0006 (7.99)	0.0006 (8.01)
BETA	γ_3	0.0118 (1.02)	0.0110 (0.90)	0.0108 (0.87)	0.0227 (2.74)	0.0232 (2.87)
CARET	γ_4	-0.9784 (42.80)	-0.9486 (40.18)	-0.9331 (38.76)	-1.0719 (45.90)	-1.0749 (46.14)
STDEVN	γ_5	4.3302 (2.34)	4.5108 (2.65)	4.5163 (2.68)	-0.6504 (0.02)	-0.7860 (0.04)
SKEW	γ_6	-0.0102 (0.03)	0.0022 (0.10)	0.0015 (0.00)	-0.0365 (0.49)	-0.0391 (0.56)
MINRET	γ_7	-5.9339 (43.27)	-5.9296 (44.04)	-5.9278 (44.19)	-5.9378 (51.75)	-5.9259 (51.48)
BIOTECH	γ_8	0.3587 (2.46)	0.3014 (1.73)	0.2895 (1.59)	0.3342 (2.13)	0.3291 (2.07)
HARDWARE	γ_9	1.0671 (18.09)	1.0503 (17.50)	1.0429 (17.23)	1.0478 (17.38)	1.0565 (17.68)
ELECTRONICS	γ_{10}	0.1413 (0.67)	0.1939 (1.26)	0.2011 (1.35)	0.1628 (0.89)	0.1599 (0.86)
RETAIL	γ_{11}	-0.0463 (0.04)	-0.1208 (0.23)	-0.1076 (0.18)	-0.0739 (0.09)	-0.0579 (0.05)
SOFTWARE	γ_{12}	0.3469 (3.63)	0.3277 (3.22)	0.3326 (3.32)	0.3454 (3.59)	0.3502 (3.69)
WARN	γ_{13}		1.5055 (69.98)			
WARNBAD	γ_{14}			1.6570 (79.90)	1.0539 (19.67)	0.9176 (12.82)
WARNGOOD	γ_{15}			0.2607 (0.13)	0.6832 (1.36)	-0.3654 (0.13)
McFadden pseudo R^2		0.114	0.125	0.126	0.118	0.117

5% and 1% critical values for the chi-square statistics reported in parentheses are 3.84 and 6.64, respectively.

TABLE 6 (continued)

$LAWSUIT_{iq}$ = 1 if a triggering event for a lawsuit for firm i occurs in quarter q —a triggering event is assumed to have occurred seventy-nine days before a lawsuit filing date as recorded by the Stanford Securities Class Action Clearinghouse;

$LOGSIZE_{iq}$ = logarithm of firm i 's mean market value in quarter q ;

$TURNOVER_{iq}$ = firm i 's mean daily share volume in quarter q , divided by the mean number of shares outstanding on each day in the quarter;

$BETA_{iq}$ = firm i 's market model beta in quarter q , calculated using equal-weighted daily market returns;

$CARET_{iq}$ = firm i 's cumulative raw daily returns in quarter q ;

$STDEVN_{iq}$ = standard deviation of firm i 's daily returns in quarter q ;

$SKEW_{iq}$ = skewness of firm i 's daily returns in quarter q ;

$MINRET_{iq}$ = firm i 's smallest daily return in quarter q ;

$BIOTECH_{iq}$ = 1 if firm i is in the biotechnology industry (SIC codes 2830 to 2836), and zero otherwise;

$ELECTRONICS_{iq}$ = 1 if firm i is in the electronics industry (SIC codes 3570 to 3577), and zero otherwise;

$RETAIL_{iq}$ = 1 if firm i is in the retail industry (SIC codes 5200 to 5961), and zero otherwise;

$SOFTWARE_{iq}$ = 1 if firm i is in the computer software industry (SIC codes 7371 to 7379), and zero otherwise;

$WARN_{iq}$ = 1 if a date within quarter q precedes an earnings warning by firm i by 90 days, and zero otherwise—we also report results for 135-day and 180-day lags;

$WARNBAD_{iq}$ = 1 if firm i 's quarter- q warning, $WARN_{iq}$, is issued in a fiscal quarter with negative unexpected news, and zero otherwise; and

$WARNGOOD_{iq}$ = 1 if firm i 's quarter- q warning, $WARN_{iq}$, is issued in a fiscal quarter with positive unexpected earnings, and zero otherwise.

the quarter. Lawsuits are significantly more common in the computer hardware industry than in other industries.

Skinner (1997) documents increased forecasting activity in the lawsuit quarter, but it is unclear whether managers are responding to litigation activity that is already underway or if increased warning activity occurs before lawsuits are filed. In columns 2–5 of Table 6, we report results for indicator variables designating earnings warnings issued before the lawsuit quarter. The results in column 2 (with $WARN$ as the only warning variable) show that earnings warnings are associated with subsequent increased likelihood of lawsuits. Columns 3–5 (with both $WARNBAD$ and $WARNGOOD$ at varying lags from the lawsuit quarter) show that lawsuit incidence is positively associated with prior bad news warnings but not with good news warnings. The impact of the bad news warnings weakens as the warning lag is lengthened from 90 days to 180 days. We conclude that the significantly negative effect of shareholder litigation risk on bad news firms' warning effect (Table 5) may be partly because bad news warnings signal increased likelihood of lawsuits.

5. Summary and Conclusions

This study examines the market reaction to earnings surprise warnings issued for large and small earnings news, that is, the warning effect, and the incremental

effect of shareholder litigation risk on the warning effect. We find a significantly negative warning effect for large- and small-bad-news firms and a significantly positive warning effect for small-good-news firms. However, we find no warning effect for large-good-news firms, consistent with KL (1995).

We then investigate the incremental effect of shareholder litigation risk on the warning effect. We find that bad news firms' warning effect is more negative for high-litigation-risk firms than for low-litigation-risk firms, suggesting that the increased likelihood of shareholder lawsuits signaled by warnings outweighs the potential reduced settlement costs if the firm is sued. For good news warnings, we expect and find a positive effect of shareholder litigation risk on the (positive) warning effect. This result is consistent with our conjecture that the credibility of good news warnings increases with litigation risk because high-litigation-risk firms face greater risk than low-litigation-risk firms if their good news warnings are overoptimistic, and their managers therefore only issue forecasts they are confident of.

This paper makes a number of contributions to the literature on voluntary management disclosures. We confirm KL's finding of a negative warning effect for large-bad-news firms but insignificant warning effect for large-good-news firms, and further document negative and positive warning effects, respectively, for firms reporting small bad or good earnings news. Thus, our results suggest that KL's results are due to their focus on large-earnings-news firms. More importantly, we examine the incremental effect of shareholder litigation risk on the warning effect, a previously unaddressed issue. We find that for bad news firms, the warning effect is more negative for high-litigation-risk firms than for low-litigation-risk firms, but for good news firms, the warning effect is more positive for high-litigation-risk firms than for low-litigation-risk firms. Finally, we find evidence suggesting that the significantly negative effect of shareholder litigation risk on the warning effect of bad news firms is partly because bad news warnings are associated with increased likelihood of lawsuits.

Our results suggest that studies of the warning effect that ignore the effect of shareholder litigation risk may understate the negative warning effect of bad news warnings and the positive warning effect of good news warnings for high-litigation-risk firms when compared with low-litigation-risk firms. Furthermore, managers' warning behavior may convey information about the likelihood of lawsuits to investors. Earnings warnings that accompany bad earnings news are associated with increased likelihood of lawsuits for several fiscal quarters after the warning is issued.

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