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The informativeness of earnings and management's issuance of earnings forecasts ☆

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Abstract

Theory suggests that managers issue earnings forecasts to reduce information asymmetry. An earnings forecast is more effective in reducing information asymmetry if it contains earnings news that is relatively more informative about the firm's value. We hypothesize that a manager is more likely to issue an earnings forecast if investors perceive that earnings are more informative. We measure earnings informativeness by estimating the firm's earnings response coefficient (ERC) in quarters prior to the forecast issuance decision. Consistent with our hypothesis, we find that the firm's historic ERC is positively associated with management's issuance of earnings forecasts.

JEL classification: M41; M43

Keywords: Earnings informativeness; Management forecast

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1. Introduction

Theory suggests that managers disclose value-relevant information to investors in order to reduce information asymmetry. A reduction in information asymmetry lowers the opportunity for investors to profit from informed trading and therefore reduces the costs to investors of acquiring private information (Diamond, 1985; King et al., 1990). Moreover, a reduction in information asymmetry increases liquidity in the company's stock and reduces the cost of capital (Diamond and Verrecchia, 1991).

Prior research has shown that management earnings forecasts reduce information asymmetry (e.g., Ajinkya and Gift, 1984; Kasznik and Lev, 1995; Frankel et al., 1995; Coller and Yohn, 1997). We argue that the reduction in information asymmetry is greater if investors believe that management earnings forecasts are more informative about stock prices. The information content of a management forecast, and therefore the likelihood of such forecasts, should increase in: (1) the magnitude of the earnings news disclosed by the forecast, and (2) the strength of the market's reaction to each unit of earnings news. Thus, we expect that firms are more likely to forecast earnings if the magnitude of the earnings news is larger and the market's response to each unit of earnings news is stronger. Although Kasznik and Lev (1995) examine the association between management forecasts and the magnitude of earnings news, there is no evidence on the association between management's propensity to issue forecasts and the market's sensitivity to earnings news. Our objective is to address this gap in the literature. Specifically, we hypothesize that a manager is more likely to issue earnings forecasts if investors respond more strongly to each unit of earnings news, i.e., greater earnings informativeness.

A manager may be uncertain how strongly investors will respond to earnings news, so we use price sensitivity to past earnings news (i.e., ERC) as a proxy for the manager's beliefs. This is predicated on the assumption that the manager expects a stronger market response if the market responded more strongly to the firm's past earnings news.[1] We measure the market's reaction to past earnings news by estimating each firm's historic earnings response coefficient or ERC (Collins and Kothari, 1989) over the 16 firm-quarters prior to the quarter in which the management chooses whether to forecast earnings. For example, we model the decision to issue an earnings forecast in the first quarter of 1998 using an ERC estimated from the 16 firm-quarters over the period 1994–1997.

Using a sample of 2070 firms and 18,680 firm-quarters, we find a strong positive association between a firm's historic ERC and management's issuance of earnings forecasts. This is consistent with our hypothesis that managers are more likely to issue earnings forecasts if investors perceive earnings to be more informative. The association continues to hold after we control for other variables such as earnings volatility, return volatility, and revisions in analysts' forecasts of future earnings.[2] In addition, we partition the management forecasts according to whether they convey good news or bad news and find that a firm's historic ERC is positively associated with both types of forecasts. Finally, a firm's ERC is positively associated with the future decision to forecast earnings, but there

[1]Consistent with this assumption, the market's reaction to the management forecast is stronger for firms that have a high historic ERC compared to firms that have a low historic ERC (see Section 4.3).

[2]Kasznik and Lev (1995) find that management forecasts of bad news are positively associated with the magnitude of the revision in analyst earnings forecasts. In interpreting these results, the authors suggest that managers are more likely to forecast bad news if earnings disappointments are more permanent.

is no relation with past earnings forecasts, suggesting that the direction of causality is from the ERC to management forecast issuance rather than the other way around.

Prior research shows that managers are more likely to issue an unfavorable earnings forecast when the magnitude of the negative earnings surprise is larger (Kasznik and Lev, 1995). Our study contributes to the literature by showing that management forecast issuance is positively associated with earnings informativeness per unit of the earnings surprise, after controlling for the magnitude of the earnings surprise. Thus, we identify earnings informativeness as an incremental factor that motivates managers to forecast earnings.

The rest of this paper is organized as follows. Section 2 reviews the literature, develops the hypothesis, and explains the research design. Section 3 discusses the sample and provides descriptive statistics. Section 4 presents the multivariate results and Section 5 concludes the paper.

2. Literature review, hypothesis development, and research design

2.1. Management earnings forecasts and information asymmetry

Extant studies indicate that management forecasts reduce information asymmetry, either between managers and investors or among investors. For instance, Ajinkya and Gift (1984) find that managers forecast earnings in order to move investor expectations toward management beliefs about future earnings. Kasznik and Lev (1995) use the magnitude of the earnings surprise to measure information asymmetry and find that managers are more likely to forecast bad news if the negative earnings surprise is larger. However, they find no association between the magnitude of the positive earnings surprise and the issuance of good news forecasts. Consistent with forecasts reducing the cost of capital, Frankel et al. (1995) show that managers are more likely to issue earnings forecasts when firms access the capital markets. Finally, Coller and Yohn (1997) find that bid-ask spreads decrease significantly over the 21-day period surrounding the issuance of management forecasts. While each of these studies supports the view that management forecasts reduce information asymmetry, we know of no prior study that tests whether managers are more likely to forecast earnings if earnings are more informative to investors.

2.2. AIMR disclosure ratings and management earnings forecasts

Our study uses earnings forecasts to capture management disclosures, whereas some studies use Association for Investment Management Research (AIMR) ratings. Lang and Lundholm (1993) present two competing hypotheses about the association between AIMR disclosure ratings and the correlation between earnings and returns. (The earnings-return correlation is closely related to the firm's ERC, which is our measure of earnings informativeness). First, by disclosing value-relevant earnings news, a firm can reduce the costs to investors of acquiring private information. In this case, the firm has a greater incentive to disclose earnings information if the earnings-return correlation is higher. Alternatively, a low earnings-return correlation may indicate high information asymmetry, in which case a firm may disclose more and have a higher AIMR rating. Ultimately, Lang and Lundholm find a negative association between AIMR ratings and the earnings-return

correlation and surmise that lower earnings-return relations reflect higher information asymmetry, which disclosures help to reduce.

Our study focuses on management forecasts of earnings, whereas AIMR ratings capture both earnings and non-earnings disclosures. Lundholm and Myers (2002) suggest that AIMR ratings poorly measure management forecasts since there is no mention of forecasts in the documentation of the AIMR scoring system and the AIMR opposes any requirement that managers forecast earnings (AIMR, 1993).[3] Moreover, we predict a positive association between management forecast issuance and ERCs, whereas Lang and Lundholm find that AIMR ratings are negatively associated with the earnings-return correlation. Although our prediction differs from their finding, the two studies are not inconsistent because AIMR ratings are more closely associated with non-earnings information (see footnote 3), and thus negatively related to ERCs. In contrast, management forecasts mainly provide earnings information, and hence would be positively related to ERCs.[4]

Recent studies investigate the association between AIMR disclosure ratings and the "future ERC," which reflects the association between current returns and future earnings (Gelb and Zarowin, 2002; Lundholm and Myers, 2002). These studies argue that disclosures bring the future forward, causing current returns to be more strongly associated with future earnings news and less strongly associated with current earnings news. According to this argument, disclosures affect the ability of investors to predict future earnings and therefore may also affect the firm's ERC. This raises a causality issue that we explore in Section 4.2.

2.3. Management earnings forecasts and the determinants of ERCs

Prior studies explain the issuance of management forecasts using independent variables that are associated with ERCs. Therefore, it is important to control for these variables in our model. Imhoff and Lobo (1992) argue that earnings volatility can explain ERCs because volatility captures either ex ante uncertainty or the noise in accounting earnings. On the one hand, we might expect a positive association between management forecast issuance and earnings volatility as managers issue forecasts in an attempt to reduce uncertainty. On the other hand, we might expect a negative association if greater earnings volatility implies greater noise in accounting earnings (and a lower ERC). In addition, managers may be unwilling to forecast good news when earnings volatility is high because there is a higher risk of litigation if actual earnings fall short of the forecast (Waymire, 1985).[5]

[3]Using data for 1995–1996, we find that the correlation between the total AIMR ratings and management forecasts is 0.053 (p-value = 0.064) and the correlation between the AIMR investor relations (IR) score and management forecasts is −0.004 (p-value = 0.911). The tenuous relation between AIMR ratings and management forecasts indicates that AIMR ratings are primarily explained by other types of disclosures (e.g., disclosure of information in annual or quarterly reports) or managers' disclosures during the IR sessions (e.g., responsiveness to analyst questions and accessibility of managers). Note, however, that the data for AIMR ratings are available only up to 1996. Thus, the above correlations should be interpreted with caution.

[4]Management forecasts are often issued with supplementary disclosures that improve the credibility of earnings forecasts (Miller, 2002; Hutton et al., 2003; Baginski et al., 2004).

[5]Baginski and Hassell (1997) find that managers issue imprecise forecasts (e.g., an earnings range) to convey the uncertainty in earnings. Therefore, earnings volatility may affect the type of forecast issued rather than the decision to issue a forecast.

Empirical evidence on the association between earnings volatility and management forecasts is mixed. For instance, Cox (1985) finds a significant negative association, Waymire (1985) finds a significant negative relation for good news firms but not for bad news firms, Lev and Penman (1990) find no significant association, and Baginski et al. (2004) find no association between earnings volatility and management's tendency to explain their forecasts. In any case, we control for earnings volatility to ensure that the ERC does not merely capture an effect that has already been documented in the literature. We also control for return volatility because this variable may affect the ERC and it has been used in prior studies of management forecasts (e.g., Kasznik and Lev, 1995).

2.4. Hypothesis development

Theory indicates that firms have incentives to disclose value-relevant information to investors. Specifically, Diamond (1985) models an economy in which investors can acquire costly private information about firm value and thereby realize larger profits from trading in the firm's shares. Although an individual investor's welfare can be improved by collecting more information, private information acquisition leaves investors collectively worse off because information gathering is costly. Diamond shows that a firm can improve the collective welfare of investors by disclosing information publicly, thereby pre-empting private information acquisition. Thus, public disclosure protects investors from themselves, and the firm can be thought of as a coalition that maximizes total investor welfare. Diamond also shows that public disclosure makes investors' beliefs more homogeneous, thereby reducing the magnitude of investors' speculative positions and improving risk-sharing among investors. Diamond and Verrecchia (1991) extend this analysis and demonstrate that public disclosure increases future liquidity in a firm's stock, which in turn results in a lower cost of capital.

An earnings forecast is an important type of public disclosure that should reduce information asymmetry. The information benefits of a management forecast should be greater—and managers should thus be more likely to issue forecasts—if investors perceive the forecast to be more informative. We assume that managers perceive the informativeness of their forecasts to be increasing in the strength of the market's response to the firm's past earnings news, which we measure by the firm's historic ERC. While we would ideally estimate the ERC using the market's reaction to past management *forecasts*, many firms never or only rarely issue management forecasts. Instead, we estimate ERCs based on the market's reaction to the firm's earnings *announcements* in past quarters. Our maintained assumption is that the firm's historic ERC captures the strength with which the market would respond to a management forecast.[6] We test the hypothesis that management is more likely to issue earnings forecasts if the firm's historic ERC is larger.

[6]To provide evidence on this assumption, we compare the market's response to the management forecasts of high-ERC versus low-ERC firms. As explained in Section 4.3, we find a stronger market response to the management forecast if the firm has a higher historic ERC. This supports our assumption that managers would anticipate a stronger market response to the management forecast if the market had responded more strongly to past earnings news.

2.5. Research design

We test the association between management forecasts and the firm's ERC by estimating

$$MFDUM = \alpha_0 + \alpha_1 ERC + \alpha_2 |EARNINGS\_SURPRISE| + Controls + v, \quad (1)$$

where *MFDUM* is a dummy variable that equals one if management issues at least one earnings forecast during the quarter and zero otherwise, and *EARNINGS_SURPRISE* equals the reported earnings per share for that quarter minus the most recent mean analyst forecast before the previous quarter's earnings announcement date, scaled by the stock price. We estimate each firm's ERC by regressing two-day [0, +1] cumulative market-adjusted stock returns on the earnings news of the preceding 16 quarters, where day 0 is the earnings announcement date in a past quarter; the earnings news of a past quarter equals earnings per share (EPS) for that quarter minus the most recent prior mean analyst earnings forecast, scaled by the closing share price on day −1. We update our estimates of each firm's ERC on a rolling basis from 1994 to 2002. Eq. (1) tests whether the ERC is associated with the issuance of a management forecast in the subsequent quarter. For example, we model the issuance of a management forecast in the second quarter of 1998 using an ERC that is estimated from the second quarter of 1994 to the first quarter of 1998. Under our hypothesis, the firm's ERC is positively related to the issuance of management forecasts (i.e., $\alpha_1 > 0$).

The information content of a management forecast depends upon both the magnitude of the earnings surprise (|*EARNINGS_SURPRISE*|) and the sensitivity of the market's reaction to each unit of earnings news (*ERC*). For example, even if the earnings surprise is large, a firm may choose not to forecast earnings if the *ERC* is small. Similarly, even if the *ERC* is large, a firm may not forecast earnings if the earnings news is small. Thus, we expect that both |*EARNINGS_SURPRISE*| and *ERC* are positively associated with the issuance of management forecasts. Eq. (1) presents *ERC* and |*EARNINGS_SURPRISE*| in an additive specification because we wish to test whether the *ERC* variable is statistically significant after controlling for the magnitude of the earnings surprise.[7]

2.6. Time line for management forecasts and analyst forecasts

Fig. 1 illustrates a time line for a hypothetical firm in the fourth quarter of 2000. The quarter is classified as a "management forecast quarter" because a management forecast is issued during the period between the prior earnings announcement date (October 18, 2000) and the day before the current earnings announcement date (January 19, 2001). We label the most recent mean analyst forecast prior to the management forecast date (December 20, 2000) as *AF*1. A management forecast is considered good, bad, or neutral news if it is, respectively, above, below, or equal to *AF*1.

We construct *EARNINGS_SURPRISE* using the most recent mean analyst forecast prior to the previous quarter's earnings announcement date, labeled *AF*2. *AF*2 is not affected by the management forecast because it always precedes the management forecast quarter. We measure *EARNINGS_SURPRISE* using *AF*2 rather than *AF*1 because *AF*1 is missing for quarters in which managers do not forecast earnings.

[7]In a sensitivity test, we interact the *ERC* and |*EARNINGS_SURPRISE*| variables in a multiplicative specification and we find a significantly positive coefficient for the interaction variable.

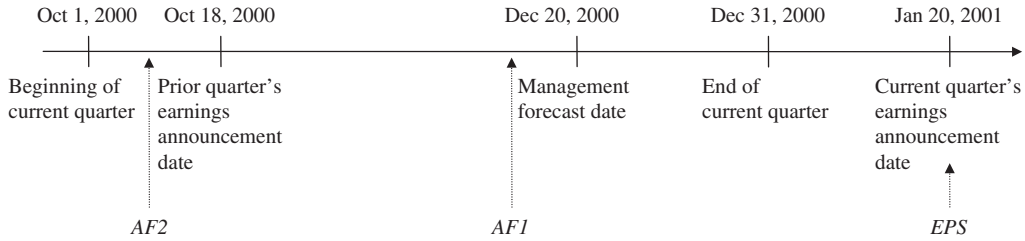

Fig. 1. The time line for a hypothetical firm that issues a management forecast in the fourth quarter of 2000. *AF*1 = the most recent mean analyst forecast of current quarter earnings prior to the management forecast date. *AF*2 = the most recent mean analyst forecast of current quarter earnings before the prior quarter's earnings announcement date. EPS = earnings per share. We classify this quarter as a "management forecast quarter" because the management issues an earnings forecast in the period between the prior earnings announcement date (Oct 18, 2000) and one day before the current earnings announcement date (January 19, 2001). We classify the management forecast as good, bad, or neutral news if it is above, below, or equal to *AF*1, respectively. Our management forecast models control for the magnitude of the earnings surprise during the quarter in which the manager chooses whether to issue a forecast. The magnitude of the earnings surprise (*EARNINGS_SURPRISE*) equals EPS minus *AF*2. *AF*2 always precedes the management forecast quarter because the management forecast quarter is the period from the prior earnings announcement date to one day before the current earnings announcement date. We choose to measure *EARNINGS_SURPRISE* using *AF*2 rather than *AF*1 because *AF*1 is missing for quarters in which managers do not forecast earnings.

2.7. Control variables

Kasznik and Lev (1995) find that management forecasts of bad news are positively related to the magnitude of a negative analyst forecast revision of future earnings. They interpret this as evidence that managers forecast bad news when earnings disappointments are more permanent. In light of their finding, we control for the mean analyst forecast revision of future earnings, where *FORECAST_REVISION* equals the mean analyst forecast of one-quarter-ahead earnings issued after the earnings announcement date minus the most recent mean analyst forecast of one-quarter-ahead earnings issued before the prior earnings announcement date, scaled by the stock price.[8]

Previous studies find a positive association between firm size and the frequency of management disclosures (Lang and Lundholm, 1993; Kasznik and Lev, 1995; Frankel et al., 1995). Larger firms may disclose more often because they benefit from economies of scale in disclosure or because they face greater litigation risk. We control for firm size using the log of market value ($Ln(MV)$).

If firms are followed by a larger number of analysts, managers should have stronger incentives to forecast earnings to maintain a reputation for credible communication (Skinner, 1997; Graham et al., 2005). We control for this reputation-based incentive using the number of analysts ($\#ANALYSTS$).

If a firm operates in a risky environment, the manager may forecast earnings in order to reduce expected litigation costs (Skinner, 1994, 1997). On the other hand, the market may penalize a firm that misses its own forecast, in which case a manager may not forecast

[8]For example, in Fig. 1, *FORECAST_REVISION* is computed as the analyst earnings forecast for the quarter ended on March 31, 2001 issued after the current earnings announcement date (January 20, 2001) minus the analyst earnings forecast for the same quarter issued before the prior earnings announcement date (October 18, 2000), scaled by the stock price.

earnings at all (Waymire, 1985; Graham et al., 2005). We control for risk using the market-to-book ratio (*MB*), return volatility (*RTNVOL*), and earnings volatility (*EARNVOL*), where *RTNVOL* is the variance in daily stock returns over the 250 trading days prior to the beginning of the quarter and *EARNVOL* is the variance of changes in quarterly EPS scaled by assets per share at the beginning of the quarter. The change in quarterly EPS is the current quarter's EPS minus the EPS of the same quarter in the previous year. To estimate each firm's earnings volatility, we use the 16 most recent past quarters that have non-missing data.

Following Kasznik and Lev (1995), we control for litigation exposure using a dummy variable that indicates whether the firm operates in a high-tech industry (*HIGH_TECH*). Moreover, regulated firms issue management forecasts less frequently than other firms because they are required to disclose a significant amount of information (Kasznik and Lev, 1995), so we include a dummy variable that indicates whether the firm is subject to external regulation (*REGULATION*).

Finally, we include time dummies to control for temporal changes in the frequency of management forecasts.

3. Sample selection and descriptive statistics

We obtain our sample from the intersection of the First Call Historical Database (FCHD), Compustat, and the Center for Research in Security Prices (CRSP) over the 1998 to 2002 period. The sample consists of 2070 firms and 18,680 firm-quarters. For each quarter, we use First Call's Company Issued Guidelines (CIG) database to identify whether management issued an earnings forecast. We find 9824 management forecasts of current quarterly and annual earnings. Of the 2070 firms in the sample, 639 firms do not issue any forecasts. We collect financial data from CRSP, First Call, and Compustat. To estimate each firm's ERC, we collect earnings and returns data from the first quarter of 1994 to the fourth quarter of 2002.

Table 1, Panel A reports the number of management forecasts per firm-quarter. There are 12,630 quarters in which managers do not issue any forecasts and 6050 quarters in which managers issue at least one forecast. Of the 6050 management forecast quarters, more than half (3461) contain just one forecast and the maximum number of management forecasts per firm-quarter is ten. Of the 9824 management forecasts, 5970 (60.8%) pertain to the current quarter and 3854 (39.2%) pertain to the current year.[9]

Table 1, Panel B reports an increase in the frequency of management forecasts, from 9% in 1998 to 34% in 2002. Management forecasts are distributed fairly evenly across the four quarters, with frequencies of 22%, 24%, 31%, and 24% in the first, second, third, and fourth quarters, respectively.

Managers issue both quantitative forecasts, in the form of point or range estimates of earnings, and qualitative forecasts, such as "above expectations" or "below expectations" (Pownall et al., 1993). We classify minimum or maximum estimates as qualitative forecasts since they are not associated with a precise range. Table 1, Panel C shows that 3018 (31%)

[9]Our tests include management forecasts of annual earnings because managers may communicate information about current quarter earnings through annual earnings forecasts. In a sensitivity test, we find similar results for management forecasts that pertain to the current quarter alone.

management forecasts are point estimates, 5606 (57%) are range forecasts, and 1200 (12%) are qualitative.

We classify a management forecast as good, bad, or neutral news, respectively, if it is above, below, or equal to the most recent mean analyst forecast prior to the management forecast date (see *AF*1 in Fig. 1). If the manager forecasts an earnings range, we compare the mean of the range with the analyst forecast. If the manager states "okay with expectations" or "comfortable with expectations" and does not disclose any specific number, we classify the management forecast as neutral. Sometimes it is unclear whether the management forecast conveys good, bad, or neutral news. For example, while the management forecast news is unambiguously good if the manager forecasts that EPS will be at least \$3.30 and the mean analyst forecast is at or below \$3.30, it is unclear whether a

Table 1
Descriptive statistics of management earnings forecasts

Panel A: Number of management earnings forecasts issued per firm-quarter

Number of forecasts issued per firm-quarter	Number of firm-quarters	Management earnings forecast for the:		Total number (%) of forecasts
		Current quarter	Current year	
0	12,630			0 (0%)
1	3461	2449	1012	3461 (35%)
2	1828	2063	1593	3656 (37%)
3	467	770	631	1401 (14%)
4	219	467	409	876 (9%)
5	40	105	95	200 (2%)
6	23	66	72	138 (1%)
7	6	24	18	42 (0%)
8	5	21	19	40 (0%)
9	0	0	0	0 (0%)
10	1	5	5	10 (0%)
Total	18,680	5970	3854	9824 (100%)

Panel B: Number of management forecast quarters[a]

	Quarter				
Year	1	2	3	4	Total %
1998	65	137	178	148	528 (9%)
1999	195	170	244	178	787 (13%)
2000	205	190	293	303	991 (16%)
2001	375	446	544	352	1717 (28%)
2002	469	487	629	442	2027 (34%)
Total	1309 (22%)	1430 (24%)	1888 (31%)	1423 (24%)	6050 (100%)

Panel C: Form and horizon of forecasts[b]

Form	Quarterly	Annual	Total %
Point	1850	1168	3018 (31%)
Range	3233	2373	5606 (57%)
Qualitative	887	313	1200 (12%)
Total	5970 (61%)	3854 (39%)	9824 (100%)

Table 1 (*continued*)

Panel D: Management forecast earnings news[c]

Type of management forecast news	Per management forecast	Per management forecast quarter
Good	2753 (28%)	1506 (25%)
Bad	4953 (50%)	3091 (51%)
Neutral	2118 (22%)	912 (15%)
Mixed	Nil (0%)	541 (9%)
Total	9824 (100%)	6050 (100%)

[a]A firm's quarter is classified as a "management forecast quarter" if the management issues at least one earnings forecast in the period from the prior earnings announcement date to one day before the current earnings announcement date.

[b]We classify a manager's minimum or maximum earnings estimates as qualitative forecasts since they do not provide a precise range.

[c]If a management earnings forecast is above, below, or equal to the most recent mean analyst forecast prior to the management forecast date, we code the management forecast as good, bad, or neutral news, respectively. If management issues a range forecast, we take the mean of the range as the manager's point estimate. If managers state "okay with expectations" or "comfortable with expectations" and do not disclose any specific number, we classify the management forecast as neutral. If it is not clear whether the management forecast is above, below, or equal to the mean analyst forecast, we code the news as "unclear." Since the number of "unclear" observations is only 279 out of 9824, we combine "unclear" with "neutral." If a firm issues multiple forecasts during the quarter, we classify the quarter's forecast news as good (bad) if any one of the forecasts is good (bad) news and none of the forecasts is bad (good) news. If the firm issues both good news and bad news forecasts during the quarter, we classify the quarter's forecast news as "mixed."

management forecast of at least \$3.30 conveys good, bad, or neutral news if the mean analyst forecast is \$3.32. Of the 9824 management forecasts, only 279 are unclear; we combine these with the neutral news forecasts. Table 1, Panel D reports that of the 9824 management forecasts, 2753 (28%) disclose good news, 4953 (50%) disclose bad news, and 2118 (22%) are neutral (or unclear).

In addition to identifying the news disclosed in each individual management forecast, we classify the management forecast news for each firm-quarter. If the manager issues one forecast during the quarter, the quarter's management forecast news is good/bad/neutral if the management forecast is good/bad/neutral. If the manager issues multiple forecasts during the quarter, we classify the quarter's management forecast news as good (bad) if at least one management forecast is good (bad) and there are no bad (good) forecasts. If the manager issues multiple forecasts that convey both good news and bad news during the quarter, we classify the quarter's management forecast news as "mixed." Table 1, Panel D shows that 1506 management forecast quarters (25%) contain only good news, 3091 (51%) contain only bad news, 912 (15%) are neutral, and 541 (9%) are mixed. Because it is unclear what information is conveyed when managers issue neutral or mixed news forecasts, we estimate Eq. (1) without the neutral and mixed news management forecast quarters, although we report results for these quarters in a sensitivity test.

Table 2 reports tests of differences in means and medians between the 6050 management forecast quarters and the 12,630 no-forecast quarters. Consistent with our hypothesis, the mean *ERC* is 18.994 in the management forecast quarters compared to 10.749 in the

Table 2
Descriptive statistics for firm-quarters in which managers forecast (do not forecast) earnings

Variable	Sample	*N*	Mean	Median	Standard deviation	*t*-stat (*z*-stat)
ERC	Management forecasts	6050	18.994	8.235	31.076	18.57***
	No management forecast	12,630	10.749	4.136	21.769	16.37***
EARNINGS_SURPRISE	Management forecasts	6050	−0.00429	−0.00055	0.01384	−10.17***
	No management forecast	12,630	−0.00210	0.00000	0.01358	−11.11***
FORECAST_REVISION	Management forecasts	6050	−0.00442	−0.00119	0.00981	−12.99***
	No management forecast	12,630	−0.00247	−0.00027	0.00915	−18.34***
MV ($millions)	Management forecasts	6050	11,237	1725	35,997	10.93***
	No management forecast	12,630	5850	1218	19,115	10.27***
#*ANALYSTS*	Management forecasts	6050	10	8	6.147	19.07***
	No management forecast	12,630	8	7	5.548	15.76***
MB	Management forecasts	6050	3.480	2.367	3.861	4.66***
	No management forecast	12,630	3.206	2.197	3.530	5.52***
RTNVOL	Management forecasts	6050	0.00128	0.00087	0.00116	3.53***
	No management forecast	12,630	0.00121	0.00079	0.00123	6.11***
EARNVOL	Management forecasts	6050	0.00038	0.00003	0.00124	−3.74***
	No management forecast	12,630	0.00045	0.00003	0.00139	0.77
HIGH_TECH	Management forecasts	6050	0.210	0.000	0.407	7.47***
	No management forecast	12,630	0.164	0.000	0.370	7.69***
REGULATION	Management forecasts	6050	0.090	0.000	0.287	−23.19***
	No management forecast	12,630	0.210	0.000	0.407	−20.33

There are 6050 quarters in which managers issue at least one earnings forecast and there are 12,630 quarters in which managers do not issue earnings forecasts.
ERC = the firm's historic earnings response coefficient. We estimate each firm's *ERC* by regressing cumulative market-adjusted stock returns on the earnings news of past quarters. Returns are cumulated over two trading days [0, +1], where day 0 is the earnings announcement date in a past quarter. The earnings news of a past quarter equals the quarter's earnings per share announced on day 0 minus the most recent mean analyst earnings forecast issued prior to the earnings announcement date, scaled by the closing share price at day −1. To estimate the firm's *ERC*, we use the 16 most recent past quarters that have non-missing data for returns and analyst forecast errors. We update our estimates of each firm's *ERC* on a rolling basis from 1994 to 2002.
EARNINGS_SURPRISE = actual earnings per share for the current quarter minus the most recent mean analyst forecast of current quarter earnings issued before the prior earnings announcement date, scaled by the closing share price one day before the prior earnings announcement date.
FORECAST_REVISION = the earliest mean analyst forecast of one-quarter-ahead earnings issued after the current earnings announcement date minus the most recent mean analyst forecast of one-quarter-ahead earnings issued before the prior earnings announcement date, scaled by the closing share price.
MV = market value of common equity at the beginning of the quarter.
#*ANALYSTS* = number of analysts following the firm prior to the current earnings announcement date.
MB = market-to-book value of common equity at the beginning of the quarter.
RTNVOL = variance in daily raw stock returns over the 250 trading days prior to the beginning of the quarter. We require a minimum of 100 daily stock return observations to compute the variance.
EARNVOL = variance of changes in quarterly earnings per share (EPS), scaled by assets per share at the beginning of the quarter. We measure the change in quarterly EPS as the current quarter EPS minus the EPS of the same quarter in the prior year. To estimate the firm's earnings volatility we use the 16 most recent past quarters that have non-missing data for earnings changes.
HIGH_TECH = one if the firm reports Compustat SIC codes 2833–2836 (Drugs), 8731–8734 (R&D services), 7371–7379 (Programming), 3570–3577 (Computers), or 3600–3674 (Electronics), and zero otherwise.
REGULATION = one if the firm reports Compustat SIC codes 4812–4813 (Telephone), 4833 (TV), 4841 (Cable), 4811–4899 (Communications), 4922–4924 (Gas), 4931 (Electricity), 4941 (Water), or 6021–6023, 6035–6036, 6141, 6311, 6321, 6331 (Financial firms), and zero otherwise.
*, **, *** *p*-value < 10%, *p*-value < 5%, *p*-value < 1%, respectively, for two-tailed pairwise tests.

no-management forecast quarters, and the difference is significant at less than the 1% level. The means of *EARNINGS_SURPRISE* and *FORECAST_REVISION* are significantly more negative in the management forecast quarters compared to the no-forecast quarters for two reasons. First, managers are more likely to forecast bad news than good news (see Table 1, Panel D). Second, managers are more likely to forecast bad news if the earnings surprise and forecast revision are large and negative (Kasznik and Lev, 1995). Table 2 also documents that earnings forecasts are more likely to be issued by firms that are larger, followed by more analysts, in a high-tech industry, and unregulated. In addition, firms are more likely to issue earnings forecasts if they have higher market-to-book values and higher return volatility. Mean earnings volatility is lower in management forecast quarters, but there is no significant difference in median earnings volatility.

Table 3 provides firm-level evidence on the association between the *ERC* and management forecast frequency. We partition the 2070 sample firms into four groups according to the percentage of a firm's quarters in which there is a management forecast: (1) none, (2) up to 25%, (3) more than 25% but no more than 50%, and (4) more than 50%. We use these thresholds because the resulting four groups have comparable numbers of observations (639, 431, 502, and 498, respectively). For each firm, we calculate the mean and median ERCs. We then aggregate across firms to calculate the mean of firms' mean ERCs and the mean of firms' median ERCs.

Consistent with our hypothesis, the ERCs are positively associated with forecast frequency. The mean of mean ERC is 7.084 for firms that do not issue any forecasts, 10.999 for firms that issue forecasts in no more than 25% of the firm-quarters, 12.743 for firms that issue forecasts in more than 25% but no more than 50% of the firm-quarters, and 18.500 for firms that issue forecasts in more than 50% of the firm-quarters. The pair-wise ERC differences between the four groups are statistically significant, except between groups (2) and (3).

4. Multivariate results

4.1. Logit models

Table 4 reports the logit results for Eq. (1).[10] In model 1 (both good and bad news forecasts), the sample consists of 12,630 quarters in which managers do not forecast earnings and 4597 quarters in which managers do forecast earnings. Of the management forecast quarters, 1506 convey good news and 3091 convey bad news. Consistent with our hypothesis, *ERC* is positively associated with management forecasts of both good and bad news (z-statistics = 2.64 and 6.31, respectively).

The *EARNINGS_SURPRISE* coefficients are significantly positive in model 2 (good news forecasts only; z-statistic = 8.91) and significantly negative in model 3 (bad news forecasts only; z-statistic = −6.94). Therefore, managers forecast good (bad) news if the magnitude of the earnings surprise is large and positive (negative). In contrast, Kasznik and Lev (1995) find no significant association between management forecasts of good news and the magnitude of the earnings surprise. The difference in statistical significance is likely

[10]Since we use a pooled sample, the coefficients' standard errors are estimated using a clustering procedure that accounts for serial dependence across quarters of a given firm (Rogers, 1993).

Table 3
The univariate association between management forecast issuance and the firm's historic ERC

Percentage of quarters in which the firm issues at least one earnings forecast	*N*	Mean of Mean *ERCs*	Mean of Median *ERCs*
(1) Zero %	639	7.084	6.953
(2) Greater than zero % and less than or equal to 25%	431	10.999	10.759
(3) Greater than 25% and less than or equal to 50%	502	12.743	12.090
(4) Greater than 50%	498	18.500	17.943
Pairwise tests		*t*-stat	*t*-stat
(1) vs. (2)		3.68***	3.21***
(1) vs. (3)		5.09***	4.32***
(1) vs. (4)		8.48***	7.79***
(2) vs. (3)		1.39	0.95
(2) vs. (4)		5.11***	4.49***
(3) vs. (4)		3.83***	3.65***

ERC = the firm's historic earnings response coefficient. We estimate each firm's *ERC* by regressing cumulative market-adjusted stock returns on the earnings news of past quarters. Returns are cumulated over two trading days [0, +1], where day 0 is the earnings announcement date in a past quarter. The earnings news of a past quarter equals the quarter's earnings per share announced on day 0 minus the most recent mean analyst earnings forecast issued prior to the earnings announcement date, scaled by the closing share price at day −1. To estimate the firm's *ERC*, we use the 16 most recent past quarters that have non-missing data for returns and analyst forecast errors. We update our estimates of each firm's *ERC* on a rolling basis from 1994 to 2002. We calculate the mean ERC and the median ERC for each individual firm across all sample quarters. We then aggregate across firms, calculating the mean of firms' mean ERCs and the mean of firms' median ERCs.
*, **, *** *p*-value < 10%, *p*-value < 5%, *p*-value < 1%, respectively, for two-tailed pairwise tests.

attributable to testing power; our good news management forecast sample consists of 1506 observations compared to their 171 observations.

Finally, the *FORECAST_REVISION* coefficients are significantly positive in model 2 (*z*-statistic = 2.33) and significantly negative in model 3 (*z*-statistic = −9.53). Therefore, management forecasts are positively associated with the magnitude of the revision in the analyst forecast of future earnings.[11]

4.2. Tests of causality

We have argued that the direction of causality is from the firm's ERC to the decision to issue a forecast. This makes sense because we estimate the ERC using the market's reactions to the firm's *past* earnings news. Nevertheless, it is possible that management forecasts increase the sensitivity of the market's response to earnings news. If management forecasts affect ERCs, our results may capture causality in the opposite direction.

[11]The pseudo-R^2 ranges from 9.8% to 12.3% and the Chi-square statistics range from 546.31 to 841.28, which compares favorably with extant management forecast studies. For example, Kasznik and Lev (1995) report Chi-square statistics (*p*-values) of 11.82 (0.04) and 49.84 (0.00) for their good news and bad news models, respectively. Frankel et al. (1995) report R^2s ranging from 0.6% to 9.7%.

Table 4
Logistic regression of the decision to issue one or more management forecasts during the quarter (see Eq (1))

Variable	The dependent variable equals one if there is at least one:								
	Management Earnings Forecast Model 1			Management Earnings Forecast of Good News Model 2			Management Earnings Forecast of Bad News Model 3		
	Expected sign	Coefft.	*z*-stat.	Expected sign	Coefft.	*z*-stat.	Expected sign	Coefft.	*z*-stat.
ERC	+	0.007	5.57***	+	0.004	2.64***	+	0.008	6.31***
|EARNINGS_SURPRISE|	+	6.005	2.45**						
|FORECAST_REVISION|	+	23.048	6.12***						
EARNINGS_SURPRISE				+	48.003	8.91***	−	−16.785	−6.94***
FORECAST_REVISION				+	13.900	2.33**	−	−32.143	−9.53***
Ln(MV)	+	0.171	5.19***	+	0.120	2.61***	+	0.206	6.01***
#ANALYSTS	+	0.017	2.02**	+	0.029	2.66***	+	0.010	1.19
MB	?	−0.019	−1.95*	?	−0.011	−0.88	?	−0.022	−2.09**
RTNVOL	?	−82.811	−2.86***	?	−123.989	−2.69***	?	−86.210	−2.61***
EARNVOL	?	−65.901	−2.09**	?	−48.030	−0.96	?	−85.848	−2.47**
HIGH_TECH	+	0.195	2.14**	+	0.261	1.98**	+	0.192	2.03**
REGULATION	−	−1.051	−9.99***	−	−0.891	−6.05***	−	−1.165	−10.70***
Intercept	?	−3.711	−13.74***	?	−4.551	−10.89***	?	−4.304	−14.76***
# forecast quarters		4597			1506			3091	
# no-forecast quarters		12,630			12,630			12,630	
Pseudo R^2		9.8%			12.3%			12.3%	
Wald χ^2 (*p*-value)		810.72 (0.0000)			546.31 (0.0000)			841.28 (0.0000)	

When estimating the coefficients' standard errors, we use a clustering procedure that accounts for serial dependence across quarters of a given firm. We include time dummies for each quarter (1998 Q2 to 2002 Q4) in the regressions to control for temporal fixed effects; the results are not tabulated.

MFDUM = one if the firm issues at least one earnings forecast during the quarter (zero otherwise).
ERC = the firm's historic earnings response coefficient. We estimate each firm's *ERC* by regressing cumulative market-adjusted stock returns on the earnings news of past quarters. Returns are cumulated over two trading days [0, +1], where day 0 is the earnings announcement date in a past quarter. The earnings news of a past quarter equals the quarter's earnings per share announced on day 0 minus the most recent mean analyst earnings forecast issued prior to the earnings announcement date, scaled by the closing share price at day −1. To estimate the firm's *ERC*, we use the 16 most recent past quarters that have non-missing data for returns and analyst forecast errors. We test whether this historic *ERC* is associated with the issuance of a management forecast in the subsequent quarter. For example, we predict the issuance of a management forecast in the first quarter of 1998 using an *ERC* that is estimated using the firm's previous 16 quarters (from the first quarter of 1994 to the fourth quarter of 1997). We update our estimates of each firm's *ERC* on a rolling basis from 1994 to 2002.
EARNINGS_SURPRISE = actual earnings per share for the current quarter minus the most recent mean analyst forecast of current quarter earnings issued before the prior earnings announcement date, scaled by the closing share price one day before the prior earnings announcement date.
FORECAST_REVISION = the earliest mean analyst forecast of one-quarter-ahead earnings issued after the current earnings announcement date minus the most recent mean analyst forecast of one-quarter-ahead earnings issued before the prior earnings announcement date, scaled by the closing share price.
Ln(*MV*) = natural log of the market value of common equity at the beginning of the quarter.
#*ANALYSTS* = number of analysts following the firm prior to the current earnings announcement date.
MB = market-to-book value of common equity at the beginning of the quarter.
RTNVOL = variance in daily raw stock returns over the 250 trading days prior to the beginning of the quarter. We require a minimum of 100 daily stock return observations to compute the variance.
EARNVOL = variance of changes in quarterly earnings per share (EPS), scaled by assets per share at the beginning of the quarter. We measure the change in quarterly EPS as the current quarter EPS minus the EPS of the prior year same quarter. To estimate the firm's *EARNVOL*, we use the 16 most recent past quarters that have non-missing data for earnings changes.
HIGH_TECH = one if the firm reports Compustat SIC codes 2833–2836 (Drugs), 8731–8734 (R&D services), 7371–7379 (Programming), 3570–3577 (Computers), or 3600–3674 (Electronics), and zero otherwise.
REGULATION = one if the firm reports Compustat SIC codes 4812–4813 (Telephone), 4833 (TV), 4841 (Cable), 4811–4899 (Communications), 4922–4924 (Gas), 4931 (Electricity), 4941 (Water), or 6021–6023, 6035–6036, 6141, 6311, 6321, 6331 (Financial firms), and zero otherwise.
*, **, *** *p*-value < 10%, *p*-value < 5%, *p*-value < 1%, respectively, two-tailed.

To determine the direction of causality, we examine whether the firm's ERC is correlated with future or past decisions to forecast earnings. Specifically, we construct a mean ERC in year t (ERC_t) by averaging over the year's quarterly ERC values. We measure future (past) decisions to issue management forecasts by averaging over the quarterly $MFDUM$ values in year $t+1$ ($t-1$). We then examine the association between the ERC of year t and the issuance of management forecasts in year $t+1$ ($t-1$) by estimating

$$ERC_t = \beta_0 + \beta_1 MFDUM_{t+1} + \beta_2 MFDUM_{t-1} + Controls + v. \quad (2)$$

As in Eq. (1), we control for firm size ($Ln(MV_t)$), analyst following ($\#ANALYSTS_t$), the market-to-book ratio (MB_t), return volatility ($RTNVOL_t$), and earnings volatility ($EARNVOL_t$); we construct annual values for these control variables by averaging over their quarterly values in year t. Eq. (2) also includes high-tech ($HIGH\_TECH_t$) and external regulation ($REGULATION_t$) dummy variables to control for industry-specific variation in ERC. Following Ali and Zarowin (1992), in Eq. (2) we introduce a control for earnings persistence ($PERS_t$) using the earnings-to-price ratio.[12] Our sample is from 1998 to 2002, but we require three consecutive years ($t-1$, t, $t+1$) to estimate Eq. (2). Thus, our regressions are estimated for the 1999 to 2001 period, which yields 2918 annual observations.

As Table 5 reports, we find significant positive associations between the firm's ERC and future management forecasts ($\beta_1 > 0$). In contrast, we find insignificant associations between the firm's ERC and past management forecasts ($\beta_2 = 0$). These findings suggest that causality is from the ERC to management forecast issuance, rather than the other way around.

4.3. Historic ERC as a proxy for managers' ex ante beliefs

Our maintained assumption is that management beliefs about earnings informativeness are associated with the strength of the market's reaction to the firm's past earnings news. To investigate whether this assumption is valid, we test whether the market reaction to management forecasts is stronger for firms with high ERCs compared to firms with low ERCs by estimating

$$MFCAR[0,+1] = \theta_0 + \theta_1 MF\_NEWS + \theta_2 MF\_NEWS * HIGH\_ERC + \varepsilon, \quad (3)$$

where $MFCAR[0, +1]$ equals the two-day $[0, +1]$ market-adjusted stock return, day 0 is the management forecast date, and MF_NEWS equals the management's forecast of current quarter earnings minus the analyst consensus forecast issued prior to the management forecast date ($AF1$), scaled by the closing share price on day -1. If management issues a range forecast, we subtract the analyst forecast from the mean of the management forecast range. We drop management forecasts that do not provide point or range estimates and management forecasts of annual earnings, leaving us with 5083

[12]Specifically, we measure the earnings-to-price ratio as the sum of earnings per share over the prior four quarters divided by the share price at the end of the prior quarter. We then rank firms into groups by their earnings-to-price ratio. We classify all firms with positive earnings into the first nine groups, with approximately equal numbers of firms in each group. All firms with negative earnings are classified as group 10. The earnings of firms in the middle six groups are regarded as predominantly permanent ($PERS = 1$), and the earnings of firms in the top two and bottom two groups are regarded as predominantly transitory ($PERS = 0$). We construct an annual value for the persistence variable by averaging over its quarterly values in year t.

Table 5
Tests of causality between management forecasts and earnings informativeness (see Eq. (2))

	Coefft.	*t*-stat.	Coefft.	*t*-stat.	Coefft.	*t*-stat.
$MFDUM_{t+1}$	8.564	6.42***	4.946	3.99***	4.392	3.55***
$MFDUM_{t-1}$	3.018	1.63	1.462	0.84	1.950	1.13
$Ln(MV)_t$			1.035	1.73*	0.507	0.85
$\#ANALYSTS_t$			0.349	2.02**	0.405	2.38**
MB_t			0.860	4.05***	0.859	4.12***
$RTNVOL_t$			1525.938	2.27**	2015.387	2.99***
$EARNVOL_t$			−3251.663	−8.60***	−3068.024	−8.41***
$HIGH\_TECH_t$			4.646	1.93*	4.633	1.94*
$REGULATION_t$			−5.075	−3.91***	−4.992	−3.89***
$PERS_t$					7.395	5.56***
Intercept	7.787	10.42***	−5.404	−1.50	−7.327	−2.02**
# observations	2918		2918		2902	
R^2	3.7%		11.8%		13.2%	

When estimating the coefficients' standard errors, we use a clustering procedure that accounts for serial dependence across annual observations of a given firm. We include time dummies in the regressions to control for temporal fixed effects; the results are not tabulated.
ERC_t = mean value of the firm's earnings response coefficient (*ERC*) in year t (see Table 4).
$MFDUM_t$ = mean value of the management forecast dummy (*MFDUM*) in year t. *MFDUM* = one if the firm issues at least one earnings forecast during the quarter (zero otherwise).
$Ln(MV)_t$ = mean of the firm's log of market value in year t.
$\#ANALYSTS_t$ = firm's mean analyst following in year t.
MB_t = firm's mean market-to-book ratio in year t.
$RTNVOL_t$ = mean value of the firm's returns volatility (*RTNVOL*) in year t (see Table 4).
$EARNVOL_t$ = mean value of the firm's earnings volatility (*EARNVOL*) in year t (see Table 4).
$HIGH\_TECH_t$ = one if the firm reports Compustat SIC codes 2833–2836 (Drugs), 8731–8734 (R&D services), 7371–7379 (Programming), 3570–3577 (Computers), or 3600–3674 (electronics), and zero otherwise.
$REGULATION_t$ = one if the firm reports Compustat SIC codes 4812–4813 (Telephone), 4833 (TV), 4841 (Cable), 4811–4899 (Communications), 4922–4924 (Gas), 4931 (Electricity), 4941 (Water), or 6021–6023, 6035–6036, 6141, 6311, 6321, 6331 (Financial firms), and zero otherwise.
$PERS_t$ = mean value of the firm's earnings persistence (*PERS*) in year t. *PERS* = one if earnings are predominantly persistent (zero otherwise). Following Ali and Zarowin (1992), we rank firms into groups by their earnings-to-price ratio. We classify all firms with positive earnings into the first nine groups, with approximately equal numbers of firms in each group. All firms with negative earnings are classified as group 10. The earnings of firms in the middle six groups are regarded as predominantly permanent, and the earnings of firms in the top two and bottom two groups are regarded as predominantly transitory.
*, **, *** p-value < 10%, p-value < 5%, p-value < 1%, respectively, two-tailed.

management forecasts. The dummy variable *HIGH_ERC* equals one if the firm's ERC is greater than the sample median, and zero otherwise.

The market's reaction to the management forecast news equals $\theta_1 + \theta_2$ for high-ERC firms and θ_1 for low-ERC firms. We expect the market reacts more strongly to management forecast news if the firm has a high historic ERC (i.e., $\theta_2 > 0$). In untabulated results, our estimate of θ_1 is 3.323 (t-statistic = 17.92) and our estimate of θ_2 is 3.306 (t-statistic = 9.28). Therefore, the market reacts more strongly to the management forecast if the firm has a higher ERC. This result supports our assumption that the firm's historic ERC is a good proxy for how strongly investors will respond to management forecast news.

4.4. Sensitivity tests

We perform five sensitivity tests; in each test, we find significant positive associations between a firm's historic *ERC* and management forecast issuance. The results are significant for both good news and bad news management forecasts and findings for the control variables are similar to those tabulated.

First, we re-define the dependent variable to equal the number of management forecasts issued during the quarter rather than the issuance of at least one management forecast. Since the re-defined variable is discrete rather than binary, we estimate the models using a Poisson regression.

Second, we find that 3731 (20%) observations have negative *ERC* values, indicating that the *ERC* variable is estimated with considerable noise. Therefore, we winsorize the *ERC* variable at the top and bottom 20% of the distribution (the winsorized *ERC* variable ranges from zero to 21.689) and estimate Eq. (1) using the winsorized *ERC* variable. The results are even more significant than those tabulated. Additionally, we estimate Eq. (1) after dropping observations that have negative *ERCs*, and we estimate historic ERCs using the past 20 and 24 quarters as alternatives to the past 16 quarters. In each of these tests, the *ERC* variable has significantly positive coefficients for both good news and bad news forecasts.

Third, we examine the association between the *ERC* and management forecasts of neutral or mixed news (recall that we exclude these forecasts from Table 4). The *ERC* variable has positive and significant coefficients whereas the $|EARNINGS\_SURPRISE|$ coefficients are insignificant. Therefore, we obtain mixed evidence as to whether managers forecast neutral or mixed news in order to convey earnings information to investors.

Fourth, Frankel et al. (1995) find that managers forecast earnings if they intend to raise external financing. We create a variable (*EXT_FIN*) that equals the issuance of stock (Compustat #84) plus the issuance of debt (Compustat #86) during the current and next quarters, scaled by assets at the beginning of the current quarter. To capture significant financing, we also create a dummy variable that equals one if $EXT\_FIN \geqslant 0.05$ (zero otherwise). Our tabulated models do not control for external financing because data are available in only 12,850 firm-quarters and we wish to maximize our sample size. The financing variables are generally significant in the good news models but insignificant in the bad news models.

Finally, we include the following additional controls for risk: stock beta, analyst forecast dispersion, and the variance in earnings levels.[13] We find that the stock beta coefficients are insignificant. The analyst forecast dispersion coefficients are significantly negative in the good news models but insignificant in the bad news models. The earnings volatility coefficients are significantly positive in the bad news models but insignificant in the good news models.

5. Conclusion

By forecasting earnings, managers are able to convey value-relevant information to investors. A management forecast is effective in reducing information asymmetry if

[13]Waymire (1985) and Lev and Penman (1990) measure earnings volatility using the variance in earnings changes whereas Baginski et al. (2004) use the variance in earnings levels.

investors perceive that the forecast is informative about the firm's value. Thus, we argue that a manager is more likely to forecast earnings if the manager expects that the market will respond more strongly to the earnings news contained in the forecast. The manager likely anticipates a stronger market response if the market responded more strongly to the earnings news of prior quarters. Accordingly, we predict that managers are more likely to forecast earnings if their firms have larger historic ERCs. Consistent with this prediction, we find that management forecast issuance is positively associated with a firm's historic ERC. This finding obtains for management forecasts both of good news and of bad news. We conclude that managers are more likely to forecast earnings when investors will perceive the earnings news as being more informative of the firm's value.

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