

# “The value relevance of expected vs. unexpected going concern opinions”

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# THE VALUE RELEVANCE OF EXPECTED VS. UNEXPECTED GOING CONCERN OPINIONS

## Abstract

Previous event studies find that going concern opinions (GCOs) convey significant information to the market when the audit reports appear to be unexpected. Using the value relevance method, this paper examines the differential impact of expected and unexpected going concern opinions on the market value of US firms for the 2000–2006 time period. The results suggest that while both firms receiving expected and unexpected GCOs suffer a drop in their average market value, the decrease is larger in the case of firms with unexpected GCOs. It is also observed that the market tends to shift the weight they place on earnings to the book value of equity in valuing firms with unexpected GCOs. Specifically, the decrease in the pricing multiple of earnings is larger for the case of unexpected GCOs. This result suggests that GCOs are more informative when they are unexpected. The study complements existing work by exploring whether expected GCOs have any differential valuation impact than unexpected GCOs instead of looking at the informativeness of GCOs alone.

## Keywords

going concern opinions, value relevance, financial  
distress, pricing multiples

## JEL Classification

M41, G32, G33

## INTRODUCTION

This study examines whether expected and unexpected going concern opinions (GCOs) have differential information content for firm valuation. Specifically, we investigate: (i) whether the market value of firms with unexpected GCOs differs from that of firms with expected GCOs and (ii) whether the relative value relevance of book value of equity and earnings differs between these two groups of firms. Prior studies on the information content of GCOs, using the event study methodology, have mixed results. By using the value relevance method, we hope to shed new light on this issue.

The going concern assumption states that the business will remain in operation for the foreseeable future. It underlies certain accounting measurement and valuation concepts, such as the historical cost, revenue recognition, and matching principles. In this regard, the validity of the going concern assumption strikes at the roots of the informativeness of financial statements (Citron & Taffler, 2001; O'Reilly, 2010). For this reason, decision-makers find an assessment of the firm's ability to remain as a going concern useful.

For decades, academics have analyzed the usefulness of GCOs as "early warning signals" for financial statement users. Typically, this research question has been examined using the event study methodology – by analyzing the stock returns surrounding the release of GCOs.

But these studies have provided mixed and inconclusive evidence on a potential link between the issuance of GCOs and share price revisions. While some research has provided evidence that GCOs are, on average, associated with a significant decline in stock prices (Fleak & Wilson, 1994; Jones, 1996; Carlson et al., 1998), other research papers have not found a significant price reaction to GCOs, supporting the notion that financial statement users do not find value in the auditors' warning signal (Ball et al., 1979; Chow & Rice, 1982; Dodd et al., 1984). Thus, the mixed empirical evidence raises doubts regarding the usefulness of GCOs disclosure.

Craswell (1985) suggests that the mixed and inconclusive results of previous papers could be attributed to the use of the event study method. In this regard, two limitations have been emphasized. First, the identification of when the market first gets hold of the information (i.e., the event window) is critical in event studies. In GCOs studies, it is particularly challenging to identify the date when GCOs information first becomes available (i.e., the event date), because the market could have anticipated GCOs from sources other than the audit report. A second limitation of using the event study method relates to the problem of segregating the effect of the audit report from all other concurrent signals at the time the audit report is released. Since the audit opinion is usually issued with the financial statements, it is possible that any observed market reaction around the event date was caused by the information in the financial statements rather than that of the auditor's report.

The value relevance literature offers a valuation framework that links firm value to its earnings and book value of equity (Burgstahler & Dichev, 1997; Barth et al., 1998; Collins et al., 1997; Collins et al., 1999). Empirical evidence shows that both the book value of equity and earnings display a positive association with the firm value and they provide complementary information to one another. While the book value of equity proxies for a firm's liquidation values, earnings reflect its value from continuing operations and growth opportunities.

Prior value relevance research also shows that the relative explanatory power of the book value of equity and earnings is a function of a firm's financial health (Burgstahler & Dichev, 1997; Barth et al., 1998; Ashton et al., 2003). As a firm's financial health deteriorates, the explanatory power of the book value of equity increases, while that of earnings decreases. Blay et al. (2011), using the value relevance approach, have found evidence that GCOs have an impact on the market value of financially stressed firms resulting in a shift from an income statement valuation focus to a balance sheet focus.

Additionally, previous event studies have recognized the importance of stakeholders' expectation to evaluate the information content of GCOs (Fleak & Wilson, 1994; Jones, 1996) and found that the stakeholders' reaction to GCOs is conditional upon the extent to which the audit opinion is unexpected (e.g., inconsistent with clients' financial status and/or their abilities to continue in existence). That is, the market response to unexpected GCOs is stronger than that to expected GCOs. Similarly, if expected GCOs provide no new information to the market, whereas unexpected GCOs do, the two can have differential valuation impact.

In this paper, instead of looking at the informativeness of GCOs alone (Blay et al., 2011), we examine whether expected GCOs have any differential valuation impact than unexpected GCOs. We contribute to the existing literature by exploring (i) the differential impact of the issuance of expected versus unexpected GCOs on the valuation of equity, and (ii) the different roles played by the book value of equity and earnings in the valuation of firms receiving expected versus unexpected GCOs. If unexpected GCOs and expected GCOs provide different information on a firm's financial condition (e.g., the probability of bankruptcy), we expect that the market lowers its valuation of the firm to a different extent upon receiving unexpected vs. expected GCOs. Further, as suggested by prior studies (Subramanyam & Wild, 1996; Barth et al., 1998; Blay et al., 2011), the book value of equity provides a proxy for the liquidation value of a company, while earnings capture the value from continuing operations and growth; with

a firm's existence in doubt, we expect that the liquidation value becomes relatively more relevant than the value of growth. Hence, we hypothesize that for companies receiving unexpected GCOs, the relative value relevance of the book value of equity increases, while that of earnings decreases to a larger extent than firms receiving expected GCOs. Further, we examine whether the GCOs provide any incremental information to that contained in a firm's financial distress condition by controlling by a firm's distress condition.

We observe that firms receiving unexpected GCOs suffer a more significant drop in their market value than firms receiving expected GCOs. Also, the decrease in the pricing multiple of earnings is more significant for the unexpected GCO firms. Hence, our results suggest that unexpected GCOs are more informative about the valuation of distressed firms than expected GCOs. Further, we observe that both the negative impact of unexpected GCOs on the market value of firms and the shift from an income statement valuation focus to a balance sheet only occur for firms receiving first-time GCOs, regardless of their financial distress level.

The rest of the paper is organized into five parts. Following the introduction, the next section discusses previous empirical findings and describes our research hypotheses. The second section outlines our model specification. The third section describes our sample, and the fourth section discusses the results and sensitivity analyses. The final section presents the conclusion and possible limitations of the study.

## 1. LITERATURE REVIEW AND HYPOTHESES

The information conveyed by GCOs has been a subject for considerable research and debate. The main empirical question that has been addressed in previous research relates to whether the audit report can signal valuable information about the ability of companies to remain as a going concern. As mentioned above, different studies have shown that GCOs are not associated with abnormal returns (Ball et al., 1979; Chow & Rice, 1982; Dodd et al., 1984), suggesting that auditor's evaluation of the going concern status does not affect investor's behavior. The main reason cited in explaining why GCOs may not convey valuable information to financial statement users is that the going concern assessment is one of the most difficult and complex decisions faced by auditors (Louwers, 1988). The great amount of evidence collected during the audit process is ambiguous with regard to whether a firm continues to operate and can be subject to alternative, sometimes conflicting, interpretations. Thus, the going concern assessment is a complex and non-routine task faced by auditors (Nogler, 1995). Making this task even more daunting is that audit standards are ambiguous on this issue and cannot serve as a meaningful guide to auditors (Koh, 1991; Carcello et al., 2003). SAS 59, *The Auditors Consideration of an Entity's Ability to*

Continue as a Going Concern, provides no guidance on the weight that auditors should put on the various evidence they collect in forming their opinions. That is, the assessment of the going concern assumption involves a substantial amount of professional judgment and is highly subjective. As a result, financial statement users face the inherent inaccuracy contained in the audit opinion.

This argument is consistent with the results documented by previous studies on auditors' abilities to predict a firm's going concern status. By comparing the predictive ability of auditors' going concern opinions with that of the bankruptcy prediction models (Altman, 1982; Koh & Killough, 1990), these studies document that auditors have difficulties in identifying financially distressed companies and the statistical models are better predictors. This evidence thus suggests that financial statement users need to search for other more reliable warning devices on a firm's inability to remain in operation (Casterella et al., 2000).

Other papers, in contrast, provide evidence that GCOs are associated with a significant decline in stock price on average (Fleak & Wilson, 1994; Jones, 1996; Carlson et al., 1998), which suggests that GCOs provide information useful for financial statement users. Many research papers have concluded that auditors are able to identify com-

panies with financial distress problems (Kida, 1980; Mutchler, 1985; Menon & Schwartz, 1987). In effect, auditors, in the course of an audit, have access to inside information not generally available to financial statement users. This relatively privileged information together with the auditors' expert knowledge place them in a better position than any other financial statement users to judge whether the going concern assumption of a firm holds. Thus, it could be argued that the GCO contains valuable information that would cause investors to revise their expectation about a firm's financial status.

As an alternative to event studies, the value relevance literature proposes a framework that links a firm's market value to its earnings and book value of equity. Several studies provide evidence that earnings and book value of equity have complementary and different implications in equity valuation (Ohlson, 1995; Barth et al., 1998; Collins et al., 1997, 1999). Hence, a firm's market value of equity is a weighted average of the value from continuing operation plus the value of future growth options and liquidation values (Tan, 2004). While earnings proxy for growth opportunities, the book value of equity measures a firm's liquidation value<sup>1</sup>.

In the valuation model, earnings represent a proxy for the growth option. In the absence of financial distress, a company is expected to produce a stream of earnings in the future from its assets-in-place. Therefore, the principal determinant of a "healthy" firm's market value is its strength in generating earnings from its assets-in-place. Further, as the going concern value (i.e., the value of the net assets-in-place) exceeds the liquidation value, earnings play a more significant role in determining the market value of equity (Hayn, 1995; Burgstahler & Dichev, 1997; Barth et al., 1998). Conversely, as a firm's likelihood of failure increases, earnings no longer provide useful information for assessing the firm's future. Therefore, the informativeness of earnings on a firm's market value depends on its going concern status.

Book value of equity can represent either the value in use or the liquidation value of the firms' net assets-in-place. Which value it represents depends on a firm's financial status. When there is a high risk that the firm will cease operation, the liquidation value of net assets likely exceeds their going concern value. Also, the firm's resources likely have to be adapted to alternative use, and their value can be significantly lower than their current going concern value. Under these conditions, the appropriate measure of the value of a firm's net assets is its liquidation value. Thus, the book value of equity serves as a proxy for the value of the abandonment or liquidation option in this scenario (Berger et al., 1996; Barth et al., 1998; Holthausen & Watts, 2001; Ashton et al., 2003). As such, the book value of equity assumes a more critical role than earnings in the valuation of financially distressed firms.

Blay et al. (2011) are the first examining the impact of GCOs on the valuation process by using the value relevance approach. These authors find that GCOs decrease the market value of financially stressed firms resulting in a shift from an income statement valuation focus to a balance sheet focus. While Blay et al. (2011) provide evidence that firms with GCOs suffer a drop in their average market value, they do not explore whether the market reaction depends on the rational expectation of those GCOs.

Previous event studies find that GCOs convey significant information to the market when the audit reports appear to be unexpected (e.g., inconsistent with clients' financial status and/or their abilities to continue in existence). Indeed, several studies attempt to decompose GCOs into expected vs. unexpected and generally report significant adverse reactions to the issuance of unexpected GCOs (Loudder et al., 1992; Fleak & Wilson, 1994; Jones, 1996). For instance, Blay and Geiger (2001) find a negative market reaction for firms that receive GCOs but eventually survive, but no significant reaction for firms that receive GCOs and subsequently go bankrupt. That is, the market response to unexpected GCOs seems to be stronger

<sup>1</sup> A necessary implication of the different roles of earnings and the book value of equity in the valuation process is that the relative value relevance of these variables changes with a firm's financial health. Earnings are relatively more important for valuing healthy firms while the book value of equity is relatively more important for valuing distressed firms (Burgstahler & Dichev, 1997; Barth et al., 1998; Ashton et al., 2003).

than that to expected GCOs. Similarly, if expected GCOs provide no new information to the market, whereas unexpected GCOs do, the two can have differential valuation impact.

Capital market and experimental studies provide evidence that the information conveyed by audit opinions, rather than being homogeneous, depends on the extent to which GCOs are unexpected (Loudder et al., 1992; Fleak & Wilson, 1994; Jones, 1996; Holder-Webb & Wilkins, 2000). These studies emphasize the importance of controlling for stakeholder's prior expectation when assessing the information conveyed by GCOs. Only GCOs that do add information to what is already publicly known from a firm's financial reports can convey information content, while expected GCOs provide no new information. Previous literature shows that GCOs are largely associated with financial distress indicators, and therefore the audit opinion can be rationally predicted by stakeholders using publicly available information (Mutchler, 1985; Dopuch et al., 1987; Koh & Killough, 1990). In many occasions, GCOs simply confirm a pattern of financial deterioration not adding any significant information to what it is already publicly disclosed in a firm's financial statements. Therefore, stakeholders' reaction to GCOs would depend on the probability that auditors issue GCOs. If such a probability is high, the market expectation will also be high, and the informativeness of the audit opinion will be low. On the contrary, if GCOs are unexpected, they will convey additional information content, which, in turn, will have an impact on stakeholders' valuation process. For this reason, we investigate the extent to which the valuation implication of GCOs is affected by their unexpected nature. Therefore, for firms receiving unexpected GCOs, one would expect a significantly larger drop in their average market value related to that of firms receiving GCOs expected by the market. This leads to our first hypothesis:

*H1: For firms receiving unexpected GCOs, the drop in their average market value is larger than that of firms receiving GCOs already expected by the market.*

Further, according to the literature mentioned above on both event and value relevance studies, one would also expect a shift in the value rele-

vance from earnings to book value of equity in the unexpected GCOs firms. This leads to our second hypothesis:

*H2: For firms receiving unexpected GCOs, the value relevance of its book value of equity increases, while that of its earnings decreases, compared with firms receiving expected GCOs.*

## 2. MODEL SPECIFICATION AND EMPIRICAL CONSTRUCTS

To test the effect of GCOs on the market valuation and the pricing multiples of equity book value and earnings, we start with the following baseline model specification:

$$MVE_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 GC_{it} + \beta_4 GC \cdot BVE_{it} + \beta_5 GC \cdot NI_{it} + \varepsilon_{it}, \quad (1)$$

where  $MVE$  is the market value of equity, computed as the stock price per share on the annual earnings announcement date multiplied by the total number of shares outstanding. We use the stock price at the earnings announcement date instead of the fiscal year end, because the auditor's opinion is not available to the market at the fiscal year end.  $BVE$  is the book value of equity at the fiscal year end.  $NI$  is the earnings or net income of the fiscal year.  $GC$  is a dummy variable that takes on a value of 1 if the firm receives a going concern opinion for the fiscal year and 0 otherwise. This dummy variable captures the average difference in the market value of firms receiving GCOs versus those without such reports. The interaction terms  $GC \cdot BVE$  and  $GC \cdot NI$  capture the impact of  $GC$  on the pricing multiples of the book value of equity and earnings, respectively. Negative coefficients on the interaction terms suggest that the pricing multiples of firms receiving GCOs are lower than those of firms without GCOs. As current earnings reflect a firm's future income (Barth et al., 1998), with the firms' survival in doubt (as reflected by the issuance of GCOs), the weight the market puts on the future earnings likely decreases. Alternatively, earnings of firms in financial distress – likely the case for

most firms receiving GCOs – are more likely to include nonrecurring items (Collins et al., 1997). Elliott and Hanna (1996) and Basu (1997) all suggest that the market puts less weight on transitory items. As in Blay et al. (2011), we expect the pricing multiples of earnings to be lower for firms with GCOs. That is, we expect the coefficient of  $GC \cdot NI$  to be negative. Book value of equity, on the other hand, captures the abandonment option or liquidation value (Barth et al., 1998; Collins et al., 1997). With its continual existence in doubt, the value of firms receiving GCOs is likely to be captured mostly by the book value. Consequently, we expect: (i) the sum of the coefficients of  $NI$  and  $GC \cdot NI$  (i.e. pricing multiples of earnings of going concern firms) to be insignificantly different from zero; and (ii) the ratio of the sum of the coefficients of  $BVE$  and  $GC \cdot BVE$  (i.e., pricing multiples of book value of equity of going-concern firms) to that of  $NI$  and  $GC \cdot NI$  be greater than that of  $BVE$  and  $NI$ .

To isolate the valuation effects of expected vs. unexpected GCOs on the market valuation and the pricing multiples of equity book value and earnings, we differentiate the role played by expected and unexpected GCO in the following models:

$$MVE_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 ExpGC_{it} + \beta_4 ExpGC \cdot BVE_{it} + \beta_5 ExpGC \cdot NI_{it} + \varepsilon_{it}, \quad (2)$$

$$MVE_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 UnexpGC_{it} + \beta_4 UnexpGC \cdot BVE_{it} + \beta_5 UnexpGC \cdot NI_{it} + \varepsilon_{it}, \quad (3)$$

$$MVE_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 ExpGC_{it} + \beta_4 ExpGC \cdot BVE_{it} + \beta_5 ExpGC \cdot NI_{it} + \beta_6 UnexpGC_{it} + \beta_7 UnexpGC \cdot BVE_{it} + \beta_8 UnexpGC \cdot NI_{it} + \varepsilon_{it}, \quad (4)$$

where  $ExpGC$  is a dummy variable that takes on a value of 1 if the firm receives an expected going concern opinion for the fiscal year and 0 otherwise, while  $UnexpGC$  is a dummy variable that takes on a value of 1 if the firm receives an unexpected opinion for the fiscal year and 0 otherwise. To distinguish expected vs. unexpected

GCOs we rely on (i) the firm's financial distress level (Zmijewski's probability of bankruptcy) and (ii) whether or not the firm receives a first going concern opinion.

In Model (2), we replace the general  $GC$  in Model (1) by expected ones,  $ExpGC$ , as well as its interactions with  $BVE$  and  $NI$ . Therefore, by estimating Model (2), we provide a comparison of firms with expected GCOs with those having clean opinions. Model (3) is similar to Model (2), but excluding firms with expected GCOs, where the coefficient of interest is  $UnexpGC$ , as well as its interactions with  $BVE$  and  $NI$ . That is, Model (3) focuses on the case of firms either without GCOs or those with unexpected GCOs. Finally, we estimate Model (4) to simultaneously compare the impact of expected versus unexpected GCOs.

We apply these models to our full sample and a subsample of financially distressed firms. According to previous research, we classify firms as financially distressed if they have negative working capital, net income or operating cash flows (Hopwood et al., 1994; Geiger & Raghunandan, 2002; Ruiz-Barbadillo et al., 2009). We adjust the standard errors for heteroscedasticity, serial and cross-sectional correlation using the two-way clustering method proposed by Petersen (2009).

### 3. SAMPLE AND DESCRIPTIVE STATISTICS

#### 3.1. Sample

We gather our auditor opinion data from Audit Analytics. We use the Audit Analytics audit opinion data rather than those in the Compustat database, because Compustat does not identify GCOs separately from other opinions<sup>2</sup>. We then match the audit opinion data with the financial data in Compustat. To compute the market value on the date of the earnings announcement, we collect the stock price data from CRSP database. Our sample, thus, includes all non-financial firm-years with all the required audit opinion, financial, and stock

2 In Compustat database, audit opinions are classified into five categories: unqualified, unqualified with explanatory language, qualified, disclaimer, and adverse opinions. GCO can be in any one of these categories. Audit Analytics, on the other hand, explicitly identifies firms with GCOs.

**Table 1.** Sample distribution**Panel A.** Distribution by industry and year

Year	Energy	Materials	Industrials	Consumer discretionary	Consumer staples	Health care	Financials	Information Technology	Telecom services	Utilities	Other	Total
2000	225	215	691	807	189	696	17	1,342	127	112	21	4,442
2001	246	216	651	816	201	700	19	1,234	103	113	12	4,311
2002	269	264	634	852	213	706	18	1,169	121	132	6	4,384
2003	274	275	634	835	209	701	20	1,096	131	131	2	4,308
2004	286	286	638	812	207	733	20	1,077	140	137	1	4,337
2005	321	303	648	771	201	735	21	1,026	137	136	3	4,302
2006	353	285	663	744	203	738	24	954	119	132	12	4,227
Total	1,974	1,844	4,559	5,637	1,423	5,009	139	7,898	878	893	57	30,311

**Panel B.** Distribution by distress level and year

Year	Non-financially distressed	Financially distressed	Total
2000	1,828	2,614	4,442
2001	1,731	2,580	4,311
2002	1,921	2,463	4,384
2003	2,209	2,099	4,308
2004	2,456	1,881	4,337
2005	2,424	1,878	4,302
2006	2,375	1,852	4,227
Total	14,944	15,367	30,311

price data in the period 2000–2006. We start from year 2000, because Audit Analytics starts the coverage of auditor opinion from year 2000. Our full sample includes 30,311 firm-year observations.

Panel A of Table 1 describes our sample distribution across industries and years. Our sample has a concentration in the Information Technology industry sector, which constitutes about 26% of our sample, followed by the health care sector (16.5%). There is no clustering of the sample in a particular year. Panel B of Table 1 groups our observations by the financial distress level and year. About 50.7% (15,367 observations) of our sample are financially distressed. There are more financially distressed firms in the earlier years of our sample period (2000–2002). 2000–2002 is the period when the tech bubble busts, followed by the collapse of Enron and Arthur Andersen, and a series of accounting scandals. All these events likely lead to financial distress in firms during those years and results in a higher proportion of distressed firms in our sample.

Our sample includes all non-financial firms that have the required financial and audit opinion data in the period 2000–2006. Panel A shows the distribution of these 30,311 firm-year observations across industries and over time. Panel B shows the distribution by year and financial distress level.

### 3.2. Descriptive statistics

In addition to the distribution of financially distressed firms versus non-distressed firms over time, we are also interested in whether the characteristics of these financially distressed firms differ significantly from those of other firms in our sample. Table 2 provides such a comparison using both the parametric *t*-test and the non-parametric Wilcoxon test. As shown in Table 2, financially distressed firms are significantly smaller than healthy firms, measured either by the market value or book value of equity. Further, the financially distressed firms have lower net income and are more likely to receive GCOs.

**Table 2.** Comparison of characteristics of financially distressed firms with non-distressed firms

Characteristics	Non-distressed				Distressed				t-test	Wilcoxon Z-statistic
	Mean (std. dev.)	Median	Lower quartile	Upper quartile	Mean (std. dev.)	Median	Lower quartile	Upper quartile		
Market value of equity (\$ millions)	4,766.04 (20,445)	551.71	131.03	1,979.81	2,274.87 (11,458)	166.04	45.78	708.74	12.69***	41.29***
Book value of equity (\$ millions)	1,594.19 (6,014)	253.26	76.53	823.99	900.07 (5,364)	61.80	14.76	245.58	10.59***	56.89***
Net income (\$ millions)	258.83 (1,192)	27.83	7.01	104.46	-14.59 (1,392)	-8.11	-31.30	-0.25	18.39***	112.02***
Expected GC (Zmijewski score > 0.28)	0.00% (0.00%)	0.00%	0.00%	0.00%	3.98% (19.54%)	0.00%	0.00%	0.00%	-25.22***	-24.62***
Expected GC (non-first GC)	0.17% (4.17%)	0.00%	0.00%	0.00%	2.62% (15.96%)	0.00%	0.00%	0.00%	-18.33***	-18.02***
GC	0.38% (6.16%)	0.00%	0.00%	0.00%	8.28% (27.56%)	0.00%	0.00%	0.00%	-34.64***	-33.57***
No. of obs.	14,944				15,367					

Note: \*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels, respectively.

Table 3 describes the correlation between the variables. The Pearson correlation is presented above the diagonal, and the Spearman correlation lies below the diagonal. As the Pearson and Spearman correlations are similar to one another, we focus our discussion on the Spearman correlation. Consistent with results in prior studies, the market value of firms has a significantly positive correlation with book value and net income. However, it has a negative correlation with GC. The coefficient of GC also has a negative correlation with the book value of equity and net income. This is consistent with prior research suggesting that investors account for the going concern opinion in forming their firm valuation (Blay et al., 2011).

**Table 3.** Correlation matrix

Variables	MVE	BVE	NI	GC
MVE	1	0.766***	0.484***	-0.042***
BVE	0.861***	1	0.413***	-0.045***
NI	0.518***	0.573***	1	-0.0301***
GC	-0.191***	-0.249***	-0.201***	1

Note: \*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels, respectively.

This table presents the correlation between the variables. Pearson correlation is shown above the diagonal, while Spearman correlation lies below the diagonal.

### 3.3. Contingency analyses

To further examine the relation between firms' financial distress and the probability of receiving GCOs, a contingency analysis between these two

variables is shown in Table 4. We observe a significantly smaller number of observations in the cell where firms are not financially distressed but yet receive GCOs. The actual number of observations is only 57, whereas the expected number (when the two variables are independent) is 655.2. On the other hand, the number of financially distressed firms receiving GCOs almost doubles that of the expected number (actual number = 1,272; expected number = 673.8). Both the likelihood ratio test and Pearson Chi-square test confirm that firms' financial distress level and the probability of receiving GCOs are not independent.

**Table 4.** Contingency table of financial distress vs. going concern opinion for all firms

Financial distress	Going concern		Total
	0	1	
0	14,887 (14,288.8)	57 (655.2)	14,944 (14,944)
1	14,095 (14,693.2)	1,272 (673.8)	15,367 (15,367)
Total	28,982 (28,982)	1,329 (1,329)	30,311 (30,311)

Note: Likelihood ratio (Chi-square) = 1.400\*\*\* (Pearson Chi-square = 1.100\*\*\*), \*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels, respectively.

## 4. EMPIRICAL RESULTS

### 4.1. Preliminary results

We run a regression analysis with model specification (1) and report baseline results in column 1 of Panel A in Table 5 using the general GCO and its

interactions with *BVE* and *NI* as our variables of interest<sup>3</sup>. Our results suggest that for firms without GCOs, the pricing multiples of earnings (coefficient of *NI* = 2.991) is about 2.5 times that of the book value of equity (coefficient of *BE* = 1.212). This result suggests that a significant portion of these firms' market value depends on their future earnings. On the other hand, for firms receiving GCOs, the pricing multiple of book value, computed as the sum of *BVE* and  $GC \cdot BVE$ , is 0.874 ( $= 1.212 - 0.338$ , significant at 1% level), while that of earnings, computed as the sum of *NI* and  $GC \cdot NI$  is  $-0.296$  ( $= 2.991 - 3.287$ , insignificant). This suggests that when firms receive GCOs, the market changes the valuation model from one that depends largely on earnings to one that relies almost exclusively on the book value of equity. This change in the relative importance of earnings and book value is mainly due to the significant drop in the pricing multiples of earnings as captured by the coefficient of  $GC \cdot NI$  (coefficient =  $-3.287$ , significant at 1% level). In addition to the change in earnings multiples, the overall market value of firms receiving GCOs drops significantly. The coefficient of *GC* is  $-778.6$ , suggesting that the market value of GCO firms is on average \$778.6 million below that of firms without GCOs. This evidence on the shift is consistent with previous studies documenting a shift from a balance sheet and net income focus to a focus only on the balance sheet for firms receiving a GCO (Subramanyam & Wild, 1996; Barth et al., 1998; Blay et al., 2011).

We also rerun the regression analysis with model specification (1) separately on a sub-sample of financially distressed firms. Results in the first column of Panel B in Table 5 show that among financially distressed firms, those receiving GCOs have lower market value and lower earnings pricing multiples than firms without GCOs. The market value of financially distressed firms receiving GCOs is lower than that of other financially distressed firms by \$817.3 million. The pricing multiples of their earnings are also below those of distressed firms without GCOs. In fact, the pricing multiples of earnings for distressed firms receiving GCOs (sum of coefficients of *NI* and  $GC \cdot NI = 0.988 - 1.335 = -0.347$ ) are not significantly different from zero (not tabulated). This

provides evidence supporting that GCOs have an impact on the market valuation of financially distressed firms. Accordingly, GCO is not just a proxy for the financial distress level of a firm. Rather, it has an incremental impact on the market's valuation of a distressed firm, and it increases the relative importance of book value of equity to earnings in this valuation. Also, consistent with prior studies, the valuation of financially distressed firms depends mainly on the book value (Blay et al., 2011). The coefficient of *BVE* is 0.777 (significant at 1% level), whereas that of earnings is not significantly different from zero.

This table compares the impact of expected going concern versus unexpected going-concern opinion on firms' market valuation. We use the Zmijewski (1984) score to classify whether GCOs are expected or unexpected by the market. We first report the results from our baseline model (Model 1). To test our hypotheses, we run the analysis on a subsample excluding firms with unexpected going-concern opinions (Model 2). This analysis allows us to investigate whether the expected going concern opinion has any impact on the market value. We then run a similar analysis on a subsample excluding firms with expected going concern opinions (Model 3). Lastly, we run the analysis on the full sample to compare whether there is any difference in the impact of expected going concern opinion versus unexpected going concern opinion (Model 4). We also repeat the analyses on a set of distressed firms only in Panel B. Distressed firms are defined as those with negative working capital, negative net income, or negative cash flows from operation. The dependent variable is the market value of equity (*MVE*), computed as the firm's stock price on the day of earnings announcement multiplied by the number of shares outstanding. *BVE* is the book value of equity at the end of the fiscal year. *NI* is net income for the year. *GC* is a dummy variable that takes on a value of 1 if the firm receives a going concern opinion in the year. *ExpGC* is a dummy variable that takes on a value of 1 when the firm receives a going concern opinion, and it is expected to receive a going concern opinion. Following Carcello and Neal (2000), we classify a firm as expected to receive going concern opinion when the probability

3 We compute standard errors that are robust to time series and cross-sectional correlation among observations.

**Table 5.** Comparison of expected vs. unexpected GCOs firms – using Zmijewski score as a proxy**Panel A. All Firms**

Variables	Pred. signs	Test of hypotheses			
		Model 1 Full sample GC	Model 2 Exclude unexpected GC	Model 3 Exclude expected GC	Model 4 Expected vs. unexpected
		Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
<i>BVE</i>	+	1.212*** (0.272)	1.250*** (0.279)	1.251*** (0.279)	1.250*** (0.279)
<i>NI</i>	+	2.991** (1.178)	3.062** (1.239)	3.061** (1.238)	3.061** (1.238)
<i>GC</i>	–	–778.6*** (207.6)	–	–	–
<i>GC · BVE</i>	–	–0.338 (0.434)	–	–	–
<i>GC · NI</i>	–	–3.287*** (1.271)	–	–	–
<i>ExpGC</i>	–	–	–1,106*** (262.6)	–	–1,092*** (254.2)
<i>ExpGC · BVE</i>	–	–	–1.094*** (0.376)	–	–1.086*** (0.370)
<i>ExpGC · NI</i>	–	–	–3.906*** (1.031)	–	–3.891*** (1.033)
<i>UnexpGC</i>	–	–	–	–980.7*** (253.4)	–971.6*** (246.1)
<i>UnexpGC · BVE</i>	–	–	–	0.656 (0.698)	0.648 (0.696)
<i>UnexpGC · NI</i>	–	–	–	–3.246*** (1.246)	–3.235*** (1.243)
Intercept		829.9*** (208.3)	877.2*** (255.6)	843.4*** (260.2)	843.3*** (248.6)
<i>N</i>		30,311	29,593	29,700	30,311
Adjusted <i>R</i> <sup>2</sup>		0.429	0.440	0.439	0.440
Statistical tests					<i>F</i> -statistic
1. $ExpGC = UnexpGC$					1.47
2. $ExpGC \cdot BVE = UnexpGC \cdot BVE$					4.62**
3. $ExpGC \cdot NI = UnexpGC \cdot NI$					3.63*
4. Chow tests for expected vs. unexpected GC firms					4.11***
5. $BVE/NI = (BVE + ExpGC \cdot BVE)/(NI + ExpGC \cdot NI)$			1.89	–	2.03
6. $BVE/NI = (BVE + UnexpGC \cdot BVE)/(NI + UnexpGC \cdot NI)$			–	0.26	0.25
7. $(BVE + ExpGC \cdot BVE)/(NI + ExpGC \cdot NI) = (BVE + UnexpGC \cdot BVE)/(NI + UnexpGC \cdot NI)$					0.22

Note: \*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels, respectively.

**Table 5 (cont.).** Comparison of expected vs. unexpected GCOs firms – using Zmijewski score as a proxy  
**Panel B.** Financially distressed firms

Variables	Pred. signs	Test of hypotheses			
		Model 1 Full sample GC	Model 2 Exclude unexpected GC	Model 3 Exclude expected GC	Model 4 Expected vs. unexpected
		Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
<i>BVE</i>	+	0.777*** (0.224)	0.746*** (0.229)	0.746*** (0.229)	0.746*** (0.229)
<i>NI</i>	+	0.988 (0.646)	0.925 (0.604)	0.925 (0.604)	0.926 (0.604)
<i>GC</i>	–	–817.3*** (160.5)	–	–	–
<i>GC*BVE</i>	–	–0.348 (0.225)	–	–	–
<i>GC*NI</i>	–	–1.335** (0.665)	–	–	–
<i>ExpGC</i>	–	–	–707.8*** (152.4)	– (152.1)	–707.8***
<i>ExpGC · BVE</i>	–	–	–0.415 (0.253)	– (0.250)	–0.418*
<i>ExpGC · NI</i>	–	–	–1.170** (0.573)	– (0.571)	–1.175**
<i>UnexpGC</i>	–	–	– (144.9)	–672.7*** (246.1)	–971.6***
<i>UnexpGC · BVE</i>	–	–	– (0.270)	–0.292 (0.696)	0.648
<i>UnexpGC · NI</i>	–	–	– (0.608)	–1.132* (1.243)	–3.235***
Intercept		856.2*** (162.5)	232.5 (69.14)	255.4*** (72.38)	287.4***
<i>N</i>		15,367	14,706	14,756	15,367
Adjusted <i>R</i> <sup>2</sup>		0.325	0.354	0.354	0.354
Statistical tests					<i>F</i> -statistic
1. <i>ExpGC = UnexpGC</i>					0.69
2. <i>ExpGC · BVE = UnexpGC · BVE</i>					0.10
3. <i>ExpGC · NI = UnexpGC · NI</i>					0.04
4. Chow tests for expected vs. unexpected GC firms					0.27
5. $BVE/NI = (BVE + ExpGC \cdot BVE)/(NI + ExpGC \cdot NI)$			2.44	–	2.69
6. $BVE/NI = (BVE + UnexpGC \cdot BVE)/(NI + UnexpGC \cdot NI)$			–	0.83	0.88
7. $(BVE + ExpGC \cdot BVE)/(NI + ExpGC \cdot NI) = (BVE + UnexpGC \cdot BVE)/(NI + UnexpGC \cdot NI)$					0.07

Note: \*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels, respectively.

of failure (based on the Zmijewski (1984) financial distress prediction model) exceeds 28%. *UnexpGC* takes on a value of 1 when the firm receives a going concern report, and this going concern report is unexpected. *ExpGC · BVE*, *ExpGC · NI*, *UnexpGC · BVE*, and *UnexpGC · NI* represent the interaction terms. We adjust all standard errors for cross-sectional and serial correlation using the two-way clustering method proposed by Petersen (2009).

## 4.2. Test of hypotheses

### 4.2.1. Expected versus unexpected GCOs comparison using Zmijewski score as a proxy

In columns 2 to 4 of Panel A in Table 5, we perform the analysis to examine whether there is any differential valuation implication of expected versus unexpected GCOs. Our analyses are as follows. First, we run our regression with model specification (2) on a subsample of firm-years excluding observations with unexpected GCOs (see Panel A, Table 5, column 2). This subsample includes only firm-years with either clean opinions or expected GCOs. This analysis explores whether the expected GCO has any impact on the market's valuation. According to previous research, we classify firms with a probability of failure greater than 0.28 (based on Zmijewski financial condition score) as having a higher chance of receiving GCOs (Carcello & Neal, 2000; Davis & Ashton, 2002). This process results in 611 expected GCOs vs. 718 unexpected GCOs from our total sample of 1,329 GCOs<sup>4</sup>. A comparison of firms with expected GCOs with those having clean opinions suggests that these expected GCOs firms have lower market value on average (coefficient of the dummy variable, *ExpGC*, has a coefficient of -1.106). Also, the pricing multiples of both the book value of equity and earnings are significantly lower for firms with expected GCOs than those without GCOs.

Next, we repeat the analysis on a subsample excluding firms with expected GCOs by running a regression with model specification (3). This subsample consists of firms either without GCOs or those with unexpected GCOs. Analysis of this subsample

informs us whether unexpected GCOs have any impact on a firm's market valuation (see column 3 of Panel A in Table 5). The results are similar to those of expected GCOs with the exception that there is no significant difference between the pricing multiple of the book value of equity for firms with unexpected GCOs versus those without GCOs (*UnexpGC · BVE* = 0.656).

The above two tests suggest that both expected and unexpected GCOs affect a firm's market value and pricing multiples. In column 4 of Panel A in Table 5, we compare the valuation impact of expected versus unexpected GCOs by running a regression with model specification (4). We do not observe any significant difference between the average market value of the two groups as captured by the difference between the two dummy variables *ExpGC* and *UnexpGC*. *F*-statistic for a test on the difference between the coefficients of the two variables is 1.47, insignificant at the traditional level of 10%. Results further suggest that the drop in the pricing multiples of both the book value of equity and earnings for expected GCOs firms is significantly larger than that of the unexpected GCOs firms (*F*-statistic for a test on the difference in coefficients of the book value of equity between the two groups = 4.62; *F*-statistic for that of earnings = 3.63). The Chow test statistic (*p*-value < 0.0001) shows a significant difference between the two groups. However, when we compare the weight placed on book value of equity relative to that of earnings, we do not observe any significant difference between firms without GCOs and either the expected or the unexpected GCOs groups. There is also no significant difference in this relative weight placed on book value and earnings between the expected and unexpected going concern groups. The more significant drop in the weight placed on both book value and earnings of the expected GCOs group suggests that expected GCOs have a bigger impact on firm valuation than unexpected ones, which contradicts results documented in studies using the event study method. One potential explanation is that our proxy for expected GCOs is based on the financial distress level of the firm. Firms with worse financial conditions are more likely to be classified as expected GCOs firms rather than unexpected GCOs firms. Hence, the market valuation of expected GCOs can be

4 Alternatively, as a sensitivity analysis we use Altman's score to split the sample into expected and unexpected GCOs, resulting in 428 and 901 observations, respectively. Results are similar to those using the Zmijewski financial condition score.

capturing this difference in the distress level rather than the difference in the market's expectation.

In Panel B of Table 5, we repeat the analyses on a subgroup of distressed firms only. Results are similar to those of the full sample presented in Panel A. The major difference between the results in Panels A and B of Table 5 is that there is no longer a significant difference between expected and unexpected GCOs. This suggests that our measure of expected GCOs captures mainly the effect of financial distress. The change in market value and pricing multiples of book value and earnings are similar between expected and unexpected GCOs.

#### 4.2.2. Expected versus unexpected GCOs comparison using first-time GCOs as a proxy

To separate the effect of expected GCOs from that of financial distress, we repeat the above analyses using a firm's audit opinion in the prior year as a proxy for the market's expectation regarding its audit report. Carcello et al. (2000), Mutchler (1985) and Nogler (1995) suggest that the chance of a firm receiving a GCO in the current year increases if it receives one in the prior year. We classify expected GCOs if the firms already received GCOs in the previous year. Otherwise, firms are classified as unexpected GCOs. Of the full sample, 901 firms received first-time GCOs (i.e., 901 expected GCOs vs. 428 unexpected GCOs). Results using this proxy are reported in Table 6.

This table compares the impact of expected GCOs versus unexpected GCOs on firms' market valuation. The only difference between this table and Table 6 is the use of a different proxy for expected GCOs. In this table, we classify GCOs as unexpected if the firms did not receive GCOs in the prior year. We first run the analysis on a subsample excluding firms with unexpected GCOs. This analysis allows us to investigate whether the expected going concern opinion has any impact on the market value. Similarly, we run the analysis on a subsample excluding firms with an expected going concern opinion. Lastly, we run the analysis on the full sample to compare whether there is any difference in the impact of expected going concern opinion versus unexpected going-concern opinion. We also repeat the analysis on a set of distressed firms only in Panel B. Distressed firms are

defined as those with negative working capital, negative net income, or negative cash flows from operation. The dependent variable is the market value of equity (*MVE*), computed as the firm's stock price on the day of earnings announcement multiplied by the number of shares outstanding. *BVE* is the book value of equity at the end of the fiscal year. *NI* is net income for the year. *GC* is a dummy variable that takes on a value of 1 if the firm receives a going concern opinion in the year. *ExpGC* is a dummy variable that takes on a value of 1 when the firm receives a going concern opinion in both the current and prior year. *UnexpGC* takes on a value of 1 when the firm receives a going concern report in the current year but did not receive such a report in the prior year. We adjust all standard errors for cross-sectional and serial correlation using the two-way clustering method proposed by Petersen (2009).

When the expected GCOs proxy is no longer based solely on a firm's distress level, the unexpected GCOs firms tend to have a larger drop in both the average market value ( $UnexpGC = -1.089$  in Column 2 of Panel A in Table 6) and the pricing multiple of earnings ( $UnexpGC \cdot NI = -3.885$ ) than expected GCOs firms ( $ExpGC = -865.9$ ;  $ExpGC \cdot NI = -3.551$  in Column 1 of Panel A in Table 6). This contrasts with the results reported in Table 5. Also, whereas the pricing multiple of book value drops for unexpected GCOs firms ( $UnexpGC \cdot BVE = -0.731$ ), that of expected GCOs firms actually increases ( $ExpGC \cdot BVE = 1.306$ ). Again, in column 3, we pooled together the expected and unexpected GCOs groups. The Chow test suggests that there is a significant difference between the two groups ( $F$ -statistic = 4.98,  $p$ -value < 0.001). The significant Chow test is driven mainly by the difference in the multiples of the book value of equity between the two groups ( $F$ -statistic = 11.94,  $p$ -value < 0.001). Furthermore, there is a significant increase in the weight placed on the book value of equity ( $BVE/NI$ ) relative to that of earnings for the unexpected GCO firms compared to non-GCO firms:

$$\frac{BVE + UnexpGC \cdot BE}{NI + UnexpGC \cdot NI},$$

$$F\text{-statistic} = 11.05, p\text{-value} < 0.001.$$

The change in the book value to earnings ratio for expected GCOs firms is insignificant. We also repeat the analyses on a subsample of financially distressed

**Table 6.** Comparison of expected vs. unexpected GCOs firms – using first-time GCOs as a proxy**Panel A.** All firms

Variables	Pred. signs	Test of hypotheses		
		Model 2 Exclude unexpected GC	Model 3 Exclude expected GC	Model 4 Expected vs. unexpected
		Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
<i>BVE</i>	+	1.251*** (0.279)	1.250*** (0.279)	1.250*** (0.279)
<i>NI</i>	+	3.061** (1.239)	3.062** (1.238)	3.061** (1.238)
<i>ExpGC</i>	–	–865.9*** (274.0)	–	–859.0*** (263.9)
<i>ExpGC · BVE</i>	–	1.306* (0.682)	–	1.285* (0.671)
<i>ExpGC · NI</i>	–	–3.551* (1.906)	–	–3.553* (1.895)
<i>UnexpGC</i>	–	–	–1,089*** (272.5)	–1,083*** (268.8)
<i>UnexpGC · BVE</i>	–	–	–0.731* (0.389)	–0.727* (0.387)
<i>UnexpGC · NI</i>	–	–	–3.885*** (1.282)	–3.876*** (1.281)
Intercept	–	879.0*** (267.5)	881.0*** (239.9)	881.5*** (239.9)
<i>N</i>		29,410	29,883	30,311
Adjusted <i>R</i> <sup>2</sup>		0.439	0.440	0.440
Statistical tests				<i>F</i> -statistic
1. $ExpGC = UnexpGC$				0.82
2. $ExpGC \cdot BVE = UnexpGC \cdot BVE$				11.94***
3. $ExpGC \cdot NI = UnexpGC \cdot NI$				0.07
4. Chow tests for expected vs. unexpected GC firms				4.98***
5. $BVE/NI = (BVE + ExpGC \cdot BVE)/(NI + ExpGC \cdot NI)$		0.18	–	0.19
6. $BVE/NI = (BVE + UnexpGC \cdot BVE)/(NI + UnexpGC \cdot NI)$		–	10.35***	11.05***
7. $(BVE + ExpGC \cdot BVE)/(NI + ExpGC \cdot NI) = (BVE + UnexpGC \cdot BVE)/(NI + UnexpGC \cdot NI)$				0.13

Note: \*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels, respectively.

**Table 6 (cont.).** Comparison of expected vs. unexpected GCOs firms – using first-time GCOs as a proxy**Panel B. Financially distressed firms**

Variables	Pred. signs	Test of hypotheses		
		Model 2 Exclude unexpected GC	Model 3 Exclude expected GC	Model 4 Expected vs. unexpected
		Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
<i>BVE</i>	+	0.746*** (0.229)	0.746*** (0.229)	0.746*** (0.229)
<i>NI</i>	+	0.926 (0.604)	0.925 (0.604)	0.926 (0.604)
<i>ExpGC</i>	–	–614.3*** (139.3)	–	–622.3*** (138.7)
<i>ExpGC · BVE</i>	–	0.00546 (0.644)	–	0.0176 (0.601)
<i>ExpGC · NI</i>	–	–1.795 (1.221)	–	–1.786 (1.220)
<i>UnexpGC</i>	–	–	–725.9*** (156.7)	–726.7*** (156.2)
<i>UnexpGC · BVE</i>	–	–	–0.404** (0.194)	–0.404** (0.194)
<i>UnexpGC · NI</i>	–	–	–1.152* (0.623)	–1.154* (0.623)
Intercept	–	188.9	307.3*** (70.22)	307.8*** (70.50)
<i>N</i>		14,497	14,965	15,367
Adjusted <i>R</i> <sup>2</sup>		0.353	0.354	0.354
Statistical tests				<i>F</i> -statistic
1. <i>ExpGC</i> = <i>UnexpGC</i>				1.67
2. <i>ExpGC · BVE</i> = <i>UnexpGC · BVE</i>				0.37
3. <i>ExpGC · NI</i> = <i>UnexpGC · NI</i>				0.29
4. Chow tests for expected vs. unexpected GC firms				1.21
5. $BVE/NI = (BVE + ExpGC \cdot BVE)/(NI + ExpGC \cdot NI)$		0.76	–	0.79
6. $BVE/NI = (BVE + UnexpGC \cdot BVE)/(NI + UnexpGC \cdot NI)$		–	4.91**	5.13**
7. $(BVE + ExpGC \cdot BVE)/(NI + ExpGC \cdot NI) = (BVE + UnexpGC \cdot BVE)/(NI + UnexpGC \cdot NI)$				0.09

Note: \*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels, respectively.

firms, and the results are reported in Panel B of Table 6. The results are consistent with those reported in Panel A of Table 6 except that the difference in the pricing multiple of book value is no longer significant between the expected and unexpected GCOs firms. However, there is still a significant increase in the weight placed on the book value of equity ( $BVE/NI$ ) relative to that of earnings for the unexpected GCOs firms compared to non-GCO firms:

$$\frac{BVE + UnexpGC \cdot BE}{NI + UnexpGC \cdot NI},$$

$$F\text{-statistic} = 5.13, p\text{-value} < 0.05.$$

We have also repeated the above expected versus unexpected GCOs analyses after including a proxy for a firm's financial distress condition – Zmijewski probability of bankruptcy and the tenor of the results does not change. Hence, we do not repeat the results here.

Overall, our results suggest that while both firms receiving expected and unexpected GCOs suffer a drop in their average market value, the decrease is larger in the case of firms with unexpected GCOs for both the full sample and the subsample of financially distressed firms. These empirical findings provide support for Hypothesis 1. Also, there is a shift in the value relevance from earnings to book value of equity in the unexpected GCOs firms, which provides support for Hypothesis 2.

#### 4.2.3. Sensitivity analyses

We also rerun the analyses using the fixed industry and fixed year model specification, and all our results are qualitatively the same as those reported above and are not repeated here.

To test whether our results are robust to the various proxies used in our analyses, we use the abnormal earnings, instead of the net income level, in our analyses. We adopt the model specification provided in Barth et al. (1999):

$$NI_{it}^a = \omega_{10} + \omega_{11}NI_{it-1}^a + \omega_{12}BVE_{it-1} + \varepsilon_{1it},$$

$$BVE_{it} = \omega_{20} + \omega_{22}BVE_{it-1} + \varepsilon_{2it},$$

$$MVE_{it} = i_0 + i_1BVE_{it} + \alpha_1NI_{it-1}^a + \alpha_2GC_{it} + \alpha_3GC \cdot BVE_{it} + \alpha_4GC_{it} \cdot NI_{it-1}^a + u_{it}.$$

We estimate the set of equations as a system using seemingly unrelated regressions as in Barth et al. (1999). We compute the abnormal earnings as  $NI_{it}^a = NI_{it} - rBVE_{it-1}$ . We perform the analyses by setting the long-term return on equities,  $r$ , to 12%. We have also repeated the analyses by setting  $r = 3\%$ ,  $5\%$ ,  $9\%$ , and  $15\%$ . Results are qualitatively the same as those of  $r = 12\%$ . We observe that the tenor of the results is the same as those presented in Table 5 (non-tabulated). Hence, our results are robust to the various earnings numbers we use.

We have also performed the analyses using other proxies for financial distress condition, such as Altman's probability of bankruptcy and the results are similar to those reported in Table 5, and we do not repeat them here. We have also used various cutoff points (0.35, 0.5, 0.6, 0.7, 0.8, 0.9) of Zmijewski score to define expected going concern opinion and the results are similar to those reported. The only change is that the coefficient of  $ExpGC \cdot BVE$  becomes insignificant when the cutoff point is greater than 0.6.

Amir and Lev (1996) suggest that unreported intangibles cause the financial statements to be less informative of a firm's market value. Collins et al. (1997) document that intangible intensive firms have slightly higher incremental  $R^2$  from book values and slightly lower incremental  $R^2$  from earnings than non-intensive firms. We include a dummy variable that takes on a value of 1 if the firm is in an intangible-intensive industry, as defined by Collins et al. (1997). Collins et al. (1997) define firms as intangible-intensive when their production functions contain large amounts of unrecorded intangibles. An analysis including the intangible-intensive dummy variable and its interaction terms with our contextual variables suggest that there is no significant difference between intangible-intensive firms and non-intensive ones in firm valuation (not tabulated). None of the dummy variable or its interaction terms are significant at the 5% level.

Finally, to control for the role played by regulatory changes, we partitioned the sample into pre-vs. post-Sarbanes Oxley (SOX) Act of 2002. We find no evidence that the passage of the SOX drives our results.

## CONCLUSION

This paper investigates the valuation implication of expected vs. unexpected GCOs. We use the model proposed by the value relevance literature to evaluate whether a firm's market value varies with the type of GCOs. Also, we test whether the pricing multiples of the book value of equity and earnings change with the issuance of expected vs. unexpected GCOs. Our results suggest that firms receiving unexpected GCOs tend to have lower market value compared to firms with expected GCOs. Further, we also observe that the market tends to shift the weight placed on earnings to the book value of equity in valuing firms with unexpected GCOs. Specifically, the decrease in the pricing multiple of earnings is larger for the case of unexpected GCO firms.

Our study is subject to some limitations. One caveat of our study is that the sample is restricted to the 2000–2006 time period. Therefore, our results refer to the valuation effects of GCOs before the financial crisis. Another limitation is that neither a firm's financial distress nor the market's expectation of GCOs are observable variables. Although we tried to overcome any potential shortcomings of a single proxy by using multiple measures, these measures capture the distress level and the market's expectation with noise. Future studies can improve the power of the tests by proposing and using measures that more closely resemble the two contextual variables. In addition, our study is based on U.S. data. Auditors in the U.S. face much higher litigation risk than auditors in other countries. The concern for litigation risk can motivate auditors in the U.S. to be more conservative and are more likely to issue going concern opinions than auditors in other countries. The impact of this difference in auditors' incentives can have an impact on the valuation effect of GCOs. We plan on investigating this issue in a separate paper.

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