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Article

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Determinants of going-concern audit opinions: evidence from Vietnam stock exchange-listed companies

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Abstract: In this study, we aim to examine the effect of company and auditor characteristics on the issuance of going-concern opinions. The study population encompasses all financially distressed manufacturing companies listed on the Vietnam Stock Exchange during 2010–2019. The results indicate that the financial condition, incurring loss, audit report delay, and frequency of the board of director meetings significantly influence the issuance of auditors' going-concern opinions. Company size, auditor size, and other financial ratios such as return on asset, leverage, and liquidity have no significant impact on the going-concern audit opinions. This study contributes to the limited research on going-concern audit opinions in the context of Vietnam. The results also provide a basis for recommendations to both auditors and audit clients on the determinants of going-concern audit opinions.

Subjects: Finance; Corporate Finance; Business, Management and Accounting; Accounting; Auditing; Financial Accounting; Financial Management; Financial Statement Analysis; Risk Management

Keywords: going-concern audit opinion; financial condition; Z-score; audit report; Vietnam

1. Introduction

The fundamental assumption in the preparation of financial statements is that a reported entity is considered a going-concern. This implies that the entity can maintain its viability for at least the

ABOUT THE AUTHOR

Duc Hieu Pham is an associate professor, Dean of Accounting and Auditing Faculty, Thuongmai University (TMU), Hanoi, Vietnam. His major research focuses on accounting, auditing, especially corporate social responsibility, corporate governance, earnings management, human resource accounting, firm performance, and internal control.

PUBLIC INTEREST STATEMENT

The study identifies some factors of going-concern audit opinions on the basis of available literature and employs a logistic regression model to evaluate the contributing factors. The study population encompasses all financially distressed manufacturing companies listed on the Vietnam Stock Exchange during 2010–2019. The results indicate that the financial condition, incurring loss, audit report delay, and frequency of the board of director meetings significantly influence the issuance of auditors' going-concern opinions. The study contributes to the limited research on going-concern audit opinions in the context of Vietnam. The results also provide a basis for recommendations to both auditors and audit clients on the determinants of going-concern audit opinions.

next 12 months and allows for financial statements to be prepared using valuations other than liquidation value. According to the Generally Accepted Accounting Principles, going- concern is an assumption that requires the economic entity to have operational and financial abilities in maintaining their business continuity (Messier et al., 2017; Simamora & Hendarjatno, 2019). Therefore, if a business is a going-concern, the risk that it will enter liquidation in the foreseeable future is negligible (Messier et al., 2017). In an ongoing process, auditors are urged to evaluate whether there is substantial doubt about an entity's ability to continue as a going-concern for a reasonable period of time (Messier et al., 2017). If the entity faces a considerable risk of not being in business in the following accounting period, an auditor should issue a going-concern opinion, which is one of the most difficult and ambiguous tasks for an auditor (Carson et al., 2013; Gold et al., 2019). A going-concern audit opinion is issued by auditors when they are in doubt about the entity's ability to survive. In other words, an audited entity receiving a going-concern audit opinion indicates that the entity cannot sustain its business.

Auditors are sometimes reticent about expressing doubts regarding the continuity of a company (Gallizo & Saladrigues, 2016), which suggests that going-concern declarations can foster negative consequences, both for the auditor and the company under audit (Berglund et al., 2018; Gallizo & Saladrigues, 2016). On the one hand, issuing a going-concern opinion could bring the auditor's consideration into question, and on the other hand, it could accelerate the company's bankruptcy process (Gallizo & Saladrigues, 2016).

Previous studies have identified factors that are significantly associated with going-concern audit opinions, although they have yielded inconsistent results. For example, Gallizo and Saladrigues (2016) argue that, rather than financial decline, registering losses and being audited by a small-scale auditor increase the likelihood of a company receiving a going-concern audit opinion, whereas Geiger and Raghunandan (2002) highlight the company's financial condition as the main explanatory factor for this opinion. Bellovary et al. (2007) indicate profitability, indebtedness, and the company's liquidity as key factors in the advance detection of the inclusion of going-concern audit opinions, while Geiger et al. (2005) find that a delay in issuing the audit report is significantly associated with the likelihood of receiving such an opinion. Other factors such as auditor competence, firm size, auditor size, and corporate governance show mixed results (Gold et al., 2019).

The conflicting results in the literature encourage further research in this regard. Several scholars (Carson et al., 2013; Gold et al., 2019; Zdolsek et al., 2021, 2015) have suggested the need for further studies in different research contexts and/or adding independent variables that could theoretically affect the likelihood of receiving a going-concern audit opinion. To fill this gap, in this study, we examine determinants of going-concern audit opinions in the context of Vietnam. This interest is also motivated by the absence, to the best of our knowledge, of rigorous studies that examine going-concern audit opinion determinants in Vietnam.

The likelihood of receiving a going-concern opinion for firms operating in Vietnam using a combination of a firm's financial predictors remains unknown. Our fundamental motivation for conducting this study is the absence of a publicly available going-concern opinion model for Vietnamese firms. The examined factors are financial distress measured by Altman's Z-score, profitability, leverage, auditor size, and firm size. These variables are based on integrating several variables, such as audit delay and frequency of board of director (BOD) meetings, that have not been examined previously in the Vietnamese context (Achyarsyah, 2016; Lai et al., 2020; Omer et al., 2020). The results obtained are meaningful for both the auditing profession and companies because they provide evidence of the reasons that converge in cases where a going-concern audit opinion is included in the auditing reports of companies in financial distress.

We developed three models to examine whether auditors can use Altman's Z-score as a substitute for many financial ratios when identifying clients that are likely to receive a going-concern opinion or to screen potential audit clients for pre-engagements and to achieve an acceptable audit risk level. As stated previously, the motivation for this study is the absence of a publicly available going-concern audit opinion model for Vietnamese firms. In our opinion, public availability of an audit model that is simple to use would further increase interest in going-concern opinions (Zdolsek et al., 2021). Additionally, such a model would establish a much-needed benchmark for the Vietnamese audience. Therefore, we aim to construct a statistical logistic model that can be used to predict a going-concern opinion in auditors' reports for Vietnamese firms listed on the Vietnam Stock Exchange. Furthermore, after completion of their audits, auditors will be able to apply the developed model as a monitoring tool to review their work (Zdolsek et al., 2021).

The remainder of this paper is organized as follows. Section 2 describes and explains the literature review and hypotheses development. Section 3 presents the methodology of the study, study sample, operational definition of the study variables, and study models. Section 4 reports the empirical results, and finally, Section 5 presents the conclusions and recommendations.

2. Literature review and hypotheses development

2.1. Financial condition and going-concern audit opinion

The financial condition of a company describes its financial health. A company's financial statements can be used to assess whether it is in financial deficit or surplus. Ross et al. (2019) reveal that if a company is facing difficulties, it can be an indicator of bankruptcy and is reflected in its operating cash flow being insufficient to meet all its current liabilities. Financial difficulties arise when the company has negative cash flow and poor financial ratios and cannot repay its debts (Beaver, 1966; Platt & Platt, 2002). Financial difficulties eventually lead to bankruptcy, which renders the going-concern status of the company questionable. Mutchler (1985) states that the worse the financial condition of a company, the more likely it will receive a going-concern audit opinion. By contrast, companies that have never experienced financial difficulties have never received a going-concern audit opinion. In other words, if a company's financial condition is sound, then the probability of it continuing its activities is high. Therefore, auditors only issue opinions about going-concern if the company under audit is in poor financial condition and finds sustaining itself difficult. One method to measure the financial condition of a company is by using the Altman model (Gallizo & Saladrigues, 2016).

Rahma and Sukirman (2018), Ryu and Roh (2007), and Mutchler et al. (1997) illustrate that firms' financial condition measured by Altman's Z-score is significantly associated with the receipt of a going-concern audit opinion. However, other studies (Gallizo & Saladrigues, 2016; Mazaba et al., 2013) reveal that a company's financial condition does not affect the receipt of a going-concern audit opinion. Therefore, we formulate the first hypothesis as follows:

H1: A firm's financial condition distress measured by Altman's Z-score is associated with the likelihood of receiving a going-concern audit opinion.

2.2. Audit report delay, BOD meetings, and going-concern audit opinions

Audit report delay is the length of the audit completion period measured from the closing date of the financial year to the date of audit report issuance. Audit report delay is also called audit lag.

A longer audit lag signals problems with the auditee, which may lead to the issuance of a going-concern audit opinion. Auditors often issue going-concern opinions when audit reports are late (Geiger et al., 2005). The auditor may aim to delay the issuance of audit reports so the company can solve its financial problems and avoid going-concern opinions. The issuance of a non-clean

report is decided after intense meetings between the company management and the auditor, and a delay in issuing the report increases the probability of the report including a going-concern audit opinion (Gallizo & Saladrigues, 2016; Geiger et al., 2005). Further, the auditor conducts increasingly intense tests if they detect possible continuity problems, which increases the delay in issuing the report (Geiger et al., 2005). Mutchler et al. (1997) and Geiger et al. (2005) show that audit report delays affect the going-concern audit opinions. However, Gallizo and Saladrigues (2016) demonstrate that the length of the audit report lag does not affect the provision of a going-concern opinion. From the discussion above, we postulate the following hypothesis:

H2: Audit report delay is positively associated with the likelihood of receiving a going-concern audit opinion.

Only a few studies have been conducted on the association between the number of BOD meetings and modified audit opinions in which a going-concern audit opinion is included, and they provide mixed and inconclusive results (Omer et al., 2020). Farinha and Viana (2009) find that the frequency of BOD meetings increases the financial reporting quality and thus reduces the likelihood of receiving a modified audit opinion. However, Firth et al. (2007) find that the relationship between board diligence (proxy by the BOD meetings) and the issuance of a modified audit opinion is not statistically significant. Omer et al. (2020) document a statistically significant relationship and positive association between BOD meetings and a modified audit opinion. Their results show that frequent BOD meetings did not help reduce the likelihood of receiving a modified audit opinion for listed companies in Malaysia. According to the authors, the increase in BOD meetings can be interpreted as an indication that the company is holding additional meetings and spending more time dealing with problems and discussing strategy and legal issues, but it does not necessarily mean that the company is spending more time discussing its financial issues and financial reporting quality. Thus, frequent BOD meetings are associated with an increase in the likelihood of receiving a modified audit opinion for Malaysian listed companies. Inspired by findings of Omer et al. (2020), in this study, we also hypothesize that there is a positive association between the frequency of BOD meetings and the likelihood of receiving a going-concern audit opinion.

H3: The number of BOD meetings during the year has a positive association with the likelihood of receiving a going-concern audit opinion.

2.3. Size of the auditing firm and going-concern audit opinion

The size of the auditing firm can be used as a proxy for audit quality. DeAngelo (1981) analyzes the theory associated with the relationship between audit quality and accounting firm size and argues that large auditors are more independent and, therefore, provide a higher audit quality. Craswell et al. (1995) contend that clients usually perceive a higher audit quality from large auditing firms because the auditors have characteristics such as being trained and having international recognition and the presence of peer review, which can be associated with quality.

Choi et al. (2010) claim that a Big 6 accounting firm is internationally renowned and provides a higher audit quality than do small firms with no reputation. This finding is consistent with the conclusions of Reynolds and Francis (2000), Francis and Yu (2009), and DeAngelo (1981) argues that large auditors are also more likely to reveal a firm's problems and then report going-concern issues related to their clients because they are more likely to face litigation risk. Berglund et al. (2018) document that Big 4 auditors are more likely than mid-tier auditors to issue going-concern opinions to distressed clients. However, Ryu and Roh (2007) find that non-Big 6 firms issue more going-concern opinions to non-bankrupt clients than do Big 6 firms. Mutchler et al. (1997) find no significant difference in going-concern opinion rates between Big 6 and non-Big 6 auditors. Based on the discussions above, we formulate the following hypothesis:

H4: Big 4 auditors are more likely than auditors from other firms to issue a going-concern audit opinion.

2.4. Leverage and going-concern audit opinion

Leverage refers to the use of debt for asset purchase, and is computed as the ratio of total liabilities to total assets. A high leverage ratio indicates that the company's financial condition is under stress, which may cause uncertainty about its ability to continue as a going-concern. Companies with assets that are worth less than their debt face the risk of bankruptcy (Bellovary et al., 2007). A high leverage ratio raises doubt about the company's ability to sustain its business because most of its assets are used to refinance debt, considerably reducing the amount of funds available for operation. The higher the leverage ratio of a company, the greater the auditors' concern about the company's sustainability.

Carcello and Neal (2000) find that leverage is significantly associated with the going-concern audit opinion. Feng and Li (2014) state that smaller companies with higher leverage are more likely to receive going-concern opinions. By contrast, Gallizo and Saladrigues (2016) indicate that leverage does not affect the going-concern audit opinion. Based on the above discussion, we posit the following hypothesis:

H5: Leverage is positively associated with the likelihood of receiving a going-concern audit opinion.

2.5. Profitability and going-concern audit opinion

Profitability is an accounting metric that evaluates the financial success of a company. Having poor profitability illustrates that the company experiences difficulties in generating profits or even incurs losses. If this condition persists, then the company is likely to experience difficulties in sustaining itself. Continuous company losses encourage the auditor to issue a going-concern audit opinion. By contrast, highly profitable firms are deemed capable of fulfilling their liability obligations and ensuring business continuity in the future. The higher the profit, the greater the investor confidence to continue investing in the company. Therefore, profitable companies are less likely to receive a going-concern audit opinion (Bellovary et al., 2007; Gallizo & Saladrigues, 2016). Based on the above description, the following hypotheses are formulated:

H6: Profitability is negatively associated with the likelihood of receiving a going-concern audit opinion.

H7: Incurring loss is positively associated with the likelihood of receiving a going-concern audit opinion.

2.6. Liquidity and going-concern audit opinion

Liquidity affects a company's ability to meet its short-term obligations (Subramanyam, 2014). A low liquidity level indicates a lower likelihood of the company fulfilling its short-term liabilities. The lower the company's ability to meet its short-term obligations, the greater the likelihood of receiving a going-concern audit opinion. The higher the liquidity of the company, the higher the likelihood of receiving an unqualified opinion (García Blandón & Argilés Bosch, 2013). Therefore, we postulate the following hypothesis:

H8: Liquidity is negatively associated with the likelihood of receiving a going-concern audit opinion.

2.7. Company size and going-concern audit opinion

The size of a company can be expressed in terms of total assets, sales, and market capitalization. The value of assets is relatively more stable than that of market capitalization and sales. Therefore, we use total assets as a proxy for the size of the company.

Mutchler (1985) argues that auditors issue a going-concern opinion for small companies more often because of their belief that large companies can better resolve their financial problems than can their small counterparts. Therefore, a large company may not receive a going-concern opinion. Mutchler (1985) and Mutchler et al. (1997) provide empirical evidence of a negative relationship between company size and going-concern opinion. The results of these studies illustrate that large firms have better ability to manage themselves and facilitate their growth, thus dissuading auditors to issue a going-concern audit opinion. However, Gallizo and Saladrigues (2016), Achyarsyah (2016), and Suroto and Kusuma (2017) find that firms' size does not affect the going-concern audit opinion. Based on the above description, the following hypothesis is formulated:

H9: A company's size is negatively associated with the likelihood of receiving a going-concern audit opinion.

3. Research methodology

In this study, we examine the effect of independent variables comprising financial condition, profitability, leverage, liquidity, audit delay, size of auditor, and company size on the likelihood of receiving a going-concern audit opinion, which is the dependent variable. The study population included manufacturing companies listed on the Vietnam Stock Exchange during the period 2010–2019. The manufacturing industry was chosen to avoid industry-specific effects, namely different industry risks among industries. The sample was determined by applying the purposive sampling method using (i) audited financial statements from 2010–2019 and (2) complete data on all required variables. Consistent with the literature, we focused on financially distressed companies because auditors typically do not issue going-concern opinions to healthy companies. Thus, our sample included only companies whose level of financial distress was high enough to prompt auditors to question the company's going-concern status. The level of financial distress was determined by the Z-score, a measure developed by Altman (1968):

$$ZSCR = 1.2 * WCAP/TA + 1.4 * RE/TA + 3.3 * EBIT/TA + 0.6 * MEQUITY/TL + 1.0 * SALE/TA$$

where ZSCR denotes the Z-score, WCAP is working capital, TA is total assets, RE is retained earnings, EBIT is earnings before interest and taxes, MEQUITY is the market value of equity, TL is total liabilities, and SALE represents total sales.

A higher Z-score indicates greater financial strength, whereas a lower Z-score indicates financial distress. Based on Altman's Z-score, companies were categorized into strong, moderate, or weak classifications as follows:

- Strong when the Z-score is > 2.99
- Moderate when the Z-score is between 1.81 and 2.99
- Weak when the Z-score is < 1.81

Thus, 2.99 is the cutoff point to distinguish between financially distressed and non-distressed firms. Only firms with Z-scores below 2.99 were included in our sample.

Based on the above-mentioned criteria, 268 observations from 2010 to 2019 were obtained as the research sample.

To examine the hypotheses, we used logistic regression because the dependent variable is a dummy variable. The specific form of the logit model is as follows:

$$Y = \alpha + \beta_1 ZSCR + \beta_2 ROA + \beta_3 LOSS + \beta_4 DR + \beta_5 ADELAY + \beta_6 CR + \beta_7 AUD + \beta_8 SIZE + \beta_9 MEETING + \omega$$

where α: intercept; $\beta_{1,\ 2,\ \ldots,\ 9}$: coefficients of independent variables; and ω: residual errors.

The details of research variables are presented in Table 1.

4. Results and discussions

4.1. Descriptive statistics

The descriptive statistics in Table 2 provide an overview of the variables examined in this study.

Table 2 shows that the minimum value of the Z-score (ZSCR) is −13.20, the maximum value is 2.96, and the average value is 0.492, with a standard deviation of 1.515. The description of profitability (ROA) shows that the minimum value is −2.59, while the maximum value is 0.18, and the average value is −0.106 with a standard deviation of 0.250. For the leverage variable (DR), the minimum value is 0.07, and the maximum value is 2.83; the average value is 0.6843, and the

Table 1. Research variables

No.	Variable	Measurement/ Indicator	Scale
1	Going-concern audit opinion (Y)	Measured using a dummy variable. If the company receives a going-concern audit opinion, then it takes a value of 1 and 0 otherwise.	Nominal
2	Corporate financial condition (ZSCR)	Measured using Altman's Z-score.	Ratio
3	Profitability (ROA)	Measured using the return on assets (ROA); ROA = Earnings before tax/Total assets.	Ratio
4	Loss (LOSS)	Measured using a dummy variable. If the company experiences negative net income, then it takes a value of 1 and 0 otherwise.	Nominal
5	Leverage (DR)	Measured using the debt ratio (DR); DR = Total liability/Total assets.	Ratio
6	Audit report delay (ADELAY)	Measured from the closing date of the financial year to the date of issuance of the audit report.	Interval
7	Liquidity (CR)	Measured using the current ratio (CR); CR = Current assets/ Current liabilities.	Ratio
8	Big 4 auditor (AUD)	Measured using a dummy variable. If the auditor is part of the Big 4, then it takes a value of 1 and 0 otherwise.	Nominal
9	Company size (SIZE)	Logarithm of total assets.	Interval
10	BOD meetings (MEETING)	Measured using the number of BOD meetings.	Interval

Source: *Author's compilation.*

Table 2. Descriptive statistics of variables

Variables	N	Range	Minimum	Maximum	Mean	SD
ZSCR	268	16.16	−13.20	2.96	.492	1.515
ROA	268	2.77	−2.59	.18	−.1063	.250
LOSS	268	1.00	.00	1.00	.7127	.453
DR	268	2.77	.07	2.83	.6843	.336
CR	268	18.16	.03	18.19	1.399	1.655
ADELAY	268	347.00	15.00	362.00	91.627	33.047
AUD	268	1.00	.00	1.00	.1231	.329
SIZE	268	7.02	9.33	16.36	12.732	1.243
MEETING	268	47.00	.00	47.00	8.430	7.063

Source: *Author's calculations.*

standard deviation is 0.336. For the liquidity variable (CR), the minimum value is 0.03, while the maximum value is 18.19 with an average value of 1.40 and a standard deviation of 1.66. For the audit delay variable (ADELAY), the minimum value is 15, while the maximum value is 362, the average value is 91.6, and the standard deviation is 33.05. For the dummy variables (LOSS and AUD), the average values are 0.7121 and 0.1231, respectively. The mean value of LOSS indicates that many companies in the sample are experiencing losses.

4.2. Hypotheses testing

Univariate tests for the variables being examined are presented in Table 3. The mean difference is statistically significant in most variables, with the exception of the size of auditor (AUD) and liquidity variables (CR). The main variable of interest, ZSCR, is highly significant at the 1% level, providing significant explanatory power for auditors' opinion decisions (Ryu & Roh, 2007).

The correlation analysis is provided in Table 4. Significant correlations, measured by Pearson correlation coefficients, are noted between several pairs of variables. These correlations suggest that multivariate analysis is necessary to examine the simultaneous effects of the variables. Therefore, several examinations, such as the correlation matrix analysis, variance inflation factor (VIF), and tolerance (1/VIF), were carried out to check for the possible existence of multicollinearity problems among the independent variables (Hair et al., 2006). However, in terms of the correlation matrix analysis, the degree of multicollinearity does not seem to present any serious problems in

Table 3. Univariate tests

Variable	Hypothesis	Unqualified Opinion		Going-concern Opinion		t value
		Mean	SD	Mean	SD	
ZSCR	U > G	1.0928	1.0064	.0922	1.6604	6.136***
CR	U > G	1.534	1.854	1.310	1.509	1.041
DR	U < G	.601	.233	.740	.380	−3.378***
ROA	U > G	−.061	.1144	−.1364	.306	2.441***
LOSS	U < G	.589	.494	.795	.405	−3.735***
MEETING	U < G	7.505	4.873	9.043	8.159	−1.754*
ADELAY	U < G	87.028	23.10	94.68	38.02	−1.866*
SIZE	U > G	12.543	1.296	12.86	1.193	−2.011**
AUD	U < G	.1028	.3051	.137	.345	−.824

Notes: *U and G represent unqualified and going-concern opinions, respectively. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.*

Source: *Author's calculations.*

Table 4. Pearson's correlation coefficient

	ZSCR	ROA	SIZE	DR	CR	ADELAY	MEETING
ZSCR	1						
ROA	.841***	1					
SIZE	.124**	.232***	1				
DR	−.538***	−.370***	.091	1			
CR	.271***	.086	−.066	−.434***	1		
ADELAY	−.137**	−.111*	.049	.061	−.011	1	
MEETING	.068	.063	.154**	.008	.004	−.052	1

Notes: ****, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.*

Source: *Author's calculations.*

the multivariate analysis with the exception of the high correlation between ZSCR and ROA (Hair et al., 2006; Judge et al., 1980).

As reported in Table 5, the values of VIFs and that of tolerance (1/VIF) for the study model do not exceed 10 and 0.10, respectively. This indicates that multicollinearity is not a problem for the model explanations in this study (Hair et al., 2006).

The correlations between ZSCR and other financial ratios are statistically significant, suggesting that the ZSCR can measure much of what other financial ratios measure. Given this correlation, we conducted three multiple regression analyses with and without the Z-score (Ryu & Roh, 2007).

The estimation results for three dichotomous logit models are reported in Table 6. In Model 1, all financial ratios are included except the Z-score. In Model 2, the Z-score is included, but all financial ratios are excluded. Model 3 comprises both the Z-score and the financial ratios. The underlying reason is to examine whether auditors can use the Z-score as a key variable to identify audit clients that are likely to receive a going-concern opinion or to screen potential audit clients.

The chi-squared statistics indicate that all three models are significant at the 1% level. The percentage of firms correctly classified is around 70% in all three models. In addition, the values of Nagelkerke R square are between 18.6% and 31.5%, which are comparable to those

Table 5. Variance inflation factor and tolerance values

	Collinearity Statistics	
Variable	**Variance Inflation Factor (VIF)**	**Tolerance Value (1/VIF)**
ZSCR	4.53	0.220572
ROA	3.88	0.257726
SIZE	1.13	0.883609
DR	1.66	0.602313
CR	1.30	0.768529
ADELAY	1.03	0.972509
MEETING	1.03	0.969646
Mean VIF	2.08	

Source: *Author's calculations.*

Table 6. Estimation results of logistic regressions

Variable	Expected Sign	Model 1	Model 2	Model 3
AUD	+	.218	.339	.467
MEETING	+	.043**	.048**	.058**
SIZE	−	.239*	.263**	.203
ADELAY	+	.010*	.009*	.009*
ROA	−	−1.278		3.092**
DR	+	1.343**		.647
CR	−	.081		.218**
LOSS	+	1.019***		.694**
ZSCR	−		−.0974***	−1.153***
CONSTANT		−5.745***	−3.532**	−3.761**
Percentage corrects		68.7%	69.8%	69.8%
Nagelkerke R square		18.6%	27.4%	31.5%
Chi-square		39.635***	60.685***	71.111***
−2LL		320.937	299.886	289.46

Notes: ****, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.*

Source: *Author's calculations.*

in previous studies (Achyarsyah, 2016; Ryu & Roh, 2007; Simamora & Hendarjatno, 2019; Zdolsek et al., 2021).

Consistent with our hypotheses, in all three models, ADELAY and MEETING have positive coefficients and are statistically significant at the 10% and 5% levels, respectively. Therefore, H2 and H3 are supported. However, the test results show that the size of the auditor (AUD) does not influence a going-concern audit opinion because the significance level is greater than 10%. Consequently, H4 is rejected. This finding is consistent with that of Mutchler et al. (1997) but contradicts those of Reynolds and Francis (2000) and Francis and Yu (2009). The test results also indicate different effects of DR, ROA, and CR in Models 1 and 3 on going-concern audit opinions at different significance levels. Therefore, H5, H6, and H8 are rejected.

We did not find a negative relationship between firms' size and going-concern audit opinion; hence, H9 is rejected. Consistent with our hypotheses, in Models 1 and 3, incurring LOSS has a positive effect and is statistically significant at the 1% and 5% levels, respectively, on the going-concern audit opinion. Therefore, H7 is supported. This finding is in line with the conclusions of Ryu and Roh (2007), Gallizo and Saladrigues (2016), Zdolsek et al. (2015), and Zdolsek et al. (2021). The Z-score is also highly significant at the 1% level in both Models 2 and 3, indicating that it has some incremental/significant explanatory power over other financial ratio variables. Therefore, H1 is supported. As evident from Table 5, the Z-score could be used as a substitute for many financial ratios; Model 2 does not differ considerably from Models 1 and 3 in terms of the overall model significance, Nagelkerke R square, percentage of correctly classified firms, and most importantly, the significance of other variables, including ADELAY, MEETING, and LOSS. Hence, the auditors can use the Z-score as a key variable to help identify clients that are likely to receive a going-concern opinion or to screen potential clients. This finding is consistent with the findings of Ryu and Roh (2007).

5. Conclusion and implications

A going-concern audit opinion is issued by auditors to evaluate the company's ability in maintaining business continuity. Both financial and non-financial factors may affect the issuance of a going-concern audit opinion. The study sample consists of 268 observations of financially distressed manufacturing firms listed on the Vietnam Stock Exchange during 2010–2019. The

results reveal that the company's financial condition variable, as measured by Altman's Z-score, significantly affects the going-concern audit opinion decision. Furthermore, other variables such as incurring a loss, length of audit time, and frequency of BOD meetings also affect the issuance of a going-concern audit opinion. However, based on our empirical evidence, the profitability, leverage, liquidity, company size, and auditor size do not significantly affect the issuing of a going-concern audit opinion.

The findings demonstrate that the Z-score has significant explanatory power over other financial ratio variables in identifying the likelihood of auditors issuing a going-concern audit opinion. Therefore, auditors should consider the company's financial condition (the Z-score) to identify audit clients that are likely to receive a going-concern opinion or to screen their potential clients.

For audit clients, the results of this study prove that Big 4 and non-Big 4 audit firms do not differ regarding going-concern reports on financially distressed companies. Therefore, clients with some financial problems, and those who aim to lower the probability of receiving a going-concern opinion, do not need to be too concerned about the auditor being among the Big 4 or non-Big 4 companies.

This study has some limitations as it focuses mainly on client and audit factors that affect going-concern audit opinions for financially distressed manufacturing companies listed on the Vietnam Stock Exchange during 2010–2019. Besides this, the possibility of biases due to the use of purposive sampling should be taken into consideration. Future studies may extend the scope by testing other financial factors, non-financial factors, and environmental factors, as suggested by Carson et al. (2013) and Gold et al. (2019), and by expanding the research sample period.

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