

EVIDENCE ON AUDITORS USE OF BUSINESS CONTINUITY MODELS AS AN ANALYTICAL PROCEDURE

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ABSTRACT

Auditors expressing unqualified audit opinions and asserting going concern for companies that subsequently fail is regarded as audit failure and results in considerable disapproval of the auditing profession. Prior research has suggested that corporate failure models, as an analytical procedure, improve the accuracy of auditors' assessments of going concern. This study utilizes a survey to examine the practical efficacy of such models within the audit decision framework. It is found that corporate failure models facilitate the formation of more appropriate going concern opinions and increase judgment consensus.

JEL: M41, M42.

Keywords: Going concern opinions, audit judgment, corporate failure models

INTRODUCTION

The issuance of clean audit reports to companies that subsequently fail leads to the loss of confidence in the statutory audit function (Venuti, 2004; Bellovary et al., 2006). This often results in significant costs to both auditors and investors. Prior research that compares the outcomes of various bankruptcy models with auditors' reports issued prior to bankruptcy filings indicate that such models significantly outperform auditors' opinions issued to failed companies (Mutchler et al., 1997; Kleinman and Anandarajan, 1999). This suggests that corporate failure models may have a valuable role as a substantive analytical procedure that can assist auditors in forming more appropriate going concern opinions.

This study examines the practical efficacy and usefulness of corporate failure models for assessing going concern. Given the high cost associated with misclassifying failing clients (Kaminski et al., 2004; Nogler, 2004; Hensher and Jones, 2007), this study provides greater insights into the practical value of using corporate failure models for assessing going concern.

The study uses a survey instrument containing an experimental case to assess the contribution of a corporate failure model in auditors' going concern judgment. The results indicate that corporate failure models are highly effective in assisting auditors to mitigate the effects of human information processing limitations, thereby facilitating the formation of more appropriate audit opinions.

The remainder of the article is structured as follows: The next section examined the extant literature in the area. Section three describes the research objectives and hypothesis, followed by a description of the research design in section four. Section five presents and discusses the results of the study, while section six concludes the paper with research limitations and opportunities for further research.

LITERATURE REVIEW

As the going concern concept is a central postulate on which financial reporting is based, an accurate assessment of going concern status is critical to expressing an opinion on whether the financial statements

are presented fairly, as a going concern, (Asare, 1990; Boritz, 1991; Wolk et al., 1992; Carmichael and Pany, 1993; Constantinides, 2002; Carcello et al., 2003). The external audit function as the principal means of adding credibility to financial statements only prevails if it consistently reaches accurate assessments of the fair presentation of clients' financial statements (Flint, 1988; Asare, 1990; Weil, 2001; Geiger et al., 2005).

Prior research shows that auditors in many jurisdictions do not always arrive at what may be, in hindsight, an appropriate audit opinion (Casterella et al., 2000; Herbohn et al., 2007). Auditors appear to have a bias towards not qualifying failing clients, with typically 20 to 95 percent of bankrupt companies receiving unqualified audit reports (LaSalle and Anandarajan, 1996; Matsumura et al., 1997; Rama et al., 1997; Geiger et al., 1998; Casterella et al., 2000; Weil, 2001; Dunn et al., 2002; Weiss, 2002). Taffler and Citron (1988) show that only 20 percent of UK failed companies received going concern qualifications before being declared bankrupt. In New Zealand, only 28 percent of failed companies received appropriate audit qualifications (Van Peurse and Pratt, 2002). Furthermore, in Belgium, fewer than 26 percent of bankrupt companies received audit qualifications (Vanstraelen, 1999). Qualifying the financial statements of a going concern can also be costly, although it is more infrequent than un-qualifying failed companies (Hill et al., 1996; Geiger et al., 2005; Myers et al., 2008). From the auditors' perspective, the issuance of an incorrect audit opinion may result in expensive litigation, loss of audit fee, and damage to professional reputation (Grant et al., 1998; Dunn et al., 2002; Geiger et al., 2005). Consequently, the economic and social costs of an audit failure can be substantial, as evidenced by the widely publicized failures of Enron and WorldCom in the US (Bellovary et al., 2006; Hensher et al., 2007; Herborn et al., 2007).

Even though current auditing standards require an explicit assessment of clients' going concern status, there has been little change to the number of clients failing soon after receiving unqualified audit reports (Weil, 2001; Bellovary et al., 2006). The continued going concern misclassifications suggest that auditors have difficulty in forming appropriate going concern opinion. This may be attributed to the complexities in processing relevant and irrelevant information (Pany and Carmichael, 1993; Etheridge et al., 2000; Arnold et al., 2001; Windor, 2002; Constantinides, 2002; Ashton and Kennedy, 2002; Dunn et al., 2002; Guiral and Esteo, 2006). This is further confounded by the unstructured manner in which going concern appraisals are made where auditors use completely subjective evaluation methods (Williams, 1984; Grant et al., 1998; Arnold et al., 2001; Bellovary et al., 2006).

In this context, bankruptcy prediction research indicates that objective corporate failure models are generally more accurate than going concern audit opinions in discriminating between failed and un-failed companies (Pany and Whittington, 2001; Sharma and Sidhu, 2001; Dunn et al., 2002; Hensher and Jones, 2007). Although these inferences are only drawn from a priori research without investigating the value and applicability of corporate failure models in practice, they suggest that such models may have a valuable role within the audit decision process as an analytical procedure that can aid in assessing going concern (Carmichael and Pany, 1993; Koh, 1999; Pany and Whittington, 2001; Chung et al., 2008).

Furthermore, the link between going concern and bankruptcy is recognized in the auditing literature (Blocher and Loebbecke, 1993; Koh and Brown, 1991; Foster et al., 1998; Loftus and Miller 2000; Constantinides, 2002; Kuruppu et al., 2003). In particular, the literature identifies the probability of bankruptcy as the main determinant of the qualified going concern opinion (Seipel and Tunnell, 1995; Dunn et al., 2002), with a number of prior studies showing that a positive relationship exists between the probability of bankruptcy and the issuance of qualified audit opinions (Seipel and Tunnell, 1995; Raganandan and Rama, 1995; Carcello et al., 2003). Companies with high probabilities of bankruptcy receive more qualified audit opinions compared to companies with low probabilities of bankruptcy (Peel, 1989; McKeown et al., 1991; Citron and Taffler, 1992; Carcello et al., 2003). Consequently, these findings support and justify the possible use of statistical corporate failure models as an analytical

procedure for assessing going concern, in light of the high costs associated with going concern misclassification (Asare, 1990; Louwers, 1998; Cho and Lew, 2000; Dunn et al., 2002; Constantinides, 2002; Lowe et al., 2002; Kaminsky et al., 2004).

However, the efficacy of bankruptcy prediction models as an analytical procedure in the context of assessing going concern in practice has not been examined. The current study addresses this gap by examining the practical efficacy and usefulness of corporate failure models for assessing going concern. The research objective and hypotheses for the research are described next.

RESEARCH OBJECTIVE, HYPOTHESIS AND DESIGN

Analytical procedures such as corporate failure models can assist auditors in mitigating and overcoming some of the issues associated with human information processing limitations that make arriving at an appropriate audit opinion difficult (Kaminsky et al., 2004). Such techniques would assist auditors in focusing on evidence that is more relevant to the decision at hand, thereby improving audit efficiency and effectiveness (Constantinides, 2002; Kaminsky et al., 2004). The main objective of this study is therefore to examine the practical efficacy of corporate failure models as an analytical procedure for moderating human information processing limitations, thereby assisting auditors to form more appropriate going concern opinions. The latter research objective can be stated as the following singular hypothesis:

H₁: Auditors' assessment of going concern with the assistance of a corporate failure model is not different to judgments made without the assistance of a model.

Hypothesis 1 specifically examines the practical efficacy and value of corporate failure models in assisting auditors to form appropriate going concern opinions, by minimizing human information processing limitations, and reducing some of the subjectivity involved in the going concern assessment. It is expected that auditors who use the input from the corporate failure model while exercising professional judgment will exhibit a more appropriate perception of an entity's going concern status compared to auditors who form the assessment without the use of the model. The research design used to address the above hypothesis is discussed next.

A survey with a case study component was developed due to the experimental nature of this study, and is available from the author on request. The questionnaire was divided into two sections. The first section of the questionnaire gathered general demographic data about the respondents. Section two of the survey questionnaire consisted of the profiles of three companies, one of which was a failed company. For each company, the financial statements of the current and the previous accounting periods were provided, together with both contrary and mitigating factors, and other information which may or may not have a bearing on the going concern assessment. These were presented as a proxy to imitate human information processing limitations.

The three companies in the case study were carefully selected so that each company's going concern status was not obvious (Shelton, 1999; Tucker et al., 2003). The respondents had to form professional opinions regarding going concern status from the information provided in the case, which simulates auditors' going concern assessments in real situations. To assess the impact of the availability of information regarding corporate failure model on the accuracy of going concern assessments, two versions of the survey questionnaire were developed. The first version of the questionnaire also provided the respondents with the predictions from the corporate failure model as to the likelihood of each of the companies failing together with information regarding the nature of the corporate failure model, and its level of accuracy in predicting failed and non failed companies. The respondents were requested to examine the information given in each profile and to assess each company's going concern status on a 7-

point semantic deferential scale anchored between “going concern” and “failed company”. The second version of the survey was identical to the first, but it did not require the use of the corporate failure model. The failure model used in this study was obtained from Kuruppu et al., (2003), who developed a model that discriminated between failed companies and ‘marginal’ non-failed companies in New Zealand, where this study was conducted. This model was developed from Multiple Discriminant Analysis employing the Wilks’ lambda stepwise method. Utilizing a sample of 135 public companies with an initial set of sixty three plausible variables, the final model was reduced to twelve variables. The tolerances at the final step of variable entry were all above 0.001, which showed that the variables in the discriminant function were not highly correlated with other variables in the function. Furthermore, the Lachenbruch cross validation procedure indicated that the model was 92 percent accurate in discriminating between the two groups of companies, which was also reaffirmed with the *Press Q* statistic for the model.

The survey was posted to 700 auditors, half of whom received the survey instrument incorporating the model. Completed responses from 156 participants (22%) were received. This response rate compares favorably with other research conducted with less complex survey instruments, which have achieved response rates ranging from 14 to 22 percent (Elias and Johnston, 2001; Constantinides, 2002). Furthermore, tests showed no evidence of non-response bias. An independent-sample t-test and the cross-tabulation procedure using the asymptotic significance and Somer’s D statistics were used to test the hypothesis.

RESULTS

The survey includes the profiles of three companies, *A*, *B* and *C*. An analysis of the respondents’ demographic characteristics is first presented in Table 1. It shows that approximately a third of the respondents in the survey are from Big Four firms, with the remainder being from local or national audit firms. About twenty six percent of the respondents had between 6-10 years of auditing experience, with the majority of fifty seven percent having more than 10 years of auditing experience. A t-test for the Equality of Means indicated no significant differences between the perceptions of auditors across Big Four and non- Big Four firms, and the perceptions of auditors who had previously used corporate failure models and those who did not. The majority of the respondents (92%) have not previously used a corporate failure model for assessing going concern.

The first company in the survey, Company *A*, was a going concern and the appropriate responses were expected to lie to the lower side of the seven point scale, which denote that the presented profile is consistent with that of a going concern. Descriptive statistics categorized by model used are shown in Table 2. The descriptive statistics show that the mean response for the going concern assessment without the model was 3.78, while the mean for auditors who made use of the model was 2.00. Both groups of auditors generally made the inference that the profile of Company *A* was that of a going concern, although auditors using the model were more disposed to forming a judgment that the company was a going concern. Furthermore, the standard deviation of the responses was significantly less with the use of the model compared to opinions formed without the model. This indicates more consistency in the expressed opinions as a result of using the corporate failure model.

As Company *B* was not a going concern, the appropriate responses were expected to be on the higher side of the seven-point scale. Table 2 show that for Company *B*, the mean response of auditors who did not use the corporate failure model was 3.15, indicating that they were more disposed towards forming an opinion that the company was a going concern. On the other hand, auditors utilizing the corporate failure model had a mean response of 5.02. The latter more appropriately reflects the going concern status for Company *B* as a non going concern.

Table 1: Respondents' Demographic Attributes

Panel A: Level of Auditing Experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 years	25	16.0	16.8	16.8
	6-10 years	39	25.0	26.2	43.0
	More than 10 years	85	54.5	57.0	100.0
	Total	149	95.5	100.0	
Missing		7	4.5		
Total		156	100.0		
Panel B: Familiarity with Corporate Failure Models					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	115	73.7	74.2	74.2
	Yes	40	25.6	25.8	100.0
	Total	155	99.4	100.0	
Missing		1	0.6		
Total		156	100.0		
Panel C: Regularity of Corporate Failure Model Use for Assessing Going Concern					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Regularly Used	2	1.3	1.3	1.3
	2	2	1.3	1.3	2.6
	3	2	1.3	1.3	3.9
	4	2	1.3	1.3	5.2
	5	1	0.6	0.6	5.8
	6	3	1.9	1.9	7.7
	Not Used	143	91.7	92.3	100.0
	Total	155	99.4	100.0	
Missing		1	0.6		
Total		156	100.0		
Panel D: Audit Firm Characteristics					
	Big Four firm	48			
	Local or National firm	108			

This table shows descriptive statistics for the respondents. All respondents were chartered accountants in public practice.

Table 2: Descriptive Statistics for Going Concern Assessments

Model Use	Company Profile				
			A	B	C
			Statistic	Statistic	Statistic
Without bankruptcy Model	Mean		3.78	3.15	4.61
	95% Confidence Interval	Lower Bound	3.30	2.86	4.30
		Upper Bound	4.25	3.43	4.92
	Standard Deviation		1.945	1.171	1.279
With bankruptcy Model	Mean		2.00	5.02	3.18
	95% Confidence Interval	Lower Bound	1.82	4.69	2.87
		Upper Bound	2.18	5.36	3.49
	Standard Deviation		0.866	1.557	0.866

This table shows the descriptive statistics of auditors' perceptions about the three companies' going concern status with and without the use of the model.

However, the small but nevertheless higher variability of opinions from auditors using the corporate failure model for Company B has to be considered from the context of the overall accuracy that was derived from using it. Consequently, even though the variability is higher (1.557 to 1.171), auditors using the model were far more accurate in appropriately forming an opinion that Company B represents the profile of a non going concern. This also indicates that auditors continue to exercise professional judgment when using predictions from corporate failure models, rather than simply relegating

professional judgment to a somewhat secondary role in the light of other contrary and mitigating information that may be relevant to the going concern assessment.

For Company *C*, which was a going concern, the descriptive statistics in Table 2 show that going concern assessments made without the assistance of the corporate failure model have a mean response of 4.61. As a result, the responses for this group of auditors were biased to the higher side of the scale, indicating perceptions that the profile of Company *C* was more likely to be that of a non-going concern. In contrast, going concern assessments made with the assistance of the corporate failure model have a mean response of 3.18. This is less than the mid-point on the scale, indicating the greater perceived likelihood that Company *C* is a going concern. Moreover, the standard deviation for the responses also illustrates that auditors making use of the model have lower variability for the expressed opinion that Company *C* was a going concern. Table 3 provides further analysis of the effect of the corporate failure model on the going concern opinion, where it shows a cross-tabulation of the audit judgments for the three companies, with and without the model.

Table 3: Cross-tabulation of Responses by Model Use

Response on 7-point scale		Company A			Company B			Company C		
		Model Used		Total	Model Used		Total	Model Used		Total
		No	Yes		No	Yes		No	Yes	Total
1 GC	No.	12	24	36	1	3	4		8	8
	% WMU	17.9%	27.0%	23.1%	1.5%	3.5%	2.6%		9.0%	5.1%
2	No	12	49	61	18	5	23	4	24	28
	% WMU	17.9%	55.1%	39.1%	26.9%	5.8%	15.0%	6.0%	27.0%	17.9%
3	No	6	9	15	33	7	40	8	29	37
	% WMU	9.0%	10.1%	9.6%	49.3%	8.1%	26.1%	11.9%	32.6%	23.7%
4	No	4	6	10	4	11	15	18	10	28
	% WMU	6.0%	6.7%	6.4%	6.0%	12.8%	9.8%	26.9%	11.2%	17.9%
5	No	17	1	18	8	16	24	23	10	33
	% WMU	25.4%	1.1%	11.5%	11.9%	18.6%	15.7%	34.3%	11.2%	21.2%
6	No	14		14	2	34	36	8	6	14
	% WMU	20.9%		9.0%	3.0%	39.5%	23.5%	11.9%	6.7%	9.0%
7 FC	No	2		2	1	10	11	6	2	8
	% WMU	3.0%		1.3%	1.5%	11.6%	7.2%	9.0%	2.2%	5.1%
Total	Count	67	89	156	67	86	153	67	89	156
	% WMU	100%	100%	100%	100%	100%	100%	100%	100%	100%
Pearson Chi-Square (Asymptotic Sig.)		0.000***			0.000***			0.000***		

Table 3 shows a cross-tabulation of the audit judgments for the three companies, made with and without the model. GC, FC and WMU denote going concern, failed company and within model used respectively. *** denote significance at the 1 percent level.

For Company *A*, 27% of auditors using the model in the going concern assessment recognized it as a going concern, with a further 55.1% also indicating that it has a very strong likelihood of being a going concern, which is the appropriate response for this profile. A higher response on the second rank also indicates that the respondents did not select responses based entirely on the model. On the other hand,

only 17.9% each of auditors who made the going concern assessment without the model appropriately indicated the first two scale ranks as being the more suitable indicator of the company's going concern status, which is significantly less than for auditors who utilized the model. The total of 35.8% for auditors who selected the first two scale ranks without using the model contrasts with 82.1% for auditors who used the model.

The cross-tabulation also indicates significant misclassification errors for auditors making the assessment without the model. About 25% and 21% of auditors incorrectly formed assessments that Company *A* was a failed company, by indicating responses on points five and six of the scale respectively, when only 1.1% of the respondents using the model indicated that the profile was of a failed company, by marking on point five of the scale. The asymptotic significance level of the Pearson Chi-Square statistics further indicate that the going concern opinions formed with and without the assistance of the corporate failure model were significantly different. A similar analysis of responses regarding Companies *B* and *C* further indicates that going concern assessments with and without corporate failure models were significantly different.

Although both the descriptive statistics and the cross-tabulation procedure for the three companies indicate significant differences in auditors' judgments made with the assistance of the corporate failure model, which also illustrated Type 1 errors, an independent sample t-test was further conducted to conclusively examine the statistical significance of these differences (Rodeghier, 1996). The results of this procedure are presented in Table 4. They indicate that there are significant differences in going concern judgment made with and without the corporate failure model, which reaffirms the former results.

Table 4: Independent Samples T-Test

Company	F- value	Sig. of F	Mean Difference	t	Sig. (2-tailed)
A	111.479	0.000	-1.78	-7.670	0.000***
B	7.714	0.006	1.87	8.208	0.000***
C	0.768	0.382	-1.43	-6.376	0.000***

Table 4 presents the results of the independent samples t-test to that further examines differences in going concern assessments made with and without the model. *** denote significance at the 1 percent level.

The next section provides a summary of the main findings and concludes the paper with opportunities for further research.

SUMMARY AND CONCLUSION

This study examined the value and efficacy of corporate failure models in assisting auditors to form more accurate going concern opinions by minimizing human information processing limitations. A case study methodology was used as a proxy for the auditors' decision making environment. The results indicate that the use of the corporate failure model was effective as a means of mitigating human information processing limitations and consequently forming more appropriate conclusions of clients' financial condition, which precursor the issuance of appropriate going concern opinions. Since the issuance of unqualified audit reports to failed clients is generally perceived to be synonymous with audit failures, the routine application of corporate failure models within the audit decision process will have substantial benefits for the profession in its role of adding credibility to financial statements. It would be an effective means of minimizing the audit expectations gap through the issuance of more appropriate audit opinions.

The results further indicate that the application of corporate failure models for assessing going concern does not lead to the relegation of professional judgment to a somewhat secondary level within the audit decision process. On the contrary, only a minority of respondents suggested, by selecting the endpoints of the scale, that the model's prediction was the only factor influencing their chosen going concern opinion.

The majority of the respondent auditors effectively used the contribution of the corporate failure model together with other pertinent information to form the going concern opinion. This would minimize the concern that any explicit recognition of the efficacy of suitable corporate failure models in auditing standards, as opposed to the ambiguous guidance at present, would lower the significance of professional judgment in the assessment process. As the results show, auditors would use the relevant contribution of the corporate failure model in conjunction with other information to exercise audit judgment.

As with all experimental research of this nature, this study is limited by the fact that it was not applied in an actual audit engagement. This may be considered to be a limitation in that it was not possible to observe the efficacy of the model during an actual audit process, which would have been the ideal context on which to base statistical inferences. Nevertheless, the case study experiment was a realistic proxy, and it effectively captured the influences of human information processing limitations present within the audit decision framework. Accordingly, the conclusions formed are valid. An attractive area for future research would be to examine the interest among financial statement users and the profession of explicitly having a statement about clients' going concern status in the audit report. With the demonstrated capability of suitable corporate failure models to assess impending failure with a high degree of accuracy, auditors' on their part would not be accepting any more responsibility, and hence liability, than is currently required by law or current auditing standards. On the contrary, they will be making a clearer statement of clients' future viability, and hence the appropriateness of the financial statements. A change in reporting format in this manner would not require additional resources, but it is likely that it may have a positive influence on the auditors' function in society of adding credibility to financial statements. Consequently, this remains a stimulating area for further research.

REFERENCES

- AASB. 2002. AUS 708 Going Concern. Australian Accounting Research Foundation, Melbourne.
- AICPA. 1988. SAS 59: The Auditor's Consideration of an Entity's Ability to Continue as a Going Concern. American Institute of Certified Public Accountants, New York.
- APB. 1994. SAS 130: The Going Concern Basis in Financial Statements. Auditing Practices Board, London.
- Arnold, V., P. A. Collier, S. A. Leech, and S. G. Sutton. 2001. The Impact of Political Pressure on Novice Decision Makers: Are Auditors Qualified to Make Going Concern Judgements? *Critical Perspectives on Accounting* 12: 323-38.
- Arnold, V., and D. E. Edwards. 1993. Going Concern Evaluation: Factors Affecting Decisions. *The CPA Journal* October: 58-60.
- Asare, S. K. 1992. The Auditor's Going Concern Decision: Interaction of Task Variables and the Sequential Processing of Evidence. *The Accounting Review* 67, no. 2: 379-93.
- . 1990. The Auditor's Going-Concern Decision: A Review and Implications for Future Research. *Journal of Accounting Literature* 9: 39-64.
- Ashton, R. H., and J. Kennedy. 2002. Eliminating Recency with Self-review: The Case of Auditors' Going Concern Judgements. *Journal of Behavioural Decision Making* July: 223-240.

- Bellovary, J., Giacomino, D., and D. Akers. 2006. Weighing the Public Interest: Is the Going Concern Opinion Still Relevant? *CPA Journal*: Available at: www.nysscpa.org/cpajournal/2006/106/essentials/p16.htm
- Blocher, E., and J. K. Loebbecke. 1993. Research in Analytical Procedures: Implications for Establishing and Implementing Auditing Standards. *The Expectations Gap Standards: Progress, Implementation Issues and Research Opportunities*, 177-226. New York: AICPA.
- Boritz, J. E. 1991. Going...Going...Gone! *CA Magazine* April: 22-29.
- Carcello, J. V., D. R. Hermansn and T. L. Neal. 2003. Auditing Reporting Behaviour when GAAS Lack Specificity: the Case of SAS No. 59. *Journal of Accounting and Public Policy* 22: 63-81.
- Carmichael, D. R., and K. Pany. 1993. Reporting on Uncertainties, Including Going Concern. *The Expectations Gap Standards: Progress Implementation Issues, Research Opportunities.*, 35-58. New York: AICPA.
- Casterella, J. R., B. L. Lewis, and P. L. Walker. 2000. Modelling the Audit Opinions Issued to Bankrupt Companies: A Two-stage Empirical Analysis. *Decision Sciences* 31, no. 2: 204-229.
- Casterella, J. R., B. L. Lewis, and P. L. Walker. 1999. Why Do Bankrupt Companies Receive Unmodified Audit Opinions? *Research in Accounting Regulation* 13: 169-77.
- Cho, S., and A. Y. Lew. 2000. Analytical Review Applications among Large Audit Firms in Hong Kong. *Managerial Auditing Journal* 15, no. 8: 431-38.
- Chung, K., S.Tan and D. Holdsworth. 2008. Insolvency Prediction Model Using Multivariate Discriminant Analysis and Artificial Neural Network for the Finance Industry in New Zealand. *International Journal of Business and Management* 3, no.1: 19-28.
- Constantinides, S. 2002. Auditors', Bankers' and Insolvency Practitioners' "Going Concern" Opinion Logit Model. *Managerial Auditing Journal* 17, no. 8: 487-501.
- Dunn, K. A., C. E. L. Tan, and E. K. Venuti. 2002. Audit Firm Characteristics and Type Two Errors in the Going Concern Opinion. *Asia-Pacific Journal of Accounting & Economics* 9: 39-69.
- Elias, R. Z., and J G. Johnston. 2001. Is There Incremental Information Content in the Going Concern Explanatory Paragraph? *Advances in Accounting* 18: 105-17.
- Etheridge, H. L., R. S. Sriram, and Y. K. Hsu. 2000. A Comparison of Selected Artificial Neural Networks that Help Auditors Evaluate Client Financial Viability. *Decision Sciences* 31, no. 2: 531-50.
- Flint, D 1988. *Philosophy and Principles of Auditing*: An Introduction. London: Macmillan Education.
- Foster, B. P., T. J. Ward, and J. Woodroof. 1998. An Analysis of the Usefulness of Debt Defaults and Going Concern Opinions in Bankruptcy Risk Assessment. *Journal of Accounting, Auditing & Finance* 13, no. 3: 351-67.
- Geiger, M., K. Raghunandan, and D. Rama. 1998. Costs Associated with Going Concern Modified Audit Opinions: An Analysis of Auditor Changes, Subsequent Opinions, and Client Failures. *Advances in Accounting* 16: 117-39.

- . 1998. Going-concern Audit Report Recipients Before and After SAS No. 59. *The National Public Accountant* 43, no. 8: 24-25.
- . 2005. Recent Changes in the Association between Bankruptcies and Prior Audit Opinions. *Auditing: A Journal of Practice & Theory* 24: 21-35.
- Grant, C. T., S. W. Wheeler, and C. S. Ciccotello. 1998. Predicting Financial Distress: Audit Classification in a Litigious Environment. *Advances in Accounting* 16: 163-93.
- Guiral, A., and F. Esteo. 2006. Are Spanish Auditors Sceptical in Going Concern Evaluations? *Managerial Auditing Journal* 21, no. 6: 598-620.
- Hensher, D.A., and S. Jones. 2007. Forecasting Corporate Bankruptcy: Optimising the Performance of the Mixed Logit Model. *ABACUS* 43, no. 3: 241-264.
- Herbohn, K., V. Rangunathan, and R. Garsden. 2007. The Horse has Bolted: Revisiting the Market Reaction to Going Concern Modifications of Audit Reports. *Accounting and Finance* 47: 473-493.
- Hill, N. T., S. E. Perry, and S. Andes. 1996. Evaluating Firms in Financial Distress: An Event History Analysis. *Journal of Applied Business Research* 12, no. 3: 60-71.
- Institute of Chartered Accountants of New Zealand. 1998. New Zealand Codified Auditing Standards and Audit Guidance Statements. ICANZ: Wellington.
- International Federation of Accountants (IFAC). 1999. International Statement on Auditing 570 Going Concern. *IFAC Handbook Technical Pronouncements*. IFAC: New York.
- Kaminski, K. A., T. S. Wetzel, and L. Guan. 2004. Can Financial Ratios Detect Fraudulent Financial Reporting? *Managerial Auditing Journal* 19, no. 1: 15-28.
- Kleinman, G., and A. Anandarajan. 1999. The Usefulness of Off-balance Sheet Variables as Predictors of Auditors' Going Concern Opinions: An Empirical Analysis. *Managerial Auditing Journal* 14, no. 6: 269-72.
- Koh, H. C., and R. M. Brown. 1991. Probit Predictions of Going and Non-going Concerns. *Managerial Auditing Journal* 6, no. 3: 18-23.
- Koh, H. C., and S. S. Tan. 1999. A Neural Network Approach to the Prediction of Going Concern Status. *Accounting and Business Research* 29, no. 3: 211-16.
- Kuruppu, N., L. Laswad, and P. Oyelere. 2003. The Efficacy of Liquidation and Bankruptcy Prediction Models for Assessing Going Concern. *Managerial Auditing Journal* 18, no. 6: 577-90.
- LaSalle, R. E., A. Anandarajan, and A. F. Miller. 1996. Going Concern Uncertainties: Disclaimer of Opinion versus Unqualified Opinion with Modified Wording. *Auditing* 15, no. 2: 29-44.
- Loftus, J. A., and M. Miller. 2000. International Developments on Reporting Going Concern Uncertainties and Financial Vulnerability. *Advances in International Accounting* 13: 23-57.
- Louwers, T. J. 1998. The Relation between Going-Concern Opinions and the Auditor's Loss Function. *Journal of Accounting Research* 36, no. 1: 143-56.

- Louwers, T. J., F. M. Messina, and M. D. Richard. 1999. The Auditor's Going Concern Disclosure as a Self-Fulfilling Prophecy: A Discrete Time Survival Analysis. *Decision Sciences* 30, no. 3: 808-24.
- Lowe, D., P. Reckers, and S. Whitecotton. 2002. The Effects of Decision Aid Use and Reliability on Jurors' Evaluations of Auditor Liability. *Accounting Review* 77, no. 1: 185-202.
- Matsumura, E. M., K. R. Subramanyam, and R. R. Tucker. 1997. Strategic Auditor Behaviour and Going Concern Decisions. *Journal of Business Finance & Accounting* 24, no. 6: 727-58.
- McKeown, J. C., J. F. Mutchler, and W. Hopwood. 1991. Towards an Explanation of Auditor Failure to Modify the Audit Opinions of Bankrupt Companies. *Auditing: A Journal of Practice & Theory* 10, no. Supplement: 1-13.
- Mutchler, J. F., W. Hopwood, and J. M. McKeown. 1997. The Influence of Contrary Information and Mitigating Factors on Audit Opinion Decisions on Bankrupt Companies. *Journal of Accounting Research* 35, no. 2: 295-310.
- Myers, L. A., J. Schmidt and M. Wilkins. 2008. Have Auditors become Too Conservative? Evidence from Going Concern Opinions. Available at: www.ssrn.com/abstract=1081991
- Nogler, G. E. 2004. Long-term Effects of the Going Concern Opinion. *Managerial Auditing Journal* 19, no. 5: 681-688.
- Pany, K. J., and O. R. Whittington. 2001. Research Implications of the Auditing Standard Board's Current Agenda. *Accounting Horizons* 15, no. 4: 401-11.
- Rama, D., K. Raghunandan, and M. Geiger. 1997. The Association between Audit Reports and Bankruptcies: Further Evidence. *Advances in Accounting* 15: 1-15.
- Rodeghier, M. 1996. *Surveys with Confidence: A Practical Guide to Survey Research Using SPSS*. Chicago: SPSS.
- Seipel, C., and L. Tunnell. 1995. An Empirical Investigation into the Relationship between "Subject To" Going Concern Opinions and Risk Shifts. *American Business Review* 13, no. 2: 1-5.
- Sharma, D. S., and J. Sidhu. 2001. Professionalism vs. Commercialism: The Association between Non-Audit Services (NAS) and Audit Independence. *Journal of Business Finance & Accounting* 28, no. 5 & 6: 595-629.
- Sharma, D. S., and P. A. Stevenson. 1997. The Impact of Impending Corporate Failure on the Incidence and Magnitude of Discretionary Accounting Policy Changes. *British Accounting Review* 29: 129-53.
- Shelton, S. W. 1999. The Effect of Experience on the use of Irrelevant Evidence in Auditor Judgement. *The Accounting Review* 74, no. 2: 217-24.
- Tucker, R. R., E. M. Matsumura and K. R. Subramanyam. 2003. Going Concern Judgements: An Experimental Test of the Self-fulfilling Prophecy and Forecast Accuracy. *Journal of Accounting and Public Policy* 22: 401-432.
- Van Peurse, K. A., and M. J. Pratt. 2002. A New Zealand Failure Prediction Model: Development and International Implications. *Advances in International Accounting* 15: 229-47.

Vanstraelen, A. 1999. The Auditor's Going Concern Opinion Decision: A Pilot Study. *International Journal of Auditing* 3: 41-57.

Venuti, A. 2004. The Going Concern Assumption Revisited: Assessing A Company's Future Viability. *CPA Journal* 74: 40-43.

Weil, J. 2001. Going Concerns: Did Accountants Fail to Flag Problems at Dot-com Casualties? *Wall Street Journal* 9 February.

Williams, H. J. 1984. Practitioners' Perspectives on Going-Concern Issues. *The CPA Journal* 54, no. 12: 12-19.

Windsor, C. A. 2002. Auditors' Predisposition to Provide Fair Judgments: Australian Evidence of Auditors' Level of Moral Reasoning. *Australian Accounting Review* 12, no. 2: 51-57.

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