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Evaluation of Competing Hypotheses in Auditing

Stephen K. Asare and Arnold M. Wright

SUMMARY

This paper presents the results of an experiment that examines how auditors evaluate competing hypotheses. Various audit tasks require auditors to evaluate competing hypotheses. For instance, an auditor must determine whether an unexpected fluctuation in a client's account balance was caused

by an error, an irregularity or a change in economic conditions. The manner in which auditors evaluate competing hypotheses can affect evidence gathering, decision defensibility and cognitive effort. Yet, there is limited evidence on this issue. Two alternative evaluation strategies are examined: a complementary approach (wherein hypotheses are treated as related entities) and an independent approach (wherein hypotheses are treated as separate entities).

Auditors conducted an analytical procedure investigation entailing hypothesis generation and enumeration of initial prior probabilities. Participants also revised probabilities as they gathered additional evidence. The results suggest that auditors evaluate competing hypotheses as if the hypotheses are independent. This evaluation strategy is conservative and appears to represent a trade-off among efficiency, defensibility and cognitive strain. Since this independent strategy fosters additional testing, firms may want to investigate the conditions under which the additional testing leads to increased effectiveness and defensibility. The results also raise questions about the prescription that encouraging auditors to consider alternative hypotheses will reduce their confidence in a target hypothesis.

RESEARCH NOTES

The Effect of SAS No. 59: How Treatment of the Transition Period Influences Results

Joseph V. Carcello, Dana R. Hermanson and H. Fenwick Huss

SUMMARY

Carcello et al. (1995) and Raghunandan and Rama (1995) investigated whether the issuance of SAS No. 59 affected auditors' going-concern decisions and found inconsistent results. The primary difference between the two studies was their handling of the "transition period," the time from April 1988 to December 30, 1989. During this period SAS No. 59 was published but not yet mandatory (making it unclear whether SAS No. 34 or SAS No. 59 was followed). This article reconciles the results of previous research on SAS No. 59 and documents the sensitivity of certain SAS No. 59 analyses (those using "short windows" before and after the new standard) to various treatments of the transition period.

For analyses of either bankrupt companies or distressed, non-bankrupt companies, any evidence of a significant SAS No. 59 effect is highly dependent on the transition- period treatment. Extant SAS No. 59 studies should be interpreted with caution, and further research on the effects of SAS No. 59 on going-concern assessments is needed.

Women as Managers and Partners: Context Specific Predictors of Turnover in International Public Accounting Firms

Dan R. Dalton, John W. Hill and Robert J. Ramsay

SUMMARY

Despite the controversy regarding "glass ceiling" effects for women and the specific concern expressed by large CPA firms about their inability to retain women in senior positions, there is little empirical evidence regarding why women partners and managers leave public accounting. In this study we examine factors potentially associated with the actual turnover decisions for a large sample of auditors who were managers or partners in large CPA firms. Public accounting-specific latent variables are developed to capture four critical aspects that affect turnover in public accounting: (1) competitive environment, (2) work/non-work obligations, (3) internal/external control and supervision, and (4) litigation risk. Women differ fundamentally on the work/non-work obligations dimension. Women who leave the employ of an auditing firm are significantly less likely to be re-employed in public accounting compared to their male counterparts. Additionally, women who do remain in public accounting, post-separation, are more likely to work for smaller firms.

Key Words: Gender, Turnover, Women managers, Women partners.

Data Availability: The data on which this study relies are available from the authors contingent on the permission of the public accounting firms who provided us access.

Assessing the Risk of Management Fraud Through Neural Network Technology

Brian Patrick Green and Jae Hwa Choi

SUMMARY

The purpose of this study is to develop an effective neural network (NN) fraud classification model employing endogenous financial data. During model training, a NN learns the pattern of input data for a fraud and nonfraud sample. A classification model created from the learned behavior pattern is then applied to a test sample. Three models, using different expectation methods to develop data input, act as an investigation rule to classify financial statement data. NN technology allows the development of pattern aggregation by simultaneously evaluating isolated an analytical procedure (AP) expectations. During the preliminary stage of an audit, a financial statement classified as fraudulent signals the auditor to increase substantive testing during fieldwork.

Although prior research has examined the effectiveness of preliminary APs as a means of detecting material misstatements, the available evidence is inconclusive and somewhat ambiguous. The study's results supports future use of NNs as a fraud-risk assessment tool.

Key Words: Analytical auditing, Management fraud, Neural networks.

A Comparative Examination of Auditor Premature Sign-Offs Using the Direct and the Randomized Response Methods

Philip M. J. Reckers, Stephen W. Wheeler and Bernard Wong-On-Wing

SUMMARY

Prior research has examined the incidence of questionable acts by auditors using a direct method (DM) of inquiry. A potential problem with the use of the DM of eliciting responses to sensitive issues is respondent bias. This study assessed the degree of respondent bias by examining auditor premature sign-offs using both the DM of inquiry and the randomized response technique (RRT) proposed by Greenberg et al. (1971). The findings using the RRT were that, on the average, auditors prematurely signed off almost ten times over a period of one year. Over 78 percent of the auditors admitted to having prematurely signed off at least once. A significantly lower incidence of premature sign-offs was reported by auditors who responded to the DM of elicitation. While the DM of inquiry is an acceptable approach for examining many types of issues, the results suggest that the RRT is a preferred method for eliciting sensitive information.

RESEARCH NOTES

Sample Size Determination Using the Augmented Variance Estimator

Kermit John Rohrbach

SUMMARY

Rohrbach (1993) provides evidence that the augmented variance estimator (AVE) for sampling accounts receivable and inventory is as reliable but more efficient than the method-of-moments estimator (Dworin and Grimlund 1984). Implementation of AVE at the audit level requires a method of planning sample size, which Rohrbach (1993) does not discuss. This paper provides guidance for sample size planning when using the AVE.

Sample size determination is considered under two paradigms (estimation and testing). Sample size formulas are presented in both cases. A method of evaluating these formulas without knowledge or estimation of the population error variance is proposed. This method considerably simplifies sample size planning. A Monte Carlo study is performed to assess the reliability, achieved precision and power of sample sizes determined by the proposed method. The study indicates that sample sizes derived by the proposed method achieve desired precision and coverage for estimation and control decision risks at desired levels for testing, without being excessively conservative.

Second-Partner Review: An Experimental Economics Investigation

Robert R. Tucker and Ella Mae Matsumura

SUMMARY

This paper uses experimental economic methods to test the effects of second-partner reviews and the availability of sampling information on the competence and independence reflected in the engagement partner's audit reports. The results support the hypotheses, which are based on the analytical predictions of Matsumura and Tucker (1995). Reporting bias was reduced, but not eliminated, by adding second-partner reviews and/or the availability of additional sample information. One unexpected result was that second partners, whose incentive scheme was designed to promote unbiased reporting, exhibited reporting bias and, in one cell, exhibited more bias than the "biased" engagement partner they were monitoring.

When not subject to second-partner reviews, engagement partners were strategic in their reporting, but not in their sampling decisions. With the introduction of second-partner reviews, the situation reversed. The effects of client pressure became evident in sampling, but were less pronounced in reporting.

RESEARCH NOTES

The Market Effects of Auditor Resignations

Donald W. Wells and Martha L. Loudder

SUMMARY

This study investigates the information content of auditor resignations. The Securities and Exchange Commission (SEC) requires that Form 8-K not only report a change in auditor, but also disclose if the change is due to the resignation of the previous auditor. The SEC's action implies that an auditor resignation provides information to users of financial statements; however, there is mixed evidence in the literature about the valuation implications of the disclosure. The results of this study support the hypothesis that resignations have information content. A negative price reaction at the release of the Form 8-K suggests that the resignation was unexpected by the market and interpreted as "bad news." In most cases the firm does not disclose the auditor's reason for

resigning, so the market may infer that the resignation is a signal of the auditor's private information about the firm or its managers. The most likely source of such an inference may be the reasons for resignations listed in the professional standards. The study contributes to the body of research that examines the market response to various audit-related events such as selection of auditors, issuance of audit opinions, and changes in auditors. For policy makers, the value-relevance implied by the market reaction suggests that the mandatory disclosure rules are useful to investors.

Key Words: Auditor resignation, Auditor changes, Capital markets.

Data Availability: A list of the sample firms may be obtained from the authors. The remaining data may be obtained from sources indicated in the text.

A Computational Model of Loan Loss Judgments

William F. Wright and John J. Willingham

SUMMARY

This paper presents a model of the audit judgment process of estimating what portion, if any, of a commercial loan is uncollectible. Evaluating loan collectibility can be difficult because the process is only semi-structured, and it can be contextually both complex and information intensive. To understand this critical audit judgment, the judgment processes of highly experienced loan auditors were studied using structured interviews and problem-solving sessions. Using a production system architecture, the model provides a loan collectibility conclusion and a line of reasoning to explain and support the conclusion. Expert reasoning is applied contextually, given characteristics of the loan and the borrower. The model's knowledge base includes: a set of hypotheses for generation of a loan conclusion; a hierarchical structure of contextually relevant intermediate (subgoal) conclusions; and declarative and procedural knowledge represented as production rules to select, measure, weight and combine information. Both qualitative and quantitative information are used. Model validation evidence is reported. Several ideas for future research are also presented.

Key Words: Computational model, Judgment expertise, Knowledge-based systems.

Data Availability: Details on the data are available from the first author.

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