Business Strategy and Auditor Reporting

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SUMMARY: This study examines whether a firm's business strategy influences auditor reporting. We rely on the organizational literature to develop our prediction that firms utilizing the innovative "prospector" strategy will be more likely than firms utilizing the cost-leadership "defender" strategy to receive both going concern and material weakness opinions. Our empirical evidence supports this prediction. Specifically, we find that, among a sample of financially troubled firms, prospectors are significantly more likely than defenders to receive a going concern opinion. We then analyze a sample of clients who subsequently filed for bankruptcy and find that auditors are less likely to issue going concern opinions to prospector clients. This indicates that auditors commit more Type II errors when auditing prospector clients. We also find that prospectors are significantly more likely than defenders to receive a material weakness opinion. Taken together, the evidence suggests that business strategy is a significant determinant of both going concern and material weakness auditor reporting.

Keywords: business strategy; auditors; going concern; material weakness.

JEL Classifications: M41; M42; L10.

Data Availability: All data are available from public sources identified in the text.

INTRODUCTION

This study examines the effect of business strategy on auditor decisions in settings that require significant professional judgment by an auditor. Specifically, we examine whether and how a client's business strategy affects an auditor's decision to issue a going concern opinion (GCO) and the conclusion on whether a client's internal control over financial reporting (ICFR) is effective or not. Professional judgment is essential to the proper conduct of an audit.[1] The decision to issue a GCO involves considerable judgment (Carson et al. 2013, 360), and significant judgment is involved in each phase of an ICFR audit (Asare et al. 2013). Therefore, these settings are ideal for testing whether business strategy affects auditor judgment.

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[1] Professional judgment is essential to the proper conduct of an audit because interpretation of relevant auditing standards and informed decisions cannot be made without the application of relevant knowledge and experience to the facts and circumstances (AU-C 200, para. A27, AICPA 2011).

Since the mid-1990s, audit firms have developed the business risk audit (BRA) methodology,[2] which emphasizes the importance of a client's business strategy in planning and performing audits (Knechel 2007; Peecher, Schwartz, and Solomon 2007; Robson, Humphrey, Khalifa, and Jones 2007). Although the net benefits of BRAs seem ambiguous,[3] they are nonetheless promoted by auditing textbooks (e.g., Knechel, Salterio, and Ballou 2006) and regulators because they are perceived to improve the effectiveness and efficiency of audits. For example, Auditing Standard No. 5 (PCAOB 2007; hereafter, AS5) emphasizes a top-down risk-based approach, stating that the complexity of the organization, business unit, or process plays an important role in an auditor's risk assessment. More explicitly, Auditing Standard No. 12 (PCAOB 2010; hereafter, AS12) requires auditors to obtain an understanding of a company's objectives, strategies, and related business risks in order to identify business risks that could reasonably be expected to result in material misstatement. The note to AS12, paragraph 15 (PCAOB 2010), provides an example showing that business risks could ultimately result in substantial doubt about a company's ability to continue as a going concern. Nevertheless, while standard setters and regulators have mentioned the importance of considering business strategy when performing audits, there is little large-sample empirical evidence to demonstrate whether and how clients' business strategies affect auditor reporting decisions. This paper aims to provide evidence about this issue. Below, we explain our measure of business strategy and how characteristics of each strategy could potentially affect an auditor's judgment and decision to issue a GCO.

Our measure of business strategy is based on Miles and Snow's (1978, 2003) organizational typology and has been used in prior studies in the accounting literature, including Ittner, Larcker, and Rajan (1997), Bentley, Omer, and Sharp (2013), and Higgins, Omer, and Phillips (2015). Organizations are classified into three strategy categories based on how quickly they change their products or markets: prospectors, analyzers, and defenders. These three strategies exist on a continuum, with prospectors at one end, defenders on the other, and analyzers in the middle. Prospectors are innovative firms willing to change their product mix quickly in order to capture the best opportunity as it arises, and therefore display rapid and sporadic growth patterns; defenders, on the other hand, are cost leaders that maintain a narrow mix of products and focus on improving their price, service, and/or quality, and thus display cautious and incremental growth patterns. Thus, the past performance of prospector firms is more volatile, and it is consequently more difficult for an auditor to accurately predict future performance for prospector firms based on historical information. Faced with greater risk, auditors are likely to be more conservative and more inclined to issue GCOs for prospector firms (Francis and Krishnan 1999; Rosner 2003; Goh, Krishnan, and Li 2013). Prospectors focus on innovation and invest heavily in marketing and research and development, while defenders focus on cost efficiency and invest heavily in automated production and distribution processes in order to achieve routinization and mechanization. AU Section 341 (AICPA 1988) requires auditors to consider conditions or events, including recurring losses, that indicate substantial doubt about an entity's ability to continue as a going concern. In light of the inherently uncertain outcome of research and development investment and the higher likelihood of losses by prospectors, auditors are more likely to issue a GCO to them. However, when in distress, management plans initiated by prospectors to regain profitability (e.g., by developing new products and entering new markets) are more likely to be successful relative to defenders, since prospectors maintain a rich mix of products while defenders specialize in narrow product lines. Thus, auditors are more likely to be convinced that the management plans of prospectors can substantially mitigate the adverse effect of conditions and events that would otherwise lead to a GCO. Thus, whether auditors are more or less likely to issue GCOs to prospector or defender firms is an empirical question.

We should note here that our focus is on business-level strategy, not corporate-level strategy. Business-level strategy is the way in which a firm competes within an industry, whereas corporate-level strategy includes determining what industries a firm should enter (Beard and Dess 1981; Dent 1990; Hambrick 1983). As such, our strategy measure is calculated separately for each industry-year so as to minimize the risk that it would serve merely as a proxy for financial health or the overall riskiness induced by the industry. For example, while pharmaceutical firms would be considered risky relative to utility firms, there are defenders within the pharmaceutical industry and prospectors within the utility industry.[4]

We test our hypothesis about the effect of a client's business strategy on an auditor's decision to issue a GCO on a sample of 4,322 distressed, firm-year observations in which the firms did not receive a GCO in the previous year. Holding the firms' financial condition constant, we find that prospector firms are significantly more likely than defender firms to receive GCOs. Holding all other firm characteristics constant at their mean values, a firm using the prospector strategy is 1.32 percent more likely to receive a GCO

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[2] Following Knechel (2007), we use the term "business risk audit methodology" in a generic sense, which includes the strategic-systems audit methodology (Peecher et al. 2007).

[3] For evidence of the disadvantages of BRAs, see O'Donnell and Schultz (2005) and Bowlin (2011). Refer to Knechel (2007) for obstacles to BRAs. Refer to Curtis and Turley (2007) for a case study showing that BRAs are perceived to be more judgmental and ambiguous by audit staff, who have difficulty linking the evidence collected under BRAs to financial statement amounts.

[4] A few more examples from our sample include the following: Tesla Motors (TSLA), a prospector, and Tower International, Inc. (TOWR), a defender, both operating in the motor vehicle industry (SIC 3711); Sonus Networks, Inc. (SONS), a prospector, and Datalink Corporation (DTLK), a defender, both operating in the computer integrated systems design industry (SIC 7373).

than a firm following a defender strategy. Given that the baseline probability of receiving a GCO is 1.58 percent, this represents an 83.5 percent relative increase in the likelihood of receiving a GCO.[5] In sensitivity analyses, we find that the going concern results hold when using alternative definitions of financial distress to construct the sample. Firms that receive an adverse opinion on ICFR (i.e., a MWO) are more likely to receive GCOs from an auditor (Goh et al. 2013). One concern worth mentioning here is that our results could be driven by weak ICFR; however, we find that our results are robust when we exclude firms with MWOs.

Although we find that prospectors are more likely to receive GCOs, these GCOs may or may not be warranted. In additional analysis we examine whether business strategy is related to the accuracy of auditors' GCOs. We find that, among a sample of firms that subsequently filed for bankruptcy, prospectors are 22.68 percent less likely to receive a GCO compared to defenders. This suggests that auditors are more prone to Type II errors when auditing prospector clients (i.e., auditors are less able to successfully predict bankruptcy for prospector firms). We also find that business strategy does not significantly affect auditors' Type I error (false positive) rates. One concern is that our measure of strategy may simply be capturing financial distress. We address this concern by using a battery of robustness tests. We find that business strategy is a distinct construct and not merely a proxy for a firm's bankruptcy risk.[6]

AS5 requires auditors to perform an ICFR audit in conjunction with a financial statement audit. Our results indicate that auditors consider a client's business strategy in issuing GCOs, suggesting a client's strategy could also be expected to affect auditor MWOs. In a supplemental analysis, we examine whether business strategy is related to auditor reporting on internal controls. Using a sample of 11,118 firm-year observations, we find that, holding all other firm characteristics constant at their mean values, a firm following the prospector strategy is 2.04 percent more likely to receive a MWO than a firm employing the defender strategy. Given that the baseline probability of receiving a MWO is 3 percent, this represents a 68 percent increase in the likelihood of receiving a MWO.[7] We also find that prospectors have significantly more material weaknesses, as reported by auditors. In addition, prospectors are more likely to have entity-level weaknesses, but not account-level weaknesses, compared to defenders.

Our study links the strategic management and auditing literatures and makes contributions in the following ways. First, prior strategic management literature has mostly focused on the effect of strategy on a firm *per se*, including firm performance (Hambrick 1983), board independence (Gani and Jermias 2006), CEO compensation (Ittner et al. 1997), and management control systems (Langfield-Smith 1997). Our study complements the existing strategic management literature by showing how strategy affects an important stakeholder—auditors. Second, while prior auditing literature has identified a host of individual factors that influence going concern and ICFR opinions, the influence of a firm's business strategy has not yet been considered.[8] Consistent with Bentley et al. (2013) and Higgins et al. (2015), our evidence shows that business strategy is a distinct construct that is greater than the sum of its parts, which exerts an effect on auditor decision making beyond the conventional factors documented in prior auditing literature (e.g., size, complexity, risk). In addition, our study extends Bentley et al. (2013), who find that auditors charge higher fees to prospectors relative to defenders; yet, prospectors are still significantly more likely than defenders to engage in misreporting. After reflecting on this conundrum, the authors conclude that "the higher audit fees (and hence higher audit effort) for prospectors are insufficient to address the riskiness of these clients" (Bentley et al. 2013, 781). Our evidence suggests that auditors appear to be aware of the higher risk associated with prospector firms, and further reduce engagement risk by being more conservative in their professional judgment (i.e., issuing a GCO) in addition to charging higher audit fees.

Our findings are informative to auditors and other stakeholders including investors, creditors, and regulators. For example, the finding that an auditor's going concern reporting accuracy is lower (i.e., more Type II errors) for prospector clients is relevant to auditors in planning and conducting future audits of clients who follow a prospector strategy, especially given that more Type II errors may lead to more litigation (i.e., shareholders are not warned of bankrupt prospectors by a GCO). The analysis of Type I and Type II errors is also useful for investors and creditors, both of whom use GCOs to assess the likelihood of bankruptcy. Equally as relevant is the finding that prospectors are more likely to have material weaknesses in ICFR, and that those weaknesses tend to be at the entity level; such weaknesses can have a more pervasive and serious impact on a firm, thus presenting additional audit risk. Investors and creditors can use the information about a firm's business strategy to help assess its internal control quality.[9] This is

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[5] Calculated as 1.32 percent/1.58 percent = 83.5 percent.

[6] Refer to the "Sensitivity Analyses" section for details about the robustness tests.

[7] Calculated as 2.04 percent/3 percent = 68 percent.

[8] A working paper by Bentley-Goode, Newton, and Thompson (2015) examines the relationship between business strategy and ICFR. Our paper differs in at least two aspects. First, we primarily focus on going concern opinions and corroborate our evidence within a MWO setting. Second, we include additional control variables in our models, such as second-tier auditors, litigation risk, prior restatements, and merger and acquisition, to reduce the likelihood of an omitted correlated variable.

[9] Prior studies show that ICFR information is useful to market participants. For example, weak internal controls have been shown to be associated with negative market reactions (Gupta and Nayar 2007; Beneish, Billings, and Hodder 2008; Hammersley, Myers, and Shakespeare 2008), increases in debt and equity costs (Ashbaugh-Skaife, Collins, Kinney, and LaFond 2009; Dhaliwal, Hogan, Trezevant, and Wilkins 2011; Kim, Song, and Zhang 2011), increases in audit cost (Hogan and Wilkins 2008), and lower accruals quality (Ashbaugh-Skaife, Collins, Kinney, and LaFond 2008; Doyle, Ge, and McVay 2007b).

especially useful for analyzing firms such as IPOs and non-accelerated registrants, which are exempt from Section 404(b) of the Sarbanes-Oxley Act and therefore not subject to an ICFR audit. The PCAOB can use this information to help plan its inspections, and directors of corporate boards can use this information to help identify the optimal control system.

The rest of this paper is organized as follows. The second section contains a literature review and hypothesis development. The third section discusses the research design, while the fourth section describes the sample selection and presents descriptive statistics. The fifth section reports the going concern results, followed by sensitivity analyses in the sixth section. The seventh section provides the material weakness results, and the eighth section presents our conclusions.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Business Strategy

The management literature contains many business strategy typologies that describe how firms compete in their respective markets. For example, Porter (1980) distinguishes between businesses that compete in terms of either price (cost leadership) or quality (product differentiation). While March (1991) identifies business strategies as either exploitative or explorative, Treacy and Wiersema (1995) distinguish between operational excellence, product leadership, and customer intimacy. However, the typology on which we base our business strategy measure is that of Miles and Snow (1978, 2003), who describe three viable business strategies that can exist within the same industry: (1) prospectors, (2) analyzers, and (3) defenders.[10] These three strategies exist along a continuum, with prospectors on one end and defenders on the other. Prospectors are innovative firms that seek new products and exploit market opportunities; they also have a broad product domain and are willing to quickly change their product mix in order to be a leader in an attractive market. Prospectors devote a large portion of their budget to research and development (R&D) and marketing. The large expenditures on R&D allow prospectors to respond to changes and enter new markets quickly. Prospectors maintain flexibility and avoid capital investment in highly mechanized technology that can only be used to produce a certain type of product. This allows prospectors to quickly respond to changes in markets, but it also prevents them from achieving efficiency in their production and distribution activities. Because prospectors focus on identifying new markets to enter rather than slowly penetrating existing markets, their growth is typically sporadic (Miles and Snow 1978, 2003). Finally, because prospectors have diverse operations, control is often decentralized (Miles and Snow 1978, 2003), thereby increasing complexity and risks to operating processes.

Defenders, on the other hand, focus on efficiency in the production and distribution of goods and services, maintain a narrow mix of products or services, and concentrate on gaining a competitive advantage in their narrow market. These firms may produce multiple products, but they will likely be related. For example, Magellan Midstream Partners, L.P. is classified as a defender during our sample period. The firm operates in the refined petroleum transportation business as well as in the storage of refined petroleum, two industries that are very much related. Defenders invest heavily in technology, which in turn improves efficiency. For example, a defender would be much more likely than a prospector to purchase an assembly line capable of producing only one type of product in order to achieve maximum efficiency. In addition, defender firms do not spend heavily on R&D or marketing, limiting their ability to develop new products. Because defenders do not seek to enter new markets but instead focus on slowly penetrating a single market, they exhibit slow but steady growth and low performance volatility. Defenders tend to have strong centralized control systems to promote efficient production and distribution. Finally, defenders tend to have long employee tenure and promote from within their own firms (Bentley et al. 2013).[11]

Analyzers occupy the middle position on the continuum between prospectors and defenders and, as such, exhibit characteristics of both. The existing management literature is in agreement that these three viable strategies are equally likely to perform well and therefore also equally likely to exist in all industries (Conant, Mokwa, and Varadarajan 1990; Miles and Snow 1978, 2003; Snow and Hrebiniak 1980).

We base our measure of strategy on Miles and Snow's (1978, 2003) organizational typology for several reasons. First, the aforementioned typologies exhibit considerable overlaps, meaning that inferences based on one particular organizational typology are likely applicable to other organizational typologies (Dent 1990; Langfield-Smith 1997). Specifically, one can consider Miles and Snow's (1978, 2003) prospectors to be akin to Porter's (1980) product differentiators, March's (1991) explorers, or Treacy and Wiersema's (1995) product leaders. Similarly, one can consider Miles and Snow's (1978, 2003) defenders to be similar to Porter's (1980) cost leaders, March's (1991) exploiters, or Treacy and Wiersema's (1995) operational excellence leaders.[12,13] Second, Miles and Snow's (1978, 2003) organizational typology can be operationalized using publicly

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[10] A fourth strategy, reactors, is not viable.
[11] Examples of firms employing the different strategies can be found in Miles and Snow (1994) or the appendix to Bentley et al. (2013).
[12] Refer to Chenhall (2003, 150) and Langfield-Smith (1997, 211–213) for a discussion on this point.
[13] Supporting this argument, Ittner et al. (1997, 233) characterize all strategy typologies as being on a continuum from cost leaders to differentiators.

available archival data. In contrast, the other aforementioned typologies rely on interviews or surveys of employees and are likely not replicable. Finally, Miles and Snow's (1978, 2003) typology has been validated by numerous studies in various settings such as Hambrick (1983), Segev (1987), Ittner et al. (1997), Bentley et al. (2013), and Higgins et al. (2015).[14] Thus it should be noted that much of our theoretical discussion of prospectors and defenders is applicable to business strategies proposed under other typologies.

Hypothesis Development

AU Section 341 (AICPA 1988) states, "the auditor has a responsibility to evaluate whether there is substantial doubt about the entity's ability to continue as a going concern for a reasonable period of time, not to exceed one year beyond the date of the financial statements being audited." If an auditor believes there is substantial doubt that a client will still be in operation in the near future, then it is the auditor's responsibility to issue a going concern opinion (GCO) to the client.

A priori, it is not clear how business strategy relates to the issuance of GCOs because characteristics within each strategy have opposite impacts on auditors' decisions. On the one hand, firms that follow prospector strategies spend heavily on R&D and marketing to exploit market opportunities, resulting in a higher level of uncertainty in terms of performance (the value of R&D and marketing activities could be worthless if unsuccessful); such firms also display rapid and sporadic growth patterns. Therefore, prospectors have volatile performance records, and it is thus more difficult for auditors to accurately predict their future performance based on historical information. In other words, auditors are less able to ascertain whether prospectors will continue as a going concern within one year of the balance sheet date. Prospectors are also exposed to greater operational (downside) risks, and are less efficient than defenders insofar as they have a higher ratio of employees to sales, as well as higher employee turnover. Taken together, the prospector strategy appears riskier than the defender strategy.[15] Prior research has shown that auditors consider the effect of client business risk on their own business and audit risk (Johnstone 2000); consequently, auditors are likely to be more conservative and reduce their risks by issuing more GCOs for prospector firms (Francis and Krishnan 1999; Rosner 2003; Goh et al. 2013). Alternatively, because R&D and marketing expenditures are discretionary, prospectors are in a better position to cut costs and maintain profitability in the short term.[16] AU Section 341 (AICPA 1988) requires auditors to consider management's plans that are intended to mitigate the effects of adverse conditions or events when issuing GCOs. To the extent that management has plans in place to substantially reduce discretionary expenses like R&D and marketing expenditures, auditors are likely to conclude that substantial doubt about the firm's ability to continue as a going concern is mitigated, and therefore the auditor will not issue a GCO.

Defender firms have more stable profitability and growth patterns and are less likely to incur a loss, leading to a lower likelihood of GCOs by auditors. However, when in financial distress, they are less likely than prospector firms to have a convincing plan to overcome it because they specialize in producing a few products and typically have small profit margins. In other words, because defenders do not invest heavily in R&D or marketing activities, their ability to regain profitability by developing new products and entering new markets is limited. As a result, if demand for defenders' products decrease, then these firms may find it difficult to avoid bankruptcy. AU Section 341 (AICPA 1988) states that auditors should consider whether clients have "substantial dependence on the success of a particular project" or the "need to significantly revise operations" when evaluating their ability to continue as a going concern. To the extent that defenders have a narrow product domain and are less flexible, auditors are more likely to issue GCOs to defender firms. In addition, prior research has shown that defender firms engage in greater accruals-based earnings management than prospector firms (Bentley-Goode, Omer, and Wilde 2013). Insofar as accruals-based earnings management impairs auditors' ability to forecast a firm's future cash flows and thus assess its bankruptcy risk, auditors may be more likely to issue GCOs to defender firms.[17] The decision about whether to issue a GCO has been characterized as ambiguous and difficult (Chow, McNamee, and Plumlee 1987; Carcello and Neal 2003). Accruals-based earnings management increases uncertainty about a firm's true financial condition, and therefore auditors may be more conservative by issuing GCOs more frequently to defenders.

In sum, the relationship between clients' business strategies and auditors' going concern decisions is an empirical question. This leads to our hypothesis, stated in null form:

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[14] As Higgins et al. (2015, 676) note, "The Miles and Snow (1978, 2003) typology is one of the most popular and well-cited theories of strategic types."

[15] Prior literature provides evidence consistent with this argument. For example, Bentley et al. (2013, Table 3) demonstrate that prospector firms are more likely to incur a loss and have a lower return on assets than defenders.

[16] However, prospectors' future success is dependent upon current period R&D and marketing expenditures. Therefore, although a larger proportion of prospectors' expenditures are discretionary and thus more easily cut during a business downturn, prospectors are actually more dependent upon these expenditures compared with defenders.

[17] A good example of poor accounting that prevents a firm and its auditor from assessing its financial condition comes from the 2003 10-K of Sonus Networks, Inc., which, while facing a class action lawsuit, stated that "we lacked adequate internal controls and were therefore unable to ascertain our true financial condition" (Sonus Networks, Inc. 2004).

H1: A client's business strategy is unrelated to the likelihood of receiving a going concern opinion.

RESEARCH DESIGN

To test our hypothesis, we estimate the following probit regression model:

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\begin{aligned}
Pr(GCO_{i,t} = 1) = {} & \alpha_0 + \alpha_1 STRATEGY_{i,t} + \alpha_2 ALTMAN_{i,t} + \alpha_3 SIZE_{i,t} + \alpha_4 CASH_{i,t} + \alpha_5 LEV_{i,t} + \alpha_6 ROA_{i,t} + \alpha_7 OCF_{i,t} \\
& + \alpha_8 CURR_{i,t} + \alpha_9 LAGLOSS_{i,t} + \alpha_{10} MB_{i,t} + \alpha_{11} AGE_{i,t} + \alpha_{12} NEW\_EQUITY_{i,t} + \alpha_{13} NEW\_DEBT_{i,t} \\
& + \alpha_{14} RESTR_{i,t} + \alpha_{15} DISC\_OPER_{i,t} + \alpha_{16} SELL\_ASSETS_{i,t} + \alpha_{17} BIGN_{i,t} + \alpha_{18} TIER2_{i,t} + \alpha_{19} SPEC_{i,t} \\
& + \alpha_{20} OFFICESIZE_{i,t} + \alpha_{21} FEE\_RATIO_{i,t} + \alpha_{22} REPORTLAG_{i,t} + \alpha_{23} MWO_{i,t} + \alpha_{24} SG_{i,t} \\
& + \alpha_{25} CFVOL_{i,t} + \alpha_{26} SALEVOL_{i,t} + Year\ Fixed\ Effects + Industry\ Fixed\ Effects + \varepsilon_{i,t}
\end{aligned}
$$

(1)

Subscripts i and t denote firm and year, respectively. Detailed variable definitions are provided in Appendix A. Standard errors are clustered by firm to control for serial correlation (Peterson 2009). The dependent variable, *GCO,* equals 1 if the client receives a going concern opinion (GCO) in the current year (t), and 0 otherwise. Consistent with previous research, we limit the sample for this test to distressed firms.[18] To ensure that the firms are actually distressed, we require both net income and operating cash flows to be negative (Callaghan, Parkash, and Singhal 2009; Blay and Geiger 2013).[19]

Measuring Business Strategy

The variable of interest is *STRATEGY,* with higher values corresponding to firms that follow the prospector strategy and lower values corresponding to firms that follow the defender strategy. If auditors are more prone to issue GCOs to prospector firms, then the coefficient on *STRATEGY* should be significantly positive. We follow previous literature (e.g., Bentley et al. 2013; Higgins et al. 2015) and use the following six firm characteristics to construct the composite measure *STRATEGY*: (1) the ratio of R&D expense to total sales, (2) the ratio of employees to sales, (3) the one-year sales growth rate, (4) the ratio of selling, general, and administrative expenses to total sales,[20] (5) the standard deviation of the number of employees, and (6) net property, plant, and equipment scaled by total assets.[21]

Consistent with prior research (Ittner et al. 1997; Bentley et al. 2013), we calculate all variables using a rolling average over the previous four years and the current year (i.e., five years in total). We then rank each variable within each industry-year (where industries are defined using two-digit SIC codes). Firms with values of a variable in the highest quintile are assigned a score of 5, while those in the lowest quintile are assigned a score of 1. For each firm-year, we add up the scores for each of the six variables to arrive at the composite measure. The highest possible score is 30 (the prospector end of the strategy spectrum) and the lowest possible score is 6 (the defender end of the strategy spectrum). Refer to Appendix A for additional details.

Control Variables

We include numerous control variables in our model that have been identified as relevant to the GCO decision by prior research. Reynolds and Francis (2001) find that large firms are less likely to file for bankruptcy; therefore, we control for firm size (*SIZE*) measured based on assets. We use Hillegeist, Keating, Cram, and Lundstedt's (2004) adjusted Altman (1968) Z-score (*ALTMAN*) as a proxy for bankruptcy risk. Several additional financial distress control variables are included in the model including leverage (*LEV*), profitability (*ROA*), operating cash flows (*OCF*), the current ratio (*CURR*), whether a firm reported a loss in the prior year (*LAGLOSS*), and a firm's market-to-book ratio (*MB*). We also control for a firm's level of cash and cash equivalents (*CASH*) as we expect that firms with higher cash balances will be less likely to receive GCOs. In addition, the model controls for whether a firm has sold fixed assets (*SELL_ASSETS*), issued equity (*NEW_EQUITY*), or issued new debt (*NEW_DEBT*) in the current year because firms raising money from any of these activities may be less likely to receive GCOs (Mutchler, Hopwood, and McKeown 1997; Behn, Kaplan, and Krumwiede 2001; Geiger and Rama 2003). The model also controls for whether a firm discontinued any of its operations (*DISC_OPER*) because we anticipate that firms with discontinued operations are less likely to file for bankruptcy (Blay and Geiger 2013).

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[18] Auditors typically do not have difficulty identifying distressed firms that are candidates for a GCO, and therefore most research focuses on samples of distressed firms where going concern uncertainty is likely to be an issue (Carson et al. 2013, 354)

[19] Our main results are robust to alternative definitions of financial distress (Table 2).

[20] Hambrick (1983) finds that prospectors have higher marketing expenses relative to defenders.

[21] The last two measures are intended to capture the fact that prospectors will exhibit higher employee turnover and defenders will exhibit higher capital intensity (as a result, this measure is reverse scored). Hambrick (1983) shows that defenders are highly automated and efficient compared with prospectors.

In addition, the model controls for audit firm characteristics. We include *BIGN* and *TIER2* because we expect that Big 4 and second-tier auditors are more likely to issue GCOs to distressed clients (Berglund, Eshleman, and Guo 2015). A control for auditor industry specialization (*SPEC*) is included because Reichelt and Wang (2010) provide evidence that industry specialists are more likely to issue GCOs to their clients. Auditor office size (*OFFICESIZE*) is included in the model because Francis and Yu (2009) show that larger audit offices are more likely to issue GCOs. *REPORTLAG* is included in the model because prior research finds delayed audit reports are positively associated with the likelihood of receiving a GCO (McKeown, Mutchler, and Hopwood 1991; DeFond, Raghunandan, and Subramanyam 2002). We control for the ratio of non-audit service fees to total fees because Blay and Geiger (2013) find that this variable is negatively related to the likelihood of receiving a GCO. Goh et al. (2013) demonstrate that firms with MWOs are more likely to receive GCOs; therefore, we control for whether a firm received a MWO. We also control for sales growth (*SG*), cash flow volatility (*CFVOL*), and sales volatility (*SALEVOL*), following Francis and Yu (2009). Finally, the model includes industry and year fixed effects to control for the possibility that clients in different industries are more likely to receive GCOs or that going concern reporting has changed over time (Carson et al. 2013, 356).[22]

SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

We obtain financial statement data from Compustat, audit data from Audit Analytics, and stock return data from CRSP. Table 1, Panel A outlines the sample selection procedure. In line with prior research in this area, we exclude financial services firms (SIC codes 6000–6999). We include only those firm-years that had both negative net income and negative operating cash flows (Callaghan et al. 2009; Blay and Geiger 2013). In addition, we omit firms that had received a GCO in the previous year, as an auditor's decision to issue a GCO is very different for firms that received a GCO in the prior year[23] (Kida 1980; Carcello and Neal 2003; Geiger and Rama 2003). After removing observations with missing data needed to estimate Equation (1), we are left with a sample of 4,322 firm-years spanning 2000–2013. We winsorize each independent variable at the 1st and 99th percentiles to reduce the influence of outliers.

Table 1, Panel B reports descriptive statistics for the full sample as well as for the prospector and defender groups. Consistent with Bentley et al. (2013) and Higgins et al. (2015), the prospector group consists of firms with a *STRATEGY* score between 24 and 30, while the defender group comprises firms with a *STRATEGY* score between 6 and 12. For the full sample, the median value for *STRATEGY* is 20, indicating a slight bias toward firms following the prospector strategy.[24] We also report the mean and median for prospectors and defenders. Means and medians that are significantly different at the 5 percent level are in bold. In line with prior research (e.g., Bentley et al. 2013), prospectors in this study are smaller (*SIZE*), have lower leverage (*LEV*) and lower profitability (*ROA*), are more likely to incur a loss in the prior year (*LAGLOSS*), and are younger (*AGE*). The two sets of firms do not exhibit significantly different frequencies of GCOs (7.9 percent for prospectors compared to 8.2 percent for defenders). However, prospectors are more likely to be audited by a Big N auditor.

For the sake of brevity, we do not report a correlation matrix. However, we note that the correlation between *GCO* and *STRATEGY* is not significantly different from zero. *STRATEGY* is negatively correlated with *ALTMAN* (−0.40), *ROA* (−0.28), *REPORTLAG* (−0.08), and *AGE* (−0.34) at the 5 percent significance level or less. *STRATEGY* is positively correlated with *CASH* (0.38), *NEW_EQUITY* (0.15), *CURR* (0.20), *BIGN* (0.14), and *CFVOL* (0.31) at the 5 percent significance level or less. None of the correlations are high enough to cause concern of multicollinearity.

RESULTS FOR GOING CONCERN ANALYSIS

Main Results

Table 2 reports the main results. The first column reports the results of estimating a baseline model that excludes *STRATEGY,* whereas the second column reports the results that include *STRATEGY* in the model. The marginal effect on *STRATEGY* is significantly positive (Z-stat. = 2.20), suggesting that auditors are more likely to issue GCOs to clients with a prospector strategy relative to clients with a defender strategy. The results are also economically significant. Given that the baseline probability of receiving a GCO is 1.58 percent,[25] a one standard deviation increase in *STRATEGY* is associated with

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[22] Industries are defined using two-digit SIC codes.

[23] Our results are robust when we use all GCO observations.

[24] Recall that our sample includes firms that have both negative net income and negative operating cash flows. Prospectors are more likely to incur a loss and are less profitable (Bentley et al. 2013, Table 3), so the sample has more prospectors (886 firms) compared with defenders (146 firms). *STRATEGY* is a continuous variable; therefore, firms with a value of 13 for *STRATEGY* are not the same as firms with a value of 23, even though both are classified as analyzers.

[25] The baseline probability ($\widehat{GCO}$) is the probability that an average firm will receive a GCO. This is calculated as the predicted probability that $GCO = 1$ using the mean value of all independent variables (Table 2, Column (2)).

TABLE 1

Sample Selection and Descriptive Statistics

Panel A: Sample Selection

All firm-years on Compustat with non-missing Central Index Key (CIK) 2000–2013	130,754
Less: financial services firms (SIC 6000–6999)	(19,153)
Less: non-distressed firms	(67,789)
Less: firms with a going concern opinion in the prior year	(8,363)
Less: firm-years with missing data needed to estimate Equation (1)	(31,127)
Final Sample for Going Concern Analysis	4,322

Panel B: Descriptive Statistics

			Full Sample			Prospectors (n = 886)		Defenders (n = 146)	
Variable	Mean	Q1	Median	Q3	Std. Dev.	Mean	Median	Mean	Median
GCO	0.074	0.000	0.000	0.000	0.262	0.079	0.000	0.082	0.000
STRATEGY	19.879	17.000	20.000	23.000	4.040	**25.387**	**25.000**	**11.027**	**11.000**
RDS5	1.117	0.077	0.205	0.409	12.663	**3.970**	**0.594**	**0.028**	**0.017**
EMP5	0.013	0.004	0.006	0.010	0.065	**0.028**	**0.011**	**0.004**	**0.003**
REV5	2.448	−0.010	0.132	0.455	58.195	**3.400**	**0.811**	**−0.022**	**−0.012**
SGA5	2.312	0.410	0.694	1.225	22.280	**6.386**	**1.717**	**0.245**	**0.221**
$\sigma(EMP5)$	0.371	0.022	0.058	0.160	1.956	0.225	0.064	0.397	0.056
CAP5	0.143	0.053	0.101	0.183	0.133	**0.091**	**0.068**	**0.301**	**0.261**
ALTMAN	6.019	2.044	5.799	9.652	4.278	**3.909**	**2.963**	**9.498**	**11.019**
SIZE	4.282	3.192	4.182	5.182	1.531	**4.290**	4.300	**4.577**	4.255
CASH	0.356	0.146	0.326	0.542	0.244	**0.468**	**0.471**	**0.169**	**0.115**
LEV	0.150	0.000	0.046	0.216	0.223	**0.128**	**0.012**	**0.211**	**0.149**
ROA	−0.293	−0.382	−0.204	−0.097	0.301	**−0.408**	**−0.311**	**−0.145**	**−0.104**
OCF	−0.174	−0.223	−0.101	−0.041	0.208	**−0.261**	**−0.190**	**−0.063**	**−0.039**
CURR	3.413	1.541	2.458	4.219	2.958	**4.336**	**3.323**	**2.569**	**1.880**
LAGLOSS	0.829	1.000	1.000	1.000	0.377	**0.946**	**1.000**	**0.760**	**1.000**
MB	2.856	0.866	1.703	3.737	6.570	**3.854**	**2.326**	**0.902**	**1.127**
AGE	2.350	1.946	2.303	2.773	0.620	**2.049**	**1.946**	**2.691**	**2.773**
NEW_EQUITY	0.299	0.000	0.000	1.000	0.458	**0.385**	**0.000**	**0.137**	**0.000**
NEW_DEBT	0.205	0.000	0.000	0.000	0.404	**0.152**	**0.000**	**0.342**	**0.000**
RESTR	0.373	0.000	0.000	1.000	0.484	0.348	0.000	0.315	0.000
DISC_OPER	0.141	0.000	0.000	0.000	0.348	**0.080**	**0.000**	**0.205**	**0.000**
SELL_ASSETS	0.536	0.000	1.000	1.000	0.499	**0.493**	**0.000**	**0.582**	**1.000**
BIGN	0.683	0.000	1.000	1.000	0.466	**0.778**	**1.000**	**0.637**	**1.000**
TIER2	0.100	0.000	0.000	0.000	0.301	**0.056**	**0.000**	**0.171**	**0.000**
SPEC	0.302	0.000	0.000	1.000	0.459	0.319	0.000	0.377	0.000
OFFICESIZE	16.757	15.175	16.816	18.253	2.217	**17.116**	**17.384**	**16.193**	**15.951**
FEE_RATIO	0.215	0.041	0.163	0.329	0.205	0.237	0.175	0.211	0.185
REPORTLAG	69.844	54.000	72.000	86.000	28.381	65.778	69.000	69.733	69.500
MWO	0.044	0.000	0.000	0.000	0.206	**0.059**	**0.000**	**0.014**	**0.000**
SG	0.089	−0.197	−0.014	0.213	0.570	**0.384**	**0.165**	**−0.078**	**−0.064**
CFVOL	0.228	0.091	0.148	0.256	0.265	**0.368**	**0.242**	**0.136**	**0.092**
SALEVOL	0.347	0.180	0.278	0.433	0.259	**0.303**	**0.249**	**0.415**	**0.281**

Panel A reports sample selection procedures. Panel B reports the mean, first quartile (Q1), median, third quartile (Q3), and the standard deviation (Std. Dev.) for all variables used in the going concern analysis. The right-hand side of the table displays descriptive statistics for all prospector firms (where *STRATEGY* ≥ 24) and for all defender firms (*STRATEGY* ≤ 12). Means and medians that are significantly different at the 5 percent level across the prospector and defender samples are in bold. All variables are winsorized at the 1st and 99th percentile.
Variable definitions are provided in Appendix A.

TABLE 2

Business Strategy and Going Concern Reporting

Dependent Variable = Pr(*GCO* = 1)

Variable	Pred. Sign	Main Model Excluding *STRATEGY* (1) Marginal Effect [Z-stat.]	Main Model (2) Marginal Effect [Z-stat.]	Alternative Sample 1 (3) Marginal Effect [Z-stat.]	Alternative Sample 2 (4) Marginal Effect [Z-stat.]	Excluding Firms with *MWO* = 1 (5) Marginal Effect [Z-stat.]
STRATEGY	?		0.11%** [2.20]	0.12%*** [2.92]	0.03%** [2.27]	0.10%** [2.12]
ALTMAN	+	0.25%*** [4.54]	0.28%*** [4.87]	0.31%*** [5.91]	0.20%*** [5.15]	0.26%*** [4.48]
SIZE	−	−1.11%*** [−7.44]	−1.12%*** [−7.44]	−0.94%*** [−7.68]	−0.11%*** [−3.92]	−1.15%*** [−7.29]
CASH	−	−3.76%*** [−3.83]	−4.01%*** [−4.10]	−3.99%*** [−4.40]	−0.02% [−0.05]	−3.74%*** [−3.78]
LEV	+	1.73%*** [2.34]	1.58%** [2.14]	1.32%** [2.20]	0.31%** [1.81]	1.91%*** [2.56]
ROA	−	−2.47%*** [−3.29]	−2.41%*** [−3.22]	−2.22%*** [−3.15]	−2.04%*** [−6.16]	−2.31%*** [−2.99]
OCF	−	−2.41%** [−2.20]	−2.26%** [−2.06]	−3.31%*** [−3.51]	−0.42% [−0.92]	−2.01%** [−1.77]
CURR	−	−0.71%*** [−3.43]	−0.68%*** [−3.39]	−0.66%*** [−3.37]	−0.61%*** [−6.48]	−0.66%*** [−3.32]
LAGLOSS	+	1.87%*** [5.01]	1.82%*** [4.84]		0.26%*** [2.93]	1.85%*** [4.76]
MB	−	0.00% [−0.17]	0.00% [−0.16]	−0.01% [−0.61]	−0.02%*** [−3.23]	0.00% [−0.09]
AGE	−	−0.47%* [−1.55]	−0.28% [−0.91]	−0.02% [−0.10]	−0.03% [−0.56]	−0.19% [−0.61]
NEW_EQUITY	−	0.24% [0.66]	0.22% [0.61]	0.18% [0.55]	−0.14%* [−1.34]	0.17% [0.47]
NEW_DEBT	?	−0.22% [−0.66]	−0.18% [−0.55]	−0.44% [−1.62]	0.05% [0.71]	−0.13% [−0.38]
RESTR	−	0.85%*** [2.33]	0.85%*** [2.37]	0.75%*** [2.40]	0.24%*** [2.72]	0.74%** [2.04]
DISC_OPER	−	0.13% [0.31]	0.11% [0.28]	0.09% [0.28]	0.08% [0.89]	0.30% [0.70]
SELL_ASSETS	−	0.71%*** [2.32]	0.71%*** [2.34]	0.59%** [2.27]	0.00% [−0.06]	0.78%*** [2.52]
BIGN	+	−0.71% [−1.23]	−0.76%* [−1.32]	−1.30%*** [−2.44]	−0.24%* [−1.39]	−0.90%* [−1.48]
TIER2	+	−0.011%*** [−2.78]	−0.011%*** [−2.71]	−0.011%*** [−3.01]	−0.002%* [−1.48]	−0.012%*** [−2.79]
SPEC	+	0.90%** [2.26]	0.87%** [2.21]	1.11%*** [3.23]	0.12%* [1.37]	1.03%*** [2.49]
OFFICESIZE	+	0.03% [0.33]	0.03% [0.28]	0.05% [0.68]	−0.04% [−1.71]	0.04% [0.41]
FEE_RATIO	−	−1.93%** [−2.25]	−1.84%** [−2.16]	−1.56%** [−2.03]	−0.34%* [−1.57]	−1.95%** [−2.24]
REPORTLAG	+	0.02%*** [3.68]	0.02%*** [3.68]	0.02%*** [4.74]	0.01%*** [5.31]	0.02%*** [3.52]
MWO	+	2.02%** [2.18]	1.89%** [2.10]	1.61%** [2.12]	0.34%* [1.47]	
SG	−	−1.34%*** [−4.17]	−1.43%*** [−4.51]	−1.52%*** [−4.90]	−0.56%*** [−3.27]	−1.36%*** [−4.14]

(continued on next page)

TABLE 2 (continued)

Dependent Variable = Pr(*GCO* = 1)

Variable	Pred. Sign	Main Model Excluding *STRATEGY* (1) Marginal Effect [Z-stat.]	Main Model (2) Marginal Effect [Z-stat.]	Alternative Sample 1 (3) Marginal Effect [Z-stat.]	Alternative Sample 2 (4) Marginal Effect [Z-stat.]	Excluding Firms with *MWO* = 1 (5) Marginal Effect [Z-stat.]
CFVOL	+	1.63%*** [2.64]	1.35%** [2.18]	1.44%*** [2.42]	1.14%* [1.48]	1.38%** [2.17]
SALEVOL	+	−2.00%*** [−2.68]	−1.76%*** [−2.39]	−1.03%** [−1.66]	−0.41%** [−1.92]	−1.77%*** [−2.33]
Industry Fixed Effects		Included	Included	Included	Included	Included
Year Fixed Effects		Included	Included	Included	Included	Included
n		4,322	4,322	5,190	4,987	4,131
$\hat{GCO}$		1.60%	1.58%	1.44%	0.25%	1.59%
Pseudo R^2		0.336	0.338	0.344	0.465	0.339
Area under ROC Curve		0.901	0.902	0.904	0.948	0.903

*, **, *** Denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. All tests of significance are based on one-tailed tests where a prediction is given; otherwise, they are based on two-tailed tests.
This table reports the results of estimating various specifications of Equation (1) using different subsamples. The first two columns use our main sample. The third column uses a sample where financial distress is defined as having negative retained earnings and two consecutive years of losses. The fourth column uses a sample where financial distress is defined as having a value of Altman's Z-score in the top quintile of the year. The fifth column reports results using the main sample after excluding observations in which the firm reports a material weakness. Marginal effects are reported in lieu of coefficients for ease of interpretation. Marginal effects on dichotomous variables represent a change in probability associated with a change from 0 to 1 in the dichotomous variable. $\hat{GCO}$ is the baseline probability that the dependent variable equals 1.
Refer to Appendix A for variable definitions.

a 28.1 percent ((4.04 × 0.11 percent)/1.58 percent = 28.1 percent) relative increase in the likelihood of receiving a GCO.[26] Stated differently, holding all firm characteristics constant at their mean values, changing strategies from a defender to a prospector is associated with an 83.5 percent relative increase in the likelihood of receiving a GCO.[27] The area under the receiver operating characteristic (ROC) curve is 0.902, suggesting that the model has adequate discriminatory power (Hosmer and Lemeshow 1989). The majority of control variables load with their predicted signs. For example, firms are more likely to receive a GCO if they have higher bankruptcy scores (*ALTMAN*), higher leverage (*LEV*), reported a loss in the prior year (*LAGLOSS*), are audited by an industry specialist (*SPEC*), have longer audit report lag (*REPORTLAG*), received a material weakness opinion (*MWO*), or have higher cash flow volatility (*CFVOL*). Firms are less likely to receive a GCO if they are larger (*SIZE*), have greater cash holdings (*CASH*), higher profitability (*ROA*), higher cash flows from operations (*OCF*), higher current ratios (*CURR*), higher sales growth (*SG*), or pay higher non-audit fees (*FEE_RATIO*). *NEW_EQUITY* and *NEW_DEBT* are not significant, and *SELL_ASSETS* is significantly positive. This may be due to our sample only consisting of firms that have both negative net income and negative operating cash flows. Although the firms issued new equity or new debt during the year, their income and cash flows were still negative as of year's end. Therefore, auditors may not be convinced that these management plans could substantially save the firm from bankruptcy. In the case of selling assets, this may significantly impair the operating ability for the firms in our sample, resulting in a lower likelihood of survival.

Negative net income and negative operating cash flows are strong indicators that a firm is likely in financial distress; therefore, we use these firms as our primary sample. However, this sample might not perfectly capture firms in financial distress. To ensure that our results are not unduly biased by the measurement error in our primary sample, we use alternative measures of financial distress in the third and fourth columns of Table 2. Specifically, the third column reports the results of estimating Equation (1) on a sample of clients with negative retained earnings and two consecutive years of losses (Kaplan and

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[26] To see this, note that the standard deviation of *STRATEGY* is 4.040 (Table 1, Panel B).
[27] Calculated as (((24 − 12) × 0.11 percent)/1.58 percent), where 24 and 12 represent the cutoff values for prospectors and defenders, respectively. 0.11 percent is the marginal effect and 1.58 percent is the baseline probability of receiving a GCO.

Williams 2012). *LAGLOSS* is excluded from this specification since every observation in this sample reports a loss in the previous year. The fourth column reports the results of estimating Equation (1) on a sample of clients with a value of *ALTMAN* in the highest quintile in the year (Goh et al. 2013). Using either alternative sample, we continue to find that the marginal effect on *STRATEGY* is significantly positive.

The last column in Table 2 reports the results of estimating Equation (1) on our main sample after dropping all firm-years in which the firm reports a material weakness (i.e., *MWO* = 1) in order to alleviate concerns that the effect we document is driven by prospectors having weaker internal controls, which would in turn lead to an increased likelihood of GCOs (Goh et al. 2013). We continue to find a significantly positive marginal effect on *STRATEGY*.

Accuracy Analysis

Although we find that prospectors are more prone to receiving GCOs, the question of whether these GCOs are warranted remains unresolved. Thus, we examine the influence of *STRATEGY* on the accuracy of GCOs by estimating the Type I and Type II errors. Specifically, a Type I error occurs when a firm that receives a GCO does not subsequently file for bankruptcy, while a Type II error occurs when a firm that did not receive a GCO subsequently files for bankruptcy. We use the following two probit models to estimate Type I and Type II errors, respectively:

$$\Pr(BANKRUPT_{i,t+1} = 1 | GCO_{i,t} = 1) = \alpha_0 + \alpha_1 STRATEGY_{i,t} + \alpha_2 BIGN_{i,t} + \alpha_3 ALTMAN_{i,t} + \alpha_4 LOGSALE_{i,t} + \alpha_5 DEFAULT_{i,t} + \alpha_6 NYSE_{i,t} + \varepsilon_{i,t} \tag{2}$$

$$\Pr(GCO_{i,t} = 1 | BANKRUPT_{i,t+1} = 1) = \theta_0 + \theta_1 STRATEGY_{i,t} + \theta_2 BIGN_{i,t} + \theta_3 ALTMAN_{i,t} + \theta_4 LOGSALE_{i,t} + \theta_5 DEFAULT_{i,t} + \theta_6 NYSE_{i,t} + \theta_7 BANKLAG_{i,t} + \theta_8 REPORTLAG_{i,t} + \varepsilon_{i,t} \tag{3}$$

Subscripts *i* and *t* denote firm and year, respectively. *BANKRUPT*$_{i,t+1}$ equals 1 if the firm files for bankruptcy within 12 months of the previous balance sheet date, and 0 otherwise. Equation (2) tests whether business strategy influences Type I errors. As such, this model is estimated on a sample of clients who received GCOs in year *t*. Equation (3) tests whether strategy influences Type II errors and is therefore estimated on a sample of clients who subsequently filed for bankruptcy. If the higher frequency of GCOs among prospector firms is unwarranted (a Type I error), then we will observe a significantly negative coefficient on *STRATEGY* in Equation (2). If auditors tend to make more Type II errors when issuing GCOs to prospectors (defenders), then we will observe a significantly negative (positive) coefficient on *STRATEGY* in Equation (3). The control variables for both models follow prior literature on going concern accuracy (Geiger and Raghunandan 2002; Geiger and Rama 2006; Geiger, Raghunandan, and Riccardi 2014; Berglund et al. 2015). Refer to Appendix A for variable definitions.

In constructing the sample to estimate Equation (2), we include all nonfinancial firms that received a GCO in the current year with non-missing data needed to estimate Equation (2) during the 2000–2013 sample period. In constructing the sample to estimate Equation (3), we include all nonfinancial firms that filed for bankruptcy in year *t*+1 with non-missing data needed to estimate Equation (3) during the 2000–2013 sample period.

Table 3 reports the results of the accuracy analysis. Panel A reports the results of estimating Equation (2) on firms that received a GCO, 186 of which subsequently filed for bankruptcy. We first report a baseline model without *STRATEGY*. Consistent with recent research in this area, the marginal effect on *BIGN* is significantly positive, suggesting that larger auditors are less prone to making Type I errors (Geiger and Rama 2006; Berglund et al. 2015). We also observe positive coefficients on both *ALTMAN* and *DEFAULT,* indicating that financial distress predicts future bankruptcies. The second regression reports results when including *STRATEGY* in the model. The coefficient on *STRATEGY* is not significant, suggesting that for firms that received a GCO, business strategy was unrelated to the probability of bankruptcy. In other words, auditors do not appear to make more Type I errors for prospectors compared to defenders.

Table 3, Panel B reports the results of estimating Equation (3) on a sample of firms that filed for bankruptcy within 12 months following the balance sheet date (272 bankrupt firms). We first report a baseline model. Consistent with expectations, firms in greater distress (*ALTMAN*) and firms in default (*DEFAULT*) are significantly more likely to receive a GCO. The second regression in Panel B includes *STRATEGY*. The marginal effect on *STRATEGY* is −1.89 percent and is significant at the 5 percent level (Z-stat. = −2.45). In other words, among firms that subsequently filed for bankruptcy, prospectors are 22.68 percent less likely to receive a GCO compared with defenders.[28] This evidence suggests that due to the nature of prospector strategy, auditors are less able to successfully predict subsequent bankruptcy for prospector firms during the 12 months following the balance sheet date.

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[28] Calculated as (24 − 12) × (−1.89 percent) = −22.68 percent, where 24 and 12 are the cutoff values for prospectors and defenders, respectively.

TABLE 3

Business Strategy and Going Concern Opinion Accuracy

Panel A: Business Strategy and Type I Errors, Dependent Variable = Pr(*BANKRUPT* = 1|*GCO* = 1)

Variable	Pred. Sign	Baseline Marginal Effect	Z-stat.	With *STRATEGY* Marginal Effect	Z-stat.
STRATEGY	?			0.03%	[0.27]
BIGN	+	1.56%*	[1.61]	1.53%*	[1.59]
ALTMAN	+	0.44%***	[3.55]	0.45%***	[3.40]
LOGSALE	−	1.60%***	[5.71]	1.61%***	[5.82]
DEFAULT	+	9.65%***	[3.24]	9.71%***	[3.25]
NYSE	−	−2.56%**	[−1.76]	−2.55%**	[−1.75]
n		2,498		2,498	
n *BANKRUPT*		186		186	
BANKRÛPT		4.18%		4.17%	
Pseudo R^2		0.203		0.203	
Area under ROC Curve		0.821		0.821	

Panel B: Business Strategy and Type II Errors, Dependent Variable = Pr(*GCO* = 1|*BANKRUPT* = 1)

Variable	Pred. Sign	Baseline Marginal Effect	Z-stat.	With *STRATEGY* Marginal Effect	Z-stat.
STRATEGY	?			−1.89%**	[−2.45]
BIGN	+	6.67%	[0.83]	9.44%	[1.19]
ALTMAN	+	3.38%***	[3.88]	2.90%***	[3.24]
LOGSALE	−	−7.97%***	[−3.63]	−9.69%***	[−4.36]
DEFAULT	+	25.01%***	[2.42]	25.70%***	[2.50]
NYSE	−	−3.54%	[−0.39]	−2.25%	[−0.24]
BANKLAG	−	−0.06%**	[−2.13]	−0.06%**	[−1.91]
REPORTLAG	+	0.11%	[0.92]	0.14%	[1.21]
n		272		272	
n *GCO*		186		186	
GĈO		71.28%		71.70%	
Pseudo R^2		0.147		0.164	
Area Under ROC Curve		0.759		0.768	

*, **, *** Denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. All tests of significance are based on one-tailed tests where a prediction is given; otherwise, they are based on two-tailed tests.
Panel A reports the results of estimating Equation (2) on a sample of firms that received going concern opinions (*GCO* = 1). Panel B reports the results of estimating Equation (3) on a sample of firms that filed for bankruptcy within 12 months of the balance sheet date (*BANKRUPT* = 1). Marginal effects are reported in lieu of coefficients for ease of interpretation. Marginal effects on dichotomous variables represent a change in probability associated with a change from 0 to 1 in the dichotomous variable. *GĈO* is the baseline probability that the dependent variable equals 1.
Refer to Appendix A for variable definitions.

SENSITIVITY ANALYSES

Is Business Strategy Another Measure of Financial Health?

The results we document so far are consistent with auditors considering clients' business strategies when making the decision to issue a going concern qualification. However, an alternative explanation is that our proxy for business strategy does not provide auditors with incremental information beyond firm characteristics, which are simply associated with financial distress and subsequent bankruptcy. In this section, we attempt to shed light on this issue by performing a series of tests.

First, we attempt to dissect business strategy into two components using the following linear regression:

$$STRATEGY_{i,t} = \beta_0 + \beta_1 BANKRUPT_{i,t} + \varepsilon_{i,t} \tag{4}$$

All variables are as defined previously. The residual from estimating Equation (4), which we denote as *STRAT_ORTHO,* is our measure of business strategy orthogonal to the *ex post* measure of bankruptcy (*BANKRUPT*). We then re-estimate Equation (1) after replacing our original strategy measure with *STRAT_ORTHO*. If business strategy provides *ex ante* incremental information about bankruptcy risk and auditors consider this information, then we should observe a significantly positive coefficient on *STRAT_ORTHO*.

Second, we re-estimate Equation (1) after including an indicator variable for future bankruptcies in the model (*BANKRUPT*) to test whether *STRATEGY* is subsumed by the *ex post* measure of bankruptcy.

Third, we use a continuous measure of bankruptcy risk (the probability of bankruptcy) using the following probit regression:

$$\Pr(BANKRUPT_{i,t+1} = 1) = \gamma_0 + \sum CONTROLS + Industry\ Fixed\ Effects + Year\ Fixed\ Effects + \varepsilon_{i,t} \tag{5}$$

CONTROLS include all control variables included in the main GCO model (Equation (1)). We use the predicted value from this regression ($BAN\hat{K}RUPT$) as our proxy for the probability of bankruptcy. We then re-estimate Equation (1) after including ($BAN\hat{K}RUPT$) in the model.

Finally, we attempt to show that our measure of business strategy (*STRATEGY*) is a unique construct and is not a simple manifestation of financial distress measures. We do so by estimating a going concern model that includes the six individual components of *STRATEGY*: (1) R&D intensity (*RDS5*), (2) production and distribution efficiency (*EMP5*), (3) revenue growth (*REV5*), (4) marketing expenditures (*SGA5*), (5) organizational stability ($\sigma(EMP5)$), and (6) capital intensity (*CAP5*). Refer to Appendix A for variable definitions. If *STRATEGY* does not provide incremental information beyond the six components arguably related to financial distress, then we should find that the six individual components of strategy are each significantly related to the issuance of GCOs. However, if we find that the individual components of strategy are largely unrelated to the issuance of GCOs, then this provides evidence that *STRATEGY* is a unique construct.

Table 4 reports the results of our sensitivity analyses.[29] The first column reports the results of estimating Equation (1) using a measure of strategy orthogonal to bankruptcy risk. The marginal effect on *STRAT_ORTHO* is significantly positive (Z-stat. = 2.28), which is consistent with our main results. The second column of Table 4 reports the results when including an indicator variable for firms that subsequently filed for bankruptcy. Predictably, *BANKRUPT* is positively associated with GCOs (Z-stat. = 7.22). More importantly, the marginal effect on *STRATEGY* remains positive and significant (Z-stat. = 1.98), indicating that strategy provides incremental information about firms' going concern issues beyond the *ex post* measure of bankruptcy (*BANKRUPT*) and that auditors consider this information when issuing their opinion. The third column reports the results when using a continuous measure of bankruptcy (the probability of bankruptcy) in the model. Again, the marginal effect on *STRATEGY* is significant and positive (Z-stat. = 2.25). Overall, the evidence from the first three columns of Table 4 suggests that business strategy influences an auditor's decision in the issuance of GCOs.

Finally, the fourth column of Table 4 reports the results when replacing *STRATEGY* with its individual components. Of the six components, only organizational stability ($\sigma(EMP5)$) is significantly associated with the issuance of GCOs (Z-stat. = 1.85). All other components are not statistically significant (p-values > 0.10). We therefore conclude that it is unlikely that *STRATEGY* is simply capturing bankruptcy risk via its individual components.

Endogeneity

One concern with our results is that there could be an omitted variable that is correlated with both *STRATEGY* and *GCO* (i.e., an endogeneity problem). However, we believe this is unlikely to be the case. Firms rarely change their strategies because the investment in time, people, money, and other resources required to develop the distinctive competencies, technologies, structures, and management processes needed to pursue a particular strategy is substantial; therefore, firms tend to adjust rather than change their strategies (Snow and Hambrick 1980, 529). We find that, in our sample, 26.21 percent of firm-years do not involve any change in *STRATEGY,* while 33.11 percent of firm-years involve a change of one point (e.g., changing from 30 to 29); only 3.19 percent of firm-years involve a change of three points or more. This empirical evidence is consistent with Bentley et al. (2013) and Higgins et al. (2015). The Pearson correlation coefficient between business strategy and lagged business strategy is 0.92. In light of the relatively stable nature of business strategy, it is unlikely that there is a time-variant omitted variable that could affect both business strategy and the likelihood of receiving a GCO.

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[29] For the purpose of brevity, we do not report the marginal effects on the control variables.

TABLE 4

Going Concern Sensitivity Analysis
Dependent Variable = Pr(*GCO* = 1)

Variable	Pred. Sign	(1) Marginal Effect [Z-stat.]	(2) Marginal Effect [Z-stat.]	(3) Marginal Effect [Z-stat.]	(4) Marginal Effect [Z-stat.]
STRATEGY	?		0.10%** [1.98]	0.11%** [2.25]	
STRAT_ORTHO	?	0.11%** [2.28]			
BANKRUPT	+		15.30%*** [7.22]		
BANK$\hat{}$RUPT	+			4.63%* [1.40]	
RDS5	?				0.07% [0.44]
EMP5	?				0.12% [0.88]
REV5	?				0.00% [0.04]
SGA5	?				0.21% [1.09]
σ(*EMP5*)	?				0.34%* [1.85]
CAP5	?				0.11% [0.86]
Controls		Included	Included	Included	Included
Industry Fixed Effects		Included	Included	Included	Included
Year Fixed Effects		Included	Included	Included	Included
n		4,322	4,322	4,322	4,322
$G\hat{C}O$		1.58%	1.51%	1.63%	1.56%
Pseudo R^2		0.338	0.359	0.339	0.339
Area under ROC Curve		0.902	0.907	0.903	0.902

*, **, *** Denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. All tests of significance are based on one-tailed tests where a prediction is given; otherwise, they are based on two-tailed tests.
This table reports the results of sensitivity analysis. Model (1) uses a measure of business strategy that is orthogonal to bankruptcy risk (*STRAT_ORTHO*). Models (2) and (3) include measures of bankruptcy risk. Model (4) uses the six individual components of strategy in place of the composite measure. Note that we use the within-industry rank of each of the six strategy components in the regression analysis. Marginal effects are reported in lieu of coefficients for ease of interpretation. Marginal effects on dichotomous variables represent a change in probability associated with a change from 0 to 1 in the dichotomous variable. Each model includes all control variables in Equation (1), which are untabulated to save space. $G\hat{C}O$ is the baseline probability that the dependent variable equals 1.
Refer to Appendix A for variable definitions.

Nevertheless, to address the concern that there could be an omitted variable affecting both strategy and audit opinions, we estimate a random effects model and find that the marginal effect on *STRATEGY* remains significantly positive. In addition, one factor that could plausibly affect both business strategy and audit opinions is CEO overconfidence. We therefore test whether our results are robust to controlling for CEO overconfidence. Our measure of overconfidence is based on Schrand and Zechman (2012), who construct two composite measures of overconfidence. We find that our main results are robust to including either of Schrand and Zechman's (2012) measures of CEO overconfidence in our model.

SUPPLEMENTAL ANALYSIS USING MATERIAL WEAKNESS OPINIONS

Regarding the going concern decision setting, our main results support the idea that business strategy significantly affects auditor judgment. In this section, we use another setting that involves considerable auditor judgment in order to provide additional evidence that clients' business strategies affect auditor reporting decisions. Specifically, we examine the decision

about whether a client's internal controls over financial reporting (ICFR) are effective or not. AS5 requires auditors to perform an ICFR audit in conjunction with a financial statement audit, so it could be expected that a client's business strategy also affects an auditor's decision to issue a MWO.

Theoretically, the strategy literature predicts that many of the characteristics of prospector firms can be expected to be related to weaker internal controls[30] (Miles and Snow 1978, 2003; Miller and Friesen 1978; Porter 1980). Specifically, prospector firms typically use longer-term *nonfinancial* performance measures, while defenders use short-term *financial* performance measures (Govindarajan and Gupta 1985; Simons 1987; Abernethy and Lillis 1995; Montemayor 1996; Ittner et al. 1997). Increased reliance on short-term financial performance measures gives managers in defender firms a greater incentive to manipulate financial reports to improve perceived performance. Because of this heightened risk of misreporting, defenders should have stronger ICFR. In addition, prospectors maintain decentralized and flexible controls to facilitate their ability to adapt quickly to market conditions, whereas defenders have centralized and rigid controls to maximize cost efficiency (Miles and Snow 1978, 2003). It is more difficult to establish and enforce sound ICFR for decentralized and flexible control structures, so prospectors are expected to have more ICFR weaknesses. Empirically, Bentley et al. (2013) find that prospectors have more financial statement restatements, implying a material weakness in ICFR (AS5, para. 69, PCAOB 2007). Taken together, the prospector strategy is expected to be associated with weaker ICFR. To the extent that auditors consider business strategy in their MWO decisions, we can expect that prospectors will be more likely to receive a MWO. To examine the effect of strategy on auditors' MWO decision, we estimate the following probit model:

$$\begin{aligned}
MWO_{i,t} = {} & \beta_0 + \beta_1 STRATEGY_{i,t} + \beta_2 NSEG_{i,t} + \beta_3 FOREIGN_{i,t} + \beta_4 MERGER_{i,t} + \beta_5 RESTR_{i,t} + \beta_6 SG_{i,t} + \beta_7 INVT_{i,t} \\
& + \beta_8 SIZE_{i,t} + \beta_9 LOSS_{i,t} + \beta_{10} LAGLOSS_{i,t} + \beta_{11} CFVOL_{i,t} + \beta_{12} SALEVOL_{i,t} + \beta_{13} ALTMAN_{i,t} \\
& + \beta_{14} LAGRESTATE_{i,t} + \beta_{15} LITG_{i,t} + \beta_{16} RESIGN_{i,t} + \beta_{17} BIGN_{i,t} + \beta_{18} TIER2_{i,t} + \beta_{19} AGE_{i,t} + \beta_{20} GCO_{i,t} \\
& + \beta_{21} BDSIZE_{i,t} + \beta_{22} BD\_IND_{i,t} + \beta_{23} BD\_TURN_{i,t} + \beta_{24} ACSIZE_{i,t} + \beta_{25} AC\_TURN_{i,t} + Year\ Fixed\ Effects \\
& + Industry\ Fixed\ Effects + \varepsilon_{i,t}
\end{aligned}$$

(6)

Subscripts i and t denote firm and year, respectively. The dependent variable *MWO* equals 1 if the client receives a SOX 404 material weakness opinion, and 0 otherwise. The variable of interest is *STRATEGY,* as defined previously. Given the previously discussed arguments, we predict that $\beta_1 > 0$. Refer to Appendix A for detailed variable definitions.

The model includes several known determinants of MWOs identified by prior literature. We include measures of firm complexity including the number of segments (*NSEG*), foreign operations (*FOREIGN*), merger and acquisition activity (*MERGER*), and restructuring activity (*RESTR*). We also control for other firm characteristics based on prior literature including firm size (*SIZE*), sales growth (*SG*), firm age (*AGE*), and inventory (*INVT*) (Ashbaugh-Skaife, Collins, and Kinney 2007; Doyle, Ge, and McVay 2007a; U. Hoitash, R. Hoitash, and Bedard 2009; Chen, Eshleman, and Soileau 2016). The model controls for the financial health of the client via indicator variables for losses in the current year (*LOSS*) and prior year (*LAGLOSS*), as well as a bankruptcy score (*ALTMAN*). We follow Ashbaugh-Skaife et al. (2007) and include controls for prior restatement announcements (*LAGRESTATE*) in addition to whether the auditor resigned (*RESIGN*). We control for clients who received a GCO because Goh et al. (2013) revealed that GCOs are positively related to MWOs. Finally, the model controls for the volatility of operating cash flows (*CFVOL*) and sales (*SALEVOL*).

Corporate governance is an important determinant of ICFR quality (Doyle et al. 2007a). Smaller boards are associated with good governance (Yermack 1996; Core, Holthausen, and Larcker 1999), and Johnstone, Li, and Rupley (2011) find that firms that report ICFR material weaknesses have smaller boards. We include the size of the board of directors (*BDSIZE*) in the model. We also control for board independence (*BD_IND*), whether there is board turnover (*BD_TURN*), audit committee size (*ACSIZE*), and whether there is audit committee turnover (*AC_TURN*).[31] In addition, we control for auditor size via *BIGN* and *TIER2,* as prior research has shown that larger auditors provide higher-quality audits (Lennox and Pittman 2010; Eshleman and Guo 2014) and may therefore be more likely to find and report material weaknesses.

Table 5, Panel A reports the sample selection procedures for the MWO sample, and Panel B provides descriptive statistics. We omit financial services firms, firms claiming a SOX 404 exemption, and firms with missing data needed to estimate Equation (6), which leaves us with 11,118 firm-year observations. The median firm has eight board members and three audit

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[30] Several of the arguments about internal controls made by strategy theorists could also apply to ICFR.

[31] There is little evidence for a direct link between corporate governance and business strategy. For example, Felton and Watson (2002a) argue that although boards should guide the implementation of strategy, they cannot really create the strategy; otherwise, there would be a risk of dangerous confusion about who actually runs the business. Felton and Watson (2002a) reported that 36 percent of directors who responded claimed that they did not understand the major strategic risks facing their companies, and that 43 percent could not effectively identify, safeguard, or plan for key risks. Moreover, 33 percent rated their boards as ineffective in terms of shaping long-term strategy (Felton and Watson 2002b).

TABLE 5

Material Weakness Opinion Sample

Panel A: Sample Selection

All firm-years on Compustat with non-missing CIK 2004–2013	89,331
Less: financial services firms (SIC 6000–6999)	(14,605)
Less: firms with a SOX 404b exemption	(3,187)
Less: firm-years with missing data needed to estimate Equation (6)	(60,421)
Final Sample for Material Weakness Opinion Analysis	11,118

Panel B: Descriptive Statistics

	Full Sample					Prospectors (n = 722)		Defenders (n = 804)	
Variable	Mean	Q1	Median	Q3	Std. Dev.	Mean	Median	Mean	Median
MWO	0.049	0.000	0.000	0.000	0.215	**0.087**	**0.000**	**0.025**	**0.000**
NUM_WEAK	0.102	0.000	0.000	0.000	0.657	**0.234**	**0.000**	**0.031**	**0.000**
ENTITY_LVL	0.013	0.000	0.000	0.000	0.115	**0.036**	**0.000**	**0.000**	**0.000**
ACCT_LVL	0.035	0.000	0.000	0.000	0.185	**0.051**	**0.000**	**0.025**	**0.000**
STRATEGY	17.570	15.000	17.000	20.000	3.654	**25.091**	**25.000**	**11.090**	**11.000**
RDS5	0.425	0.007	0.042	0.147	11.341	**3.250**	**0.304**	**0.016**	**0.012**
EMP5	0.008	0.003	0.004	0.007	0.053	**0.030**	**0.007**	**0.004**	**0.003**
REV5	0.858	0.028	0.091	0.196	22.33	**5.700**	**0.423**	**0.036**	**0.035**
SGA5	1.072	0.200	0.313	0.517	20.87	**6.403**	**0.954**	**0.182**	**0.158**
$\sigma(EMP5)$	1.168	0.042	0.161	0.661	4.972	**1.088**	**0.104**	**0.419**	**0.064**
CAP5	0.197	0.072	0.145	0.270	0.170	**0.113**	**0.074**	**0.333**	**0.301**
NSEG	9.655	2.000	7.000	13.000	8.924	**7.925**	**5.000**	**10.571**	**7.000**
FOREIGN	0.577	0.000	1.000	1.000	0.494	0.457	0.000	0.476	0.000
MERGER	0.071	0.000	0.000	0.000	0.257	**0.094**	**0.000**	**0.029**	**0.000**
RESTR	0.338	0.000	0.000	1.000	0.473	0.323	0.000	0.289	0.000
SG	0.104	−0.023	0.075	0.184	0.273	**0.340**	**0.220**	**0.034**	**0.034**
INVT	0.139	0.035	0.109	0.200	0.131	**0.087**	**0.067**	**0.172**	**0.148**
SIZE	5.864	4.420	5.792	7.258	1.991	**5.183**	**4.981**	**5.520**	**5.571**
LOSS	0.318	0.000	0.000	1.000	0.466	**0.633**	**1.000**	**0.228**	**0.000**
LAGLOSS	0.320	0.000	0.000	1.000	0.467	**0.654**	**1.000**	**0.239**	**0.000**
CFVOL	0.122	0.040	0.067	0.118	0.327	**0.360**	**0.177**	**0.072**	**0.059**
SALEVOL	0.263	0.124	0.202	0.321	0.248	**0.306**	**0.248**	**0.259**	**0.190**
ALTMAN	6.173	2.485	6.313	9.648	4.069	**4.379**	**3.743**	**8.076**	**9.069**
LAGRESTATE	0.084	0.000	0.000	0.000	0.277	0.097	0.000	0.081	0.000
LITG	0.378	0.000	0.000	1.000	0.485	**0.373**	**0.000**	**0.301**	**0.000**
RESIGN	0.015	0.000	0.000	0.000	0.120	**0.024**	**0.000**	**0.009**	**0.000**
BIGN	0.712	0.000	1.000	1.000	0.453	**0.715**	1.000	**0.612**	1.000
TIER2	0.102	0.000	0.000	0.000	0.302	**0.086**	**0.000**	**0.134**	**0.000**
AGE	2.831	2.303	2.773	3.296	0.677	**2.448**	**2.398**	**3.033**	**3.045**
GCO	0.027	0.000	0.000	0.000	0.162	**0.073**	**0.000**	**0.011**	**0.000**
BDSIZE	7.850	6.000	8.000	9.000	2.102	**7.443**	7.000	**7.659**	7.500
BD_IND	0.755	0.667	0.778	0.857	0.127	**0.755**	0.778	**0.735**	0.778
BD_TURN	0.089	0.000	0.000	0.000	0.285	0.084	0.000	0.078	0.000
ACSIZE	3.465	3.000	3.000	4.000	0.784	**3.301**	**3.000**	**3.567**	**3.000**
AC_TURN	0.219	0.000	0.000	0.000	0.414	**0.231**	**0.000**	**0.185**	**0.000**

Panel A reports sample selection procedures. Panel B reports the mean, first quartile (Q1), median, third quartile (Q3), and the standard deviation (Std. Dev.) for all variables used in the material weakness analysis. The right-hand side of the table displays descriptive statistics for all prospector firms (where *STRATEGY* ≥ 24) and for all defender firms (*STRATEGY* ≤ 12). Means and medians that are significantly different at the 5 percent level across the prospector and defender samples are in bold. All variables are winsorized at the 1st and 99th percentile.
Variable definitions are provided in Appendix A.

TABLE 6

Material Weakness Opinion Main Results

		Dependent Variable =			
		MWO (1)	*NUM_WEAK* (2)	*ENTITY_LVL* (3)	*ACCT_LVL* (4)
Variable	Pred. Sign	Marginal Effect [Z-stat.]	Coefficient [Z-stat.]	Marginal Effect [Z-stat.]	Marginal Effect [Z-stat.]
STRATEGY	?	0.17%**	0.048***	0.03%***	0.07%
		[2.52]	[2.62]	[3.91]	[1.39]
NSEG	+	−0.07%***	−0.021**	0.00%	−0.05%**
		[−2.35]	[−2.19]	[−0.45]	[−1.96]
FOREIGN	+	0.92%**	0.251**	0.04%	0.87%***
		[2.13]	[1.99]	[0.66]	[2.43]
MERGER	+	−1.06%**	−0.394**	−0.04%	−1.10%***
		[−1.93]	[−2.18]	[−0.43]	[−2.47]
RESTR	+	0.72%**	0.177**	0.04%	0.73%**
		[1.86]	[1.69]	[0.71]	[2.16]
SG	+	0.46%	0.119	0.06%	0.22%
		[0.86]	[0.84]	[1.00]	[0.43]
INVT	+	1.75%	0.476	0.61%***	−0.95%
		[0.90]	[0.89]	[2.39]	[−0.60]
SIZE	?	0.26%*	0.073*	0.05%**	0.01%
		[1.54]	[1.58]	[2.05]	[0.09]
LOSS	+	2.16%***	0.540***	0.18%***	1.62%***
		[4.41]	[4.21]	[2.43]	[3.76]
LAGLOSS	+	−0.85%**	−0.241**	−0.10%**	−0.82%***
		[−2.14]	[−2.09]	[−1.75]	[−2.33]
CFVOL	+	1.46%	0.310	0.07%	0.85%
		[0.99]	[0.84]	[0.33]	[0.64]
SALEVOL	+	0.12%	0.068	0.15%	−0.38%
		[0.12]	[0.25]	[1.04]	[−0.48]
ALTMAN	+	0.03%	0.09	0.00%	0.03%
		[0.56]	[0.58]	[0.29]	[0.71]
LAGRESTATE	+	7.59%***	1.100***	1.41%***	3.90%***
		[11.21]	[10.71]	[9.88]	[7.09]
LITG	?	−0.75%	−0.208	−0.08%	−0.42%
		[−1.27]	[−1.23]	[−0.86]	[−0.88]
RESIGN	+	2.45%**	0.451**	0.13%	1.96%**
		[1.81]	[1.75]	[0.76]	[1.68]
BIGN	+	1.81%***	0.595***	0.13%*	1.35%***
		[2.93]	[2.97]	[1.55]	[2.55]
TIER2	+	2.43%***	0.546***	0.29%**	1.70%**
		[2.61]	[2.55]	[1.99]	[2.14]
AGE	−	−0.25%	−0.057	0.02%	−0.33%*
		[−0.73]	[−0.61]	[0.29]	[−1.36]
GCO	+	1.57%*	0.311*	0.35%**	−0.05%
		[1.36]	[1.34]	[2.08]	[−0.05]
BDSIZE	−	−0.32%***	−0.091***	−0.05%***	−0.12%
		[−2.69]	[−2.71]	[−2.52]	[−1.28]
BD_IND	−	−0.66%	−0.148	−0.06%	−0.56%
		[−0.45]	[−0.36]	[−0.25]	[−0.46]
BD_TURN	+	1.30%**	0.310**	0.04%	0.98%**
		[2.25]	[2.29]	[0.56]	[1.98]
ACSIZE	−	0.01%	0.005	0.00%	−0.03%
		[0.03]	[0.07]	[0.07]	[−0.15]
AC_TURN	+	−0.26%	−0.057	0.25%***	−0.86%**
		[−0.57]	[−0.43]	[3.33]	[−2.19]

TABLE 6 (continued)

		Dependent Variable =			
		MWO (1)	*NUM_WEAK* (2)	*ENTITY_LVL* (3)	*ACCT_LVL* (4)
Variable	Pred. Sign	Marginal Effect [Z-stat.]	Coefficient [Z-stat.]	Marginal Effect [Z-stat.]	Marginal Effect [Z-stat.]
Industry Fixed Effects		Included	Included	Included	Included
Year Fixed Effects		Included	Included	Included	Included
n		11,118	11,118	11,118	11,118
$\hat{Y}$		3.0%		0.20%	2.27%
Pseudo R^2		0.129	0.203	0.184	0.108
Area under ROC Curve		0.776		0.844	0.766
Wald χ^2			17,580.11		

*, **, *** Denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. All tests of significance are based on one-tailed tests where a prediction is given; otherwise, they are based on two-tailed tests.

This table reports the results of estimating various specifications of Equation (6) using different dependent variables. $\hat{Y}$ is the baseline probability that the dependent variable equals 1.

Refer to Appendix A for variable definitions.

committee members. The MWO sample contains larger firms compared to the GCO sample, as indicated by the relatively higher percentage of firms audited by a Big 4 auditor and the average *SIZE*. Univariate analysis of means indicates that prospector firms are more likely to receive a MWO at either the entity level (*ENTITY_LVL*) or account level (*ACCT_LVL*) and have a greater number of material weaknesses (*NUM_WEAK*) compared to defender firms.

Table 6 presents the results of our MWO test. The marginal effect on *STRATEGY* is significantly positive in Column (1) (Z-stat. = 2.52), suggesting that auditors consider clients' business strategies and are more likely to issue MWOs to prospectors. The results are also economically significant. Holding all other variables constant at their means, a prospector firm is 2.04 percent more likely to receive a MWO compared to a defender firm ((24 − 12) × 0.17 percent = 2.04 percent). Given that the baseline probability of receiving a MWO is only 3 percent, this translates to a 68 percent relative increase in the likelihood of receiving a MWO.[32] Consistent with our expectation, firms with foreign operations (*FOREIGN*) and restructuring activities (*RESTR*) are more likely to receive a MWO. Firms with higher-quality auditors (*BIGN* and *TIER2*) are more likely to issue MWOs. In line with Johnstone et al. (2011), we find that firms with larger boards (*BDSIZE*) are significantly less likely to receive MWOs.

Although it is sufficient for an auditor to issue a MWO if the client has one material weakness, in Column (2) of Table 6 we further test whether the number of material weaknesses is different between prospectors and defenders. We use a Poisson regression with *NUM_WEAK* as the dependent variable. The coefficient on *STRATEGY* is significantly positive (Z-stat. = 2.62), suggesting that auditors identify more material weaknesses with prospectors.

Since prospectors tend to have decentralized control, frequent product changes, and high executive turnover, one may expect that the material weaknesses with prospector firms are mostly at the entity level. Thus, we re-estimate Equation (6) using *ENTITY_LVL* (whether the auditor identifies a material weakness at the entity level) as the dependent variable. We follow prior literature in classifying material weaknesses into an entity level or account level (Ge and McVay 2005; Hoag and Hollingsworth 2011). Column (3) of Table 6 shows that the coefficient on *STRATEGY* is significantly positive (Z-stat. = 3.91), suggesting that auditors are more likely to identify entity-level material weaknesses for prospectors. For completeness, we also report the results for account-level material weaknesses in Column (4). We find that auditors are no more likely to identify account-level weaknesses when auditing prospectors. Taken together, the results in Table 6 provide corroborating evidence that auditors consider clients' business strategies when making decisions related to the issuance of MWOs.[33]

CONCLUSION

In this study, we examine whether a firm's business strategy affects the opinions issued by its external auditor. Using the Miles and Snow (1978, 2003) measure of business strategy, we find that firms following a prospector strategy are significantly

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[32] Calculated as ((24 − 12) × 0.17 percent)/3.0 percent = 68 percent.

[33] We also tried omitting all observations in which the client received a going concern opinion and then re-estimating Equation (6). The results (untabulated) are similar to those reported in Table 6.

more likely to receive a going concern opinion than clients following a defender strategy. Furthermore, firms following the prospector strategy are more likely than firms following the defender strategy to receive material weakness opinions. Overall, the evidence in this paper suggests that clients' business strategies influence auditor reporting. The findings in this paper also extend Bentley et al. (2013), who find that, despite being charged higher audit fees, prospector firms are still significantly more likely to engage in misreporting than firms with other business strategies. Our findings suggest that auditors are aware of the increased risk of prospector firms and respond to this risk by being more conservative in their professional judgment and issuing going concern and material weakness opinions to reduce the engagement risk (e.g., litigation and reputational damages).

We also find that, among a sample of firms that subsequently filed for bankruptcy, prospector firms were significantly less likely to receive a GCO. This suggests that, despite auditors' higher propensity to issue GCOs to prospectors, prospector clients are still associated with a higher Type II error rate. Moreover, we find that business strategy is unrelated to Type I error rates.

This study is subject to a few limitations. First, our proxy for a firm's business strategy may measure business strategy with error. This is a limitation of the study insofar as measurement error could cause us to misclassify some firms' business strategies. A second limitation is that in the supplemental analysis, our data show that management's assessment of ICFR significantly overlaps auditors' assessment of ICFR. To the extent that auditors implicitly follow management's assessment of ICFR, our results may not accurately reflect auditors' own judgments. Future research may mitigate these limitations and thus further extend our study.

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APPENDIX A

Variable Definitions
In the Order They Appear

Variable		Definition

Variables Used in Going Concern Analysis

STRATEGY	=	this measure is computed using six measures, following Bentley et al. (2013). Each measure is computed using a five-year rolling average. Then, each of the averages is ranked into quintiles for each industry-year, where industries are defined using two-digit SIC codes. Observations in the highest quintile are given a score of 5, while those in the lowest quintile are given a score of 1. The only exception is capital intensity, which is reverse scored so that firms in the lowest (highest) capital intensity quintile are given a score of 5 (1). Each firm's scores are then added together to create a composite score, which ranges from 30 (prospector) to 6 (defender). The measures are as follows:
RDS5	=	the firm's propensity to search for new products, measured as the ratio of R&D expense (XRD) to sales (SALE);
EMP5	=	production and distribution efficiency, measured as the ratio of employees (EMP) to sales;
REV5	=	firm growth, measured as the percentage change in sales revenue (SALE);
SGA5	=	firm focus on exploiting new products and services, measured as the ratio of SG&A expense (XSGA) to total sales;
$\sigma(EMP5)$	=	organizational stability, measured as the standard deviation of the number of employees (EMP) computed over a five-year period; and
CAP5	=	capital intensity, measured as net PP&E (PPENT) scaled by total assets (AT).
GCO	=	1 if the firm receives a going concern opinion in the current year, 0 otherwise.
ALTMAN	=	Altman's (1968) bankruptcy score as modified by Hillegeist et al. (2004), calculated as: $1000e^X/(1 + e^X)$, where $X = -4.34 - 0.08 \times (\text{WCAP/AT}) + 0.04 \times (\text{RE/AT}) - 0.10 \times (\text{PI} + \text{XINT} - \text{IDIT})/\text{AT} - 0.22 \times (\text{PRCCF} \times \text{CSHO})/\text{LT} + 0.06 \times (\text{SALE/AT})$.
SIZE	=	the natural log of the firm's total assets (AT).
CASH	=	cash and cash equivalents (CHE) scaled by total assets (AT).
LEV	=	leverage, calculated as long-term debt (DLTT) plus debt in current liabilities (DLC), all scaled by total assets (AT). If debt in current liabilities is missing, then we set it equal to 0.
ROA	=	return on assets, calculated as income before extraordinary items (IB) divided by lagged assets (AT).
OCF	=	operating cash flows (OANCF) scaled by lagged assets (AT).
CURR	=	current assets (ACT) divided by current liabilities (LCT).
LAGLOSS	=	1 if the client reported negative net income (NI) in the prior year, 0 otherwise.
MB	=	the market-to-book ratio ((PRCC_F × CSHO)/CEQ).
AGE	=	the natural log of firm age, where firm age is determined by the number of years the firm has data on Compustat since 1950.
NEW_EQUITY	=	1 if the firm issued new equity (SSTK) during the year, 0 otherwise.
NEW_DEBT	=	1 if the firm issued new debt (DLTIS) during the year, 0 otherwise.
RESTR	=	1 if the firm underwent restructuring (RCA) during the year, 0 otherwise.
DISC_OPER	=	1 if the firm reported discontinued operations (DO), 0 otherwise.
SELL_ASSETS	=	1 if the firm sold assets during the year (SPPIV or SRET), 0 otherwise.
BIGN	=	1 if the client had a Big N auditor, 0 otherwise. The Big N include Deloitte, EY, PricewaterhouseCoopers, and KPMG. Before 2002, the Big N also included Arthur Andersen.
TIER2	=	1 if the firm was audited by a second-tier auditor, 0 otherwise. Second-tier auditors include Grant Thornton LLP and BDO USA, LLP.
SPEC	=	1 if the client was audited by an industry specialist, 0 otherwise. A specialist is defined as the audit office with the largest market share in an industry city, where industries are defined using two-digit SIC codes and cities are defined using metropolitan statistical areas, as in Francis et al. (2005).
OFFICESIZE	=	the natural log of the total fees earned by the local audit office.
FEE_RATIO	=	the ratio of non-audit service fees to total fees.
REPORTLAG	=	the number of days between the client's fiscal year-end and the auditor's signature date.
MWO	=	1 if the client received a SOX 404 material weakness opinion, 0 otherwise. For years before 2004, this variable is set equal to 0.
SG	=	percentage change in sales (SALE).
CFVOL	=	standard deviation of cash flows (OANCF) scaled by assets (AT) over the past ten years. We required at least three years of data to calculate this variable.

(continued on next page)

APPENDIX A (continued)

Variable		Definition
SALEVOL	=	standard deviation of sales (SALE) scaled by assets (AT) over the past ten years. We required at least three years of data to calculate this variable.

Variables Used in Going Concern Accuracy Analysis (Excluding Those Defined Above)

BANKRUPT	=	1 if the client declared bankruptcy within one year of the fiscal year-end, 0 otherwise (Data source: WRDS SEC Analytics Suite).
LOGSALE	=	the natural log of the client's sales (SALE).
DEFAULT	=	1 if the client was in technical default on a loan, 0 otherwise (Data source: S&P Capital IQ).
NYSE	=	1 if client was listed on the New York Stock Exchange, 0 otherwise (Data source: CRSP).
BANKLAG	=	the number of days between the client's fiscal year-end date and the 8-K filing that reports the bankruptcy (8-K Items 1.03 and 3.01) (Data source: WRDS SEC Analytics Suite).

Variables Used in Sensitivity Analyses (Excluding Those Defined Above)

STRAT_ORTHO	=	the portion of the business strategy that is orthogonal to bankruptcy. Obtained as the residual from the following linear regression: $STRATEGY_{i,t} = \beta_0 + \beta_1 BANKRUPT_{i,t} + \varepsilon_{i,t}$.
BANK̂RUPT	=	the predicted value of *BANKRUPT*, defined as the predicted value from the following probit regression: $\Pr(BANKRUPT_{i,t} = 1) = \beta_0 + \sum CONTROLS + \varepsilon_{i,t}$, where *CONTROLS* includes all control variables in Equation (1).
NSEG	=	the sum of the number of business and geographic segments.
FOREIGN	=	1 if the firm reported foreign income taxes (TXFO), 0 otherwise.
MERGER	=	1 if the firm was involved in a merger or acquisition (AQS greater than 0) during the year, 0 otherwise.

Variables Used in Material Weakness Analysis (Excluding Those Defined Above)

INVT	=	inventory (INVT) divided by total assets (AT).
LOSS	=	1 if the firm reported negative net income (NI), 0 otherwise.
LAGRESTATE	=	1 if the firm disclosed an accounting restatement in the prior year, 0 otherwise.
LITG	=	an indicator variable equal to 1 if the firm operates in a high-litigation industry (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370–7374), 0 otherwise.
RESIGN	=	1 if the auditor resigned from the audit during the year, 0 otherwise.
BDSIZE	=	the number of directors on the board of directors.
BD_IND	=	the proportion of independent directors on the board of directors.
BD_TURN	=	1 if one or more board members left during the year, 0 otherwise.
ACSIZE	=	The number of directors on the audit committee.
AC_TURN	=	1 if one or more of the audit committee members left during the year, 0 otherwise.
NUM_WEAK	=	the number of material weaknesses the client reports.
ENTITY_LVL	=	1 if the firm-year observation has an entity-level material weakness or more than three account-level material weaknesses, 0 otherwise.
ACCT_LVL	=	1 if the firm-year observation has either one or two account-level material weaknesses, 0 otherwise.

This table contains variable definitions with Compustat mnemonics in parentheses.