

# Audit Reporting for Going-Concern Uncertainty: A Research Synthesis

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**SUMMARY:** In this synthesis we review research on going-concern modified audit opinions (GCOs) and develop a framework to categorize this research. We identify three major areas of research: (1) determinants of GCOs that include client factors, auditor factors, auditor-client relationships, and other environmental factors; (2) accuracy of GCOs; and (3) consequences arising from GCOs. We identify method-related considerations for researchers working in the area and identify future research opportunities.

**Keywords:** going-concern; audit reporting; bankruptcy.

## INTRODUCTION

The global financial crisis starting in 2007 has resulted in a significant increase in company failures and has generated renewed interest in auditor reporting on financially troubled clients. Issues of immediate concern relate to the exceptional risks faced by companies at the height of the liquidity and credit problems during 2007 and 2008 and the role that auditors had to

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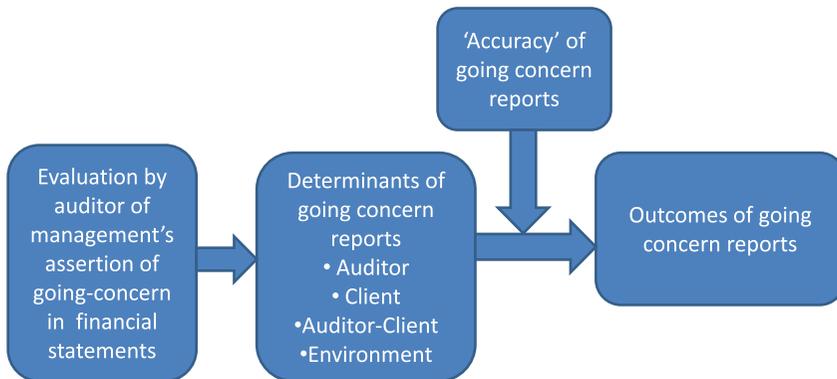
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To facilitate the development of auditing and other professional standards and to inform regulators of insights from the academic auditing literature, the Auditing Section of the American Accounting Association (AAA) decided to develop a series of literature syntheses for the Public Company Accounting Oversight Board (PCAOB). This paper (article) is authored by one of the research synthesis teams formed by the Auditing Section under this program. The views expressed in this paper are those of the authors and do not reflect an official position of the AAA or the Auditing Section. In addition, while discussions with the PCAOB staff helped us identify the issues that are most relevant to setting auditing and other professional standards, the author team was not selected or managed by the PCAOB, and the resulting paper expresses our views (the views of the authors), which may or may not correspond to views held by the PCAOB and its staff.

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**FIGURE 1**  
**Audit Reporting of Going-Concern Uncertainty Research Framework**



play in warning about such problems. These issues have sparked a series of high-level inquiries into the role and effectiveness of independent auditing in the U.S. and internationally (e.g., PCAOB 2011; European Commission 2010; House of Lords 2011; FRC 2011), with particular interest directed to the auditor's assessment and reporting on a company's ability to continue as a going-concern.

The purpose of this review is to synthesize and discuss prior academic literature pertinent to the auditor's decision to issue an opinion modified for going-concern uncertainty (hereafter, GCO). We limit our review to some of the major findings from the auditing literature over the past four decades. We develop a framework that structures our categorization of the main themes explored in the extant literature (Figure 1; see Carson et al. [2012] for a more complete discussion of GCO research). Since early research found that auditors typically do not have difficulty identifying companies in financial distress that may be candidates for a GCO (Kida 1980; Mutchler 1984), most research focuses on the GCO decision for samples of distressed clients where going-concern uncertainty is likely to be an issue. Therefore, in our review of the literature we focus more specifically on the determinants of GCOs (in the second section); the accuracy of GCOs issued, or not issued, by auditors (in the third section); and the consequences of GCOs on clients and auditors (in the fourth section). Based on our synthesis, we also discuss research-method-related considerations pertaining to GCO studies (in the fifth section) and propose avenues for future research (in the sixth section).

### DETERMINANTS OF GCOs

Under SAS No. 59 (AICPA 1988), auditors have a responsibility to evaluate whether there is substantial doubt regarding an entity's ability to continue as a going-concern for a reasonable period of time (not exceeding 12 months from the balance sheet date). Under U.S. Generally Accepted Accounting Principles (GAAP), the going-concern basis for presentation of financial statements is assumed in the absence of information to the contrary. Accordingly, auditors' evaluations are made based on knowledge obtained from audit procedures, and knowledge of conditions and events existing at or prior to the completion of fieldwork that relates to the validity of the going-concern assumption and the use of the going-concern basis for preparing the financial statements. Auditors are required to obtain information about management's plans to mitigate any concerns and assess the likelihood of successful implementation of such plans. If the auditor still has substantial doubt about the entity's ability to continue as a going-concern, the auditor should consider the adequacy

of management's disclosures in the financial statements and the auditor must modify his/her opinion to include an explanatory paragraph outlining the reasons for concern.<sup>1</sup>

Our framework commences with the auditor's assessment of an underlying uncertainty regarding the going-concern assumption, and moves to the observable factors that explain an auditor's decision to issue a GCO. As noted earlier, little extant research solely addresses the auditor's identification of companies experiencing financial pressure such that they may violate the going-concern assumption. The vast majority of archival research to date has attempted to identify which characteristics (client, audit firm, etc.) are associated with auditors rendering a GCO to an audit client.

As a foundation for our subsequent discussion, we first present data on the overall frequency of GCOs issued in the U.S. We then proceed to classify the archival literature on the determinants of GCOs into four broad categories: client factors, auditor factors, auditor-client relationship factors, and environmental factors.<sup>2</sup>

### Overall GCO Rates

We review the overall frequency of GCOs for the period using data from Audit Analytics. Audit Analytics covers all SEC registrants including trust funds, pension funds, and other entities that are not publicly traded, but we are more interested in companies that are publicly traded. In addition, we require information on market capitalization in order to investigate how the GCO frequency varies by company size. We exclude any audit reports that are signed after a company files for bankruptcy (Chapter 7 or Chapter 11). The resulting sample comprises 88,359 company year observations over the 11-year period 2000 to 2010.

The results are reported in Table 1. The overall frequency of GCOs increases from 9.82 percent in 2000 to 13.74 percent in 2001 and 16.57 percent in 2002. Similarly, Geiger et al. (2005) and Sercu et al. (2006) find that auditors are more likely to issue GCOs after December 2001. These findings are consistent with auditors reporting more conservatively following the events of 2001–2002; i.e., the Enron scandal, the indictment of Andersen, and the passage of SOX. It is also consistent with a significant increase in insurance- and other liability-related costs during the post-SOX period (Rama and Read 2006). Since 2002, there has been only a marginal increase in the overall GCO frequency from 16.57 percent in 2002 to 17.01 percent in 2010.

Table 1 further indicates that it is generally the smaller companies that receive GCOs. The GCO frequency is 36.70 percent among companies whose market capitalizations are no greater than \$75 million. In contrast, the GCO frequency is 3.66 percent for companies whose market capitalizations are between \$75 million and \$500 million. Among the very large companies (market capitalizations in excess of \$500 million), the GCO frequency is just 0.33 percent. It is clear from Table 1 that the increase in the GCO frequency is driven by firms whose market capitalizations are less than \$500 million. Among companies whose market capitalizations are no greater than \$75 million, the GCO frequency more than doubles from 20.14 percent in 2000 to 42.08 percent in 2010. Likewise, among companies whose market capitalizations are between \$75 million and \$500 million, the GCO frequency more than triples from 1.25 percent in 2000 to 4.91 percent in 2010. In contrast, there is virtually no change in the GCO frequency among the companies whose market capitalizations are in excess of \$500 million (0.33 percent in both 2000 and 2010).

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<sup>1</sup> If the auditor believes that adequate disclosure is not provided in the financial statements and notes, then he/she is required to issue a qualified report due to a departure from GAAP.

<sup>2</sup> While we focus on archival research, we do not wish to understate the considerable potential for further behavioral and qualitative research on auditor judgment and decision making with respect to GCOs.

**TABLE 1**  
**U.S. Opinions Modified for Going-Concern Uncertainties**  
**(2000–2010)**

| Year  | Full Sample |        | Market Cap ≤ \$75m |        | \$75m < Market Cap ≤ \$500m |       | Market Cap > \$500m |       |
|-------|-------------|--------|--------------------|--------|-----------------------------|-------|---------------------|-------|
|       | n           | GCO%   | n                  | GCO%   | n                           | GCO%  | n                   | GCO%  |
| 2000  | 5,642       | 9.82%  | 2,631              | 20.14% | 1,515                       | 1.25% | 1,496               | 0.33% |
| 2001  | 7,336       | 13.74% | 3,525              | 27.69% | 1,955                       | 1.43% | 1,856               | 0.22% |
| 2002  | 8,336       | 16.57% | 4,158              | 31.77% | 2,145                       | 2.56% | 2,033               | 0.25% |
| 2003  | 8,882       | 15.74% | 3,805              | 34.61% | 2,524                       | 2.85% | 2,553               | 0.35% |
| 2004  | 9,084       | 15.15% | 3,514              | 36.68% | 2,686                       | 2.90% | 2,884               | 0.31% |
| 2005  | 9,156       | 16.52% | 3,444              | 40.71% | 2,730                       | 3.83% | 2,982               | 0.17% |
| 2006  | 8,677       | 16.35% | 3,110              | 41.06% | 2,614                       | 5.20% | 2,953               | 0.20% |
| 2007  | 8,388       | 17.10% | 3,061              | 42.11% | 2,471                       | 5.22% | 2,856               | 0.56% |
| 2008  | 8,372       | 17.44% | 3,645              | 36.63% | 2,316                       | 4.88% | 2,411               | 0.50% |
| 2009  | 7,471       | 17.67% | 3,076              | 39.76% | 1,932                       | 4.50% | 2,463               | 0.41% |
| 2010  | 7,015       | 17.01% | 2,614              | 42.08% | 1,692                       | 4.91% | 2,709               | 0.33% |
| Total | 88,359      | 15.91% | 36,583             | 36.70% | 24,580                      | 3.66% | 27,196              | 0.33% |

Source: Audit Analytics.

n = number of observations; and GCO% = percentage of observations receiving a going-concern audit opinion.

### GCOs and Bankruptcy

Next, we examine the incidence of bankruptcy within our sample. An observation is coded as going “bankrupt” if the firm files for Chapter 7 or Chapter 11 within one year of the audit opinion signature date. This yields a sample of 396 bankrupt observations. We then examine whether the audit opinion issued immediately prior to the bankruptcy filing contained a GCO. Table 2 finds that 60.10 percent of bankruptcy filings are preceded by opinions that are modified for going-concern uncertainties. This is similar to prior studies that examine the audit opinions issued to companies prior to bankruptcy. There are 87,963 surviving observations, i.e., where companies do not file for bankruptcy within one year of the audit opinion date. The proportion of surviving observations that receive GCOs is 15.71 percent. Mirroring the increase in the GCO frequency that was shown in Table 1, Table 2 finds that the proportion of surviving observations that receive GCOs increases from 9.77 percent in 2000 to 16.44 percent in 2002 and 16.83 percent in 2010. Finally, Table 2 shows that the vast majority of firms that receive GCOs do not file for bankruptcy within 12 months of the audit opinion date. In fact, 98.31 percent of firms survive for at least 12 months after they are issued a GCO.

Again, as shown in Table 2, the proportion of bankrupt firms that receive a prior GCO (GCO%) is 60.10 percent—i.e., of soon-to-be-bankrupt firms, 60.10 percent receive GCOs in their final reports prior to bankruptcy. In contrast, the proportion of surviving firms that receive a prior GCO (GCO%) is just 15.71 percent. This is consistent with a self-fulfilling prophecy: a GCO is more likely to be issued to a company that will file for bankruptcy than to a company that will

**TABLE 2**  
**U.S. Opinions Modified for Going-Concern Uncertainties and Corporate Bankruptcies (2000–2010)**

| Year  | Bankrupt Firms |        | Surviving Firms |        | GCO Firms |            |
|-------|----------------|--------|-----------------|--------|-----------|------------|
|       | n              | GCO%   | n               | GCO%   | n         | Surviving% |
| 2000  | 10             | 40.00% | 5,632           | 9.77%  | 554       | 99.28%     |
| 2001  | 9              | 55.56% | 7,327           | 13.69% | 1,008     | 99.50%     |
| 2002  | 25             | 60.00% | 8,311           | 16.44% | 1,381     | 98.91%     |
| 2003  | 40             | 60.00% | 8,842           | 15.54% | 1,398     | 98.28%     |
| 2004  | 38             | 63.16% | 9,046           | 14.95% | 1,376     | 98.26%     |
| 2005  | 28             | 71.43% | 9,128           | 16.36% | 1,513     | 98.68%     |
| 2006  | 34             | 41.18% | 8,643           | 16.26% | 1,419     | 99.01%     |
| 2007  | 75             | 52.00% | 8,313           | 16.78% | 1,434     | 97.28%     |
| 2008  | 83             | 66.27% | 8,289           | 16.95% | 1,460     | 96.23%     |
| 2009  | 27             | 81.48% | 7,444           | 17.44% | 1,320     | 98.33%     |
| 2010  | 27             | 59.26% | 6,988           | 16.83% | 1,192     | 98.66%     |
| Total | 396            | 60.10% | 87,963          | 15.71% | 14,055    | 98.31%     |

Source: Audit Analytics.

An observation is coded as “bankrupt” if the firm files for Chapter 7 or Chapter 11 within one year of the audit opinion date. An observation is coded as “surviving” if the firm does not file for Chapter 7 or Chapter 11 within one year of the audit opinion date.

n = number of observations; GCO% = percentage of firm observations receiving a going-concern audit opinion; and Surviving% = percentage of going-concern observations that do not file for Chapter 7 or Chapter 11 within one year of the audit opinion date.

survive (i.e., 60.10 percent > 15.71 percent).<sup>3</sup> It is also consistent with many auditors’ perceptions of the consequences of issuing GCOs. In a survey by Kida (1980), 61 percent of auditors indicated that the issuance of a GCO could cause problems for a company that actually has no problem.<sup>4</sup>

In the remainder of this section, we review research on the factors that affect an auditor’s decision to issue a GCO. After that, we describe research on the accuracy of GCOs as predictors of future bankruptcy.

### Client Factors

The literature documents a broad variety of client characteristics that are associated with the issuance of GCOs. A major insight from such research is that publicly available financial statement information is an important factor associated with the auditor’s decision to issue a GCO. These financial statement items include profitability, leverage, liquidity, company size, debt defaults, and prior GCO. However, non-financial-statement-related client variables are also important. These include market variables, strategic initiatives, and governance characteristics.

<sup>3</sup> The proportion of GCO firms that do not file for bankruptcy within 12 months of the audit opinion date is 98.31 percent. Although this percentage is high, it is important to note that this does *not* imply that there is no self-fulfilling prophecy effect. The reason that the 98.31 percent statistic is large is that the denominator is the number of firms that receive a prior GCO. In contrast, the 15.71 percent statistic is calculated using the number of surviving firms in the denominator. The number of surviving firms is much larger than the number of GCO firms (87,963 vs. 14,055 in Table 2). Accordingly, 15.71 percent is much smaller than 98.31 percent.

<sup>4</sup> We review the literature on the “self-fulfilling prophecy” in the “Consequences of GCOs” section.

### ***Measures of Financial Distress Obtained from the Financial Statements***

Studies generally find that auditors are more likely to issue GCOs when companies are less profitable (Kida 1980; Mutchler 1985; Dopuch et al. 1987; Altman and McGough 1974; Koh and Killough 1990; Menon and Schwartz 1987; Lee et al. 2005), have higher leverage (Altman and McGough 1974; Kida 1980; Mutchler 1985; Dopuch et al. 1987; Raghunandan and Rama 1995), have lower liquidity (Kida 1980; Mutchler 1985; Menon and Schwartz 1987; Koh and Killough 1990; Koh 1991; Lennox 1999a; Raghunandan and Rama 1995), and are smaller (Dopuch et al. 1987; McKeown et al. 1991; Mutchler et al. 1997; Geiger and Raghunandan 2001). Furthermore, various studies find a highly significant positive association between debt default and the issuance of a GCO (Chen and Church 1992; Carcello et al. 1995, 2000; Mutchler et al. 1997; Carcello and Neal 2000; Geiger and Raghunandan 2001; Behn et al. 2001; Geiger et al. 2005; Bruynseels and Willekens forthcoming). Prior research also documents strong evidence of persistence in GCOs, showing that a company is more likely to receive a GCO in the current year if the company received a GCO in the previous year (Mutchler 1985). The reasons for such persistence have not been thoroughly examined. However, Lennox (2000) demonstrates that there is more reporting persistence for companies that retain their incumbent auditors than for companies that change auditor. This suggests that reporting persistence is at least partly attributable to idiosyncratic characteristics of the relationship between auditor and client.

There are many studies that examine the determinants of bankruptcy and going-concern reporting, and the set of independent variables varies from study to study. It is therefore helpful to learn which variables auditors actually rely on in practice. Mutchler (1984) and LaSalle and Anandarajan (1996) provide survey evidence from auditors about the relative importance of different financial ratios for their going-concern reporting decisions. In Mutchler (1984), the top five ratios are found to be: (1) cash flow from operations/total debt, (2) current assets/current liabilities, (3) net worth/total debt, (4) total debt/total assets, and (5) total liabilities/total assets. In a later study by LaSalle and Anandarajan (1996), the surveyed auditors state that the top five financial ratios are: (1) net worth/total liabilities, (2) cash flows from operations/total liabilities, (3) current assets/current liabilities, (4) total liabilities/total assets, and (5) change in net worth/total liabilities. As the audit environment changes, there is an ongoing need to update evidence on what financial statement variables auditors rely on in practice when making GCO decisions.

### ***Measures of Financial Distress Obtained from Outside the Financial Statements***

Besides financial statement variables, the literature documents other measures of a client's financial condition that are associated with the issuance of GCOs. A first category relates to market variables, such as industry-adjusted returns and return volatility (see, for example, Dopuch et al. 1987; Mutchler and Williams 1990; Bell and Tabor 1991; DeFond et al. 2002; Kausar and Lennox 2011). The general findings from these studies are that auditors are more likely to issue a GCO when companies have lower industry-adjusted returns and higher return volatility. However, extant research has not specifically addressed whether auditors use these market measures in making their GCO determinations or whether these measures are simply a different, yet consistent reflection of distressed companies that receive a GCO from their auditor.

Another category includes contrary factors and mitigating client information. Current audit reporting standards require auditors to evaluate both contrary and mitigating factors when determining whether a GCO is appropriate. The early evidence in Mutchler (1985) and Mutchler et al. (1997) provides little supporting evidence on such factors.<sup>5</sup> However, more recent studies

<sup>5</sup> However, Mutchler et al. (1997) do find a significant relation between extreme negative news releases prior to the opinion and a higher probability of auditors rendering a going-concern modification.

provide evidence that auditors do in fact take account of mitigating factors. Behn et al. (2001) find that two mitigating factors—management plans to issue equity and plans to borrow—are negatively correlated with the issuance of a GCO. Abbott et al. (2003) argue that debtor-in-possession (DIP) financing is a mitigating factor and, consistent with this argument, they find that DIP is negatively associated with the issuance of GCOs. Bruynseels and Willekens (forthcoming) analyze whether a comprehensive set of turnaround activities are regarded by auditors as distress-mitigating factors or as going-concern risk factors. They find that both short-term cash flow potential as well as strategic growth and hence long-term cash flow potential are necessary for strategic turnaround initiatives to have a mitigating impact on the auditor's GCO decision.

### ***Financial Reporting Quality***

Several studies find significant associations between accounting accruals (a proxy for low financial reporting quality) and the auditor's issuance of modified audit reports (see Francis and Krishnan [1999], Bartov et al. [2000], and Bradshaw et al. [2001] for U.S. evidence, and Arnedo et al. [2008] for evidence from Spain). The central premise of these studies is that low financial reporting quality prompts auditors to issue modified audit opinions. However, this inference is disputed by Butler et al. (2004) for two reasons. First, the association between accounting accruals and modified audit opinions is driven by the opinions that are modified for GC issues rather than accounting policy choices. Second, auditing standards do not require an auditor to issue a GCO when a company has poor financial reporting quality. Rather, auditors are required to issue GCO reports when companies are in financial distress.<sup>6</sup> Consistent with their critique, Butler et al. (2004) find that the relation between accounting accruals and GCOs is driven by companies that have large *negative* accruals, and these negative accruals seem to reflect the poor financial condition of GCO companies rather than earnings management.

### ***Corporate Governance***

Carcello and Neal (2000) find that auditors are more likely to issue GCOs to companies that have more independent audit committees. Moreover, in the pre-SOX period Carcello and Neal (2003) find that audit committees with greater independence, greater governance expertise, and lower stockholdings are more effective in shielding auditors from dismissal after the issuance of new GCOs.<sup>7</sup>

### ***Book Values and Liquidation Values***

Under conservative accounting, the book value of assets should reasonably proxy their liquidation value, thereby allowing lenders to better monitor the borrower's ability to repay. According to professional auditing standards, the economic purpose of the GCO is to warn financial statement users that the accounts are prepared on a going-concern basis rather than on a liquidation basis. This warning is important because the liquidation values of assets in bankruptcy are typically less than their book values. The wedge between book values and liquidation values is of interest not only to stockholders, but also to lenders, because as senior claimholders, they are largely concerned

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<sup>6</sup> See Holder-Webb and Cohen (2007) for a discussion of the ethical issues related to the relationship between disclosure, distress, and failure.

<sup>7</sup> SOX requires that all audit committee members be independent. An interesting issue for future research is to extend Carcello and Neal (2003) by examining other audit committee director characteristics, such as financial expertise, tenure, and background.

with their downside risk. That is, lenders need to know whether the realizable value of the company's assets will be sufficient to cover the value of their claims.

Kausar and Lennox (2011) examine whether auditors issue GCOs as a warning to financial statement users that the book values of assets would be higher than their realizable values in the event of bankruptcy. They argue that the issuance of a GCO serves as a warning that, in the event of bankruptcy, the realizable values of assets will be less than their book values. Consistent with this argument, they find that auditors are more likely to issue GCOs when the book values of assets are high relative to their expected realizable values.

### **Auditor Factors**

The decision to issue a GCO is complex and requires judgment by the auditor. Experimental research has considered how factors other than the likelihood of client failure may be evaluated by auditors when considering a GCO. Archival studies have investigated the association between GCOs and auditor characteristics, including an auditor's economic dependence on the client, auditor size, industry specialization, and compensation arrangements.

### ***Auditor Judgment***

The decision to issue a GCO requires considerable auditor judgment. This is an area where experimental research designs can provide insight. Kida (1980) provides a comparison of the beliefs and evaluations of those auditors who qualified their opinions most and those who qualified least. Auditors who qualified least had slightly stronger beliefs that: (1) they would lose the client, (2) the client would sue, and (3) the accounting firm's reputation would be negatively affected. Auditors who qualified most tended to have stronger beliefs regarding the importance of the audit firm's reputation. GCO decisions can also be influenced by an auditor's experience (Lehmann and Norman 2006; Gramling et al. 2011) and by an auditor's prior involvement and beliefs, even where the information is redundant (Joe 2003). Experimental evidence has also indicated that while the audit decision process is affected by prior expectations and prior audit involvement, review processes can be used to influence these effects (Tan 1995).

### ***Economic Dependence***

During the pre-SOX period, the evidence from U.S. studies generally fails to support the idea that client importance significantly affects GCO decisions, as no evidence is found that the size of the client relative to the size of the audit office (Reynolds and Francis 2000), nor total fees from the client divided by total office fees for all clients (Li 2009), is associated with the auditor's propensity to issue a GCO. However Li (2009) finds that the audit fee ratio is positively associated with the auditor's propensity to issue a GCO during the early post-SOX period. In a recent study, Ettredge et al. (2011) find that auditors are less likely to issue first-time GCOs to clients that are important to local audit firm offices (in terms of the proportion of fee revenue to the office) in 2008 (mid-crisis) compared with in 2006 (pre-crisis). Thus, the state of the macro-economy may affect the relationship between economic dependence and GCOs.

There is mixed evidence on the relationship between audit fees and the propensity to issue a GCO. DeFond et al. (2002) find no association between audit fees and GCOs, whereas Geiger and Rama (2003) and Blay and Geiger (forthcoming) find a positive association. As far as non-audit fees are concerned, DeFond et al. (2002) and Geiger and Rama (2003) find no significant association between non-audit fees and audit reporting decisions in the U.S. However, using data from the post-SOX period, Griffin and Lont (2010) and Blay and Geiger (forthcoming) find a significant negative association between the level of non-audit service fees and the likelihood of an

auditor issuing a GCO after controlling for other determinants of the likelihood of an auditor issuing a GCO. In addition, Blay and Geiger (forthcoming) document a negative relation between current GCO decisions and future fee receipts from incumbent audit clients.

Robinson (2008) examines a sample of firms that filed for bankruptcy between 2001 and 2004, and finds a positive association between the level of tax service fees and the likelihood of a GCO; this is consistent with the argument that audit quality improves from information spillover. Callaghan et al. (2009) examine firms that entered into bankruptcy between January 1, 2001, and March 15, 2005, and find no association between the likelihood of a GCO and non-audit fees, audit fees, total fees, or the ratio of non-audit fees to total fees. Taken together, the results suggest that there is no adverse impact of auditors' fees on the propensity of U.S. auditors to issue a prior GCO to firms that subsequently enter bankruptcy.

In evidence outside of the U.S., Hope and Langli (2010) investigate private Norwegian firms and find no significant association between unexpected audit fees and going-concern opinions. Earlier studies in the U.K. (Lennox 1999c) and Australia (Craswell et al. 2002) also find no significant association between non-audit fees and going-concern modifications. However, more recent U.K. studies by Firth (2002) and Basioudis et al. (2008) report a negative association between non-audit fees and the auditor's propensity to issue a modified opinion. Similar findings have also been reported for Australia (Sharma and Sidhu 2001; Basioudis et al. 2009; Ye et al. 2011).

In Australia, Craswell et al. (2002) find that the level of fee dependence on large clients does not affect an auditor's propensity to issue unqualified audit opinions. This finding holds at both the audit firm level and the office level. Using data on Belgian private companies, Vandenberghe et al. (2011) investigate the relationship between audit fee dependence at the individual partner level (the proportion of an audit partner's revenue accounted for by a client) and find no significant association with going-concern reporting.

### ***Auditor Size***

Many studies investigate the association between auditor size and audit opinions, but the results are rather mixed. Mutchler et al. (1997) find no significant difference in GCO rates between Big 6 and non-Big 6 auditors. More recent studies however find that Big 4 clients are significantly less likely to receive GCOs (Reichelt and Wang 2010; DeFond et al. 2011; DeFond and Lennox 2011; Numan and Willekens 2011). These later studies attribute the negative relationship to the fact that Big 4 clients are in better financial condition and are therefore less likely to warrant a GCO. Australian research examining the global financial crisis finds that Big 4 auditors respond earlier than non-Big 4 auditors to the crisis by issuing GCOs more conservatively (Xu et al. forthcoming). Francis and Yu (2009) find that larger offices are more likely to issue GCOs, consistent with their argument that larger offices are better able to detect and issue a GCO.

### ***Industry Specialization***

It has been argued that auditors supply higher quality audits when they are specialists in the client's industry. Reichelt and Wang (2010) find that an auditor who is an industry specialist at both a national and city level is more likely to issue a GCO. However, Minutti-Meza (2011) contends that the results in Reichelt and Wang (2010) are attributable to differences in the characteristics of clients that hire industry specialists and clients that hire non-specialists. He finds no significant differences in GCOs between these two groups of clients when they are matched on industry, size, and performance. Some studies have postulated that the benefits of industry expertise are context specific. For example, Lim and Tan (2008) find that the propensity of industry specialists to issue GCOs increases with the level of non-audit fees, and argue that industry specialists are more likely than non-specialists to benefit from knowledge spillovers arising from the provision of non-audit services.

### ***Auditors' Compensation Arrangements***

Carcello et al. (2000) find no evidence that GCOs are affected by partner compensation plans (small pool/local office profits versus large pool/worldwide firm profits). However, they do find that GCOs are affected by the interaction between partner compensation plans and client size (a measure of economic dependence). Their results suggest that auditors in small-pool firms may be more sensitive to client size than partners in large-pool firms when making GCO decisions. Further research is needed in this area, as there is little evidence on current compensation arrangements during the post-SOX era.

### ***Auditors' Organizational Forms***

Two recent studies examine whether the threat of litigation embedded within the audit firm's organizational form affects its audit reporting decisions. Using a sample of Chinese audits in the period 2000 to 2004, Firth et al. (2012) compare audit reporting practices by auditors that are unlimited liability partnerships and auditors that are limited liability corporations. They find that auditors in unlimited liability partnerships are more likely to issue modified audit opinions than are auditors in limited liability corporations, and conclude that a limited liability regime induces lower auditor reporting conservatism. However, a limitation of this study is that it compares unlimited liability audit *partnerships* with limited liability audit *corporations*. Thus, it is unclear whether the change in audit reporting practices is driven by the switch from the partnership form to the corporate form, or by the switch from unlimited liability to limited liability.

In a related study, Lennox and Li (2012) examine the U.K., where auditors were allowed to switch from unlimited liability partnerships to limited liability partnerships after 2001. Their study is different from Firth et al. (2012) because they examine the switch from unlimited to limited liability, holding constant the audit firm's organizational form (i.e., each audit firm remained as a partnership). Lennox and Li (2012) find no evidence that the switch from unlimited to limited liability partnerships affects the audit reporting decision.

### **Auditor-Client Relationship**

In this section, we consider research that views the auditor-client relationship as dynamic in nature, including switching, opinion shopping, personal relationships, and the time lag in opinion issuance.

### ***Auditor Switching and Opinion Shopping***

Many studies from various countries around the world have found that auditors are more likely to be dismissed in the year after they issue GCOs to their clients (e.g., Chow and Rice 1982; Smith 1986; Geiger et al. 1998; Lennox 2000; Carcello and Neal 2003; Vanstraelen 2003; Chan et al. 2006). This provides strong empirical support for the argument that auditor dismissal represents a potential economic threat to an auditor contemplating a GCO.<sup>8</sup>

A related question is whether such switching behavior is successful in terms of removing the GCO (i.e., "opinion shopping"). Early research in the U.S. generally finds no association between switching to a new auditor and a subsequent improvement in the audit opinion (Chow and Rice 1982; Krishnan 1994; Krishnan and Stephens 1995; Krishnan and Krishnan 1996; Geiger et al. 1998). In contrast, Lennox (2000) argues that earlier findings do not necessarily mean that opinion

<sup>8</sup> However, Hoitash and Hoitash (2009) report fewer dismissals of auditors following GCOs issued during the post-SOX era, suggesting that this threat may be lower in the current U.S. audit environment than in previous periods.

shopping is futile. Rather than comparing observed pre- and post-switch audit reports, he tests for opinion shopping by predicting the opinions that companies would have received had they made switch decisions opposite to those that actually occur. His results indicate that companies would have received less favorable opinions if they had made switch decisions opposite to those actually observed. Further, Carcello and Neal (2003) find that such opinion shopping behavior is more likely to be successful when companies have a higher percentage of affiliated directors on the audit committee. Given the changes in audit committee independence brought about by the requirements of SOX, future research can examine the effect of other corporate governance characteristics that exhibit greater cross-sectional variation during the post-SOX era.

### ***Auditor-Client Tenure***

Geiger and Raghunandan (2002) find a positive association between audit firm tenure and the propensity to issue a GCO prior to bankruptcy. Their results are consistent with the argument that longer time with the client enables the auditor to gain additional insights, allowing the auditor to better report on the going-concern uncertainty. However, these results are also consistent with the argument that financially distressed companies are more likely to change auditor, and therefore companies with going-concern problems tend to have an auditor with shorter tenure.<sup>9</sup>

While data are not available in the U.S., some international studies examine whether the length of tenure between the audit *partner* and the client explains the audit reporting decision. Using data from Australia, where partners are required to sign their audit reports, Carey and Simnett (2006) and Ye et al. (2011) find that long tenure partners are less likely to issue going-concern opinions. However, Knechel and Vanstraelen (2007) find no association between audit partner tenure and going-concern opinions for a sample of private companies in Belgium, an environment where they argue that partner tenure is more likely to have a negative effect on audit quality. Likewise, Ruiz-Barbadillo et al. (2009) find no evidence that mandatory partner rotation in Spain is associated with a higher propensity to issue going-concern opinions. So, the international evidence is mixed with respect to the effects of audit firm tenure and audit partner tenure on going-concern reporting.

The related question is of course: should there be mandatory auditor rotation? This issue has long been of interest to legislators and regulators. Most recently, the PCAOB has revisited the issue of auditor rotation (PCAOB 2011). While studies of audit firm tenure and GCO reporting help to inform the debate about whether mandatory rotation is desirable, it is important to caution that they examine situations in which audit firm rotation is voluntary. The endogenous nature of voluntary rotation makes it difficult to draw clear inferences about the exogenous consequences of mandatory rotation. For example, companies that engage in earnings management or that shop for clean audit opinions are more likely to voluntarily change their audit firms (DeFond and Subramanyam 1998; Lennox 2000), and companies that are more likely to change their audit firms tend to have shorter

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<sup>9</sup> To illustrate this counter-argument, assume that there are 100 bankruptcies, of which 50 companies have been in financial distress for a prolonged period whereas the remaining 50 companies enter bankruptcy without showing prolonged signs of prior financial distress. The former group is a “highly distressed” bankrupt sample, whereas the latter group is a “less-distressed” bankrupt sample. We expect that the frequency of GCOs is higher in the highly distressed sample. These companies are more likely to receive GCOs because their distress was apparent for a prolonged period before they filed for bankruptcy. In contrast, the frequency of GCOs is expected to be lower in the less-distressed sample, as bankruptcy was a more unexpected outcome for these companies. Further, we expect that the likelihood of a prior auditor switch is higher in the highly distressed sample, as these companies were experiencing financial problems well before they filed for bankruptcy. Consequently, this highly distressed sample will also tend to have shorter audit firm tenure. Accordingly, to the extent that bankrupt companies display differing levels of distress prior to failure, it could be that the more distressed companies are more likely to receive GCOs and have shorter audit firm tenure.

audit firm tenure.<sup>10</sup> Therefore, any association between audit firm tenure and GCO reporting could reflect a company's voluntary decision to retain (change) its audit firm rather than the exogenous impact of mandatory rotation. Studies of audit partner rotation must be similarly well designed.

### ***Personal Relationships between Auditors and Clients***

Personal relationships between auditors and clients are difficult to observe due to their sensitive nature. A study by Lennox (2005) attempts to identify connections ("affiliations") between auditors and the management teams of the clients they audit. He defines an executive as being affiliated with the auditor if the executive previously worked for the employer's audit firm, and finds that most affiliations occur when auditors become employees of audit clients ("employment" affiliations); but affiliations can also arise as a result of companies hiring their executives' former audit firms ("alma mater" affiliations). For both types of affiliation, the affiliated companies are significantly less likely than unaffiliated companies to receive GCOs. However, further research is needed to consider the potential impact of connections and affiliations on GCO decisions. Given the difficulty in observing personal relationships, this is an area where a diversity of methodological approaches is likely to be needed to extend and help with interpreting the available evidence from the archival literature.

### ***Audit Report Lag***

Many prior studies find that the likelihood of a GCO is higher in the presence of a longer audit report lag (e.g., McKeown et al. 1991; Carcello et al. 1995; Mutchler et al. 1997; DeFond et al. 2002; Geiger et al. 2005; Li 2009; Blay and Geiger forthcoming). However, the direction of causality underpinning this association is unclear. On the one hand, it could be that going-concern problems lead to delay in issuing an audit opinion, e.g., because the auditor has to do more work to assess the company's ability to continue trading for another 12 months. On the other hand, it could be that a longer lag increases the likelihood of a GCO because the longer an auditor works on an engagement, the more likely it is that the auditor will uncover financial problems (e.g., litigation), casting doubt on the validity of the going-concern assumption.

### **Environmental Factors**

Here we consider research that focuses on the litigation environment, the impact of regulation, and changes in audit market structure.

#### ***Litigation***

Geiger et al. (2006) examine the impact of the Private Securities Litigation Reform Act (PSLRA, U.S. House of Representatives 1995), which reduced the threat of litigation against auditors. They find that the likelihood of a GCO decreased significantly after the enactment of the PSLRA, and the change was particularly pronounced for the Big 6 audit firms. There is also evidence that auditors are more likely to issue GCOs during the post-SOX period (Geiger et al. 2005; Sercu et al. 2006; Nogler 2008; Fargher and Jiang 2008). However, Feldmann and Read (2010) find that the heightened GCO rates subside in later years and revert to their pre-SOX levels by 2006 even after controlling for changes in the probability of firm failure in particular years.

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<sup>10</sup> More up-to-date evidence is needed in order to determine whether the same holds true in today's audit environment.

### ***Auditing Standards***

SAS No. 34 (AICPA 1981) was the first U.S. audit reporting standard to discuss the auditor's responsibility to examine both contrary and mitigating evidence with respect to the going-concern assumption and to issue a qualified report if the auditor had substantial doubt about the ability of the client company to remain in business. However, the auditor's assessment of going-concern was framed in the context of "when information comes to his attention that raises a question about an entity's ability to continue in existence" (SAS No. 34, para. 1) and stopped short of requiring auditors to assess the client's continued viability as part of their audit responsibility. Since SAS No. 59 requires auditors to examine the going-concern assumption in every audit, commenters have suggested that SAS No. 59 increased auditors' responsibilities *vis-à-vis* going-concern (Ellingsen et al. 1989; Bell and Tabor 1991). In addition, SAS No. 59 replaced the former "subject-to" qualified report of SAS No. 34 with a "modified unqualified" report, making it seemingly less punitive to receive a GCO, which would also tend to increase the rate of GCOs under SAS No. 59.

This change in reporting standards led Raghunandan and Rama (1995) to predict that an auditor's propensity to issue GCOs increases after SAS No. 59 became effective, which in turn leads to an increase in the number of firms entering bankruptcy with a prior GCO. Raghunandan and Rama (1995) find that the proportion of bankruptcies with a prior GCO was 39 percent in the pre-SAS No. 59 period and increased to 62 percent in the post-SAS No. 59 period. In a contemporaneous study, Carcello et al. (1995) find that the proportion of bankruptcies with a prior GCO increased from 49 percent in the pre-SAS No. 34 period to 51 percent during the SAS No. 34 period, and then to 55 percent in the SAS No. 59 period. Further, their multivariate analysis reveals that the propensity of a Big N audit firm to issue a GCO to a soon-to-be-bankrupt client increases after the issuance of SAS No. 34, but not after the issuance of SAS No. 59. Carcello et al. (1997) reconcile their earlier results with Raghunandan and Rama (1995), and show that the effect of SAS No. 59 is sensitive to the transition-period treatment and that a significant SAS No. 59 effect can be found only if 1988 financial statements are included in the pre-SAS No. 59 period.

Carcello et al. (2009) examine how a shift away from discretion to rules-based auditing standards affects an auditor's decision to issue going-concern reports. Using a sample of private companies in Belgium, they find that the shift to rules-based standards resulted in an increase in the frequency of GCOs, indicating the importance of reporting standards. However, Martin (2000) points out that accounting and auditing standards are similar across France, Germany, and the U.S., but the GCO frequency is much higher for U.S. companies than for companies in France and Germany. This suggests that other country-specific factors (e.g., the litigation environment and the strength of regulatory oversight) may also have a powerful impact on the auditor's GCO reporting decision.

### ***Regulatory Oversight***

Gramling et al. (2011) focus on the regulatory oversight provided by PCAOB inspections and test whether non-Big 4 auditors are more likely to issue GCOs after they are inspected. They find that auditors receiving unfavorable inspection reports are more likely to issue GCOs subsequent to their inspections. These findings are consistent with regulatory oversight having an impact on the auditor's decision to issue GCOs.

### ***Market Structure and Competition***

DeFond and Lennox (2011) examine changes in the structure of the audit market following the introduction of SOX, and document a large reduction in the number of small audit firms operating

in the public company market following the passage of SOX. DeFond and Lennox (2011) further find that GCOs are more likely to be issued to the clients of exiting audit firms when they are audited by their new successor auditors than when they were audited by the exiting small firm. Contrary to regulators' concerns that there are too few auditors operating in the market, these findings suggest that the reduction in the number of small auditors has actually resulted in higher quality auditing. However, more evidence is needed as to the optimal number of audit firms and the optimal relative sizes of audit firms. A recent study by Numan and Willekens (2011) focuses more directly on the role of competition as distinct from the number of suppliers in the market and argue that it is the level of competition rather than industry specialization *per se* that affects the propensity to issue GCOs. Using U.S. office-level data, they find that auditors are less likely to issue GCOs when they face a high level of competitive pressure from their closest rivals, where "closeness" between auditors is measured in terms of their market shares. Issues of market structure and competition are of great interest to regulators and offer researchers substantial opportunities for future research.

### **"ACCURACY" OF GCOs**

Many studies examine the proportion of firms with GCOs that do not subsequently fail, or the proportion of firms entering bankruptcy without a prior GCO.<sup>11</sup> This approach gives rise to two types of reporting misclassifications. A type I misclassification arises if the auditor issues a GCO and the client does not subsequently fail. A type II misclassification arises when the auditor does not issue a GCO and the client later fails. It is important to bear in mind that both types of misclassifications are based on a statistical decision rule, so the word "misclassification" should not be taken to mean that the audits were necessarily sub-standard.

Each type of misclassification entails potential costs. For example, if an auditor does not issue a GCO and the client later fails, the auditor may incur costs related to litigation and loss of reputation ( $C_\beta$ ). On the other hand, it is potentially costly for an auditor to issue a GCO when a client does not subsequently fail, because the issuance of a GCO to a subsequently viable company may be perceived as unwarranted and cause the client to become disgruntled and result in the switching of auditors, leading to a loss of audit revenue ( $C_\alpha$ ). It is straightforward to show that an auditor's economic incentive to issue a GCO depends on the ratio of these two costs, i.e.,  $C_\beta/C_\alpha$ . When the ratio is higher, the auditor is more likely to issue a GCO because the cost of failing to do so is greater.<sup>12</sup> As depicted in our earlier analysis (see Tables 1 and 2), and as argued by Francis (2011), while the proportion of firms entering bankruptcy without a GCO is high, the number of firms entering bankruptcy without a prior GCO in the population of audits is very low, often representing less than 1 percent of audit engagements. Nonetheless, we note that even this small percentage represents a substantial economic loss to investors.

### **Changes Over Time in the Proportion of Firms Entering Bankruptcy without a Prior GCO**

In general, research has consistently found that since the adoption of SAS No. 59, between 40 and 50 percent of companies going bankrupt in the U.S. did not receive a prior GCO. Despite the GCO not being a definitive prediction of bankruptcy, the issue of interest to regulators, creditors, lawyers, and other financial statement users is why auditors have failed to provide warning of impending bankruptcy for companies going bankrupt.

<sup>11</sup> We note that bankruptcy is only one of the possible outcomes for a firm receiving a going-concern opinion. Other possible outcomes include reorganization, takeover, merger, delisting, etc. (Nogler 1995).

<sup>12</sup> The economic trade-off can be extended to consider strategic behavior by the auditor (Matsumura et al. 1997).

Geiger and Raghunandan (2001) argue that the PSLRA reduced the threat of litigation against auditors and made it less likely for auditors to issue GCOs. Consistent with this expectation, they find that the proportion of bankrupt companies receiving a prior GCO was 59 percent in the pre-PSLRA period and drops to 45 percent in the post-PSLRA period. However, if the PSLRA reduced the threat of litigation against auditors, the reduced pressure did not last long. Consistent with the heightened exposure of auditors following the large financial reporting failures in 2001 and the enactment of the Sarbanes-Oxley Act in 2002 (U.S. House of Representatives 2002), Geiger et al. (2005) find that the proportion of bankrupt firms with a prior GCO was 40 percent in the pre-Enron (i.e., pre-December 2001) period, but increases to 70 percent in the post-Enron period. The time period effect persisted after controlling for financial stress, default status, client size, bankruptcy and reporting lags, industry type, and auditor type. However, in subsequent studies Fargher and Jiang (2008) and Feldmann and Read (2010) find that the initial impact of SOX on increasing GCO rates fades away over time, reverting to pre-SOX levels.

Another explanation of high type II classification error rates is that auditors simply lack the expertise to accurately predict future bankruptcy outcomes. A field study by Arnold et al. (2001) reveals that senior insolvency practitioners perceive that the decision strategies of auditors are very similar to those of junior (novice) insolvency practitioners and that the going-concern decision, as currently made, fails to include the specialized knowledge of expert decision makers.

### **Changes Over Time in the Proportion of Firms that Receive a GCO But Do Not Subsequently Fail**

While there has been a considerable amount of research on firms entering bankruptcy without a prior GCO, there have been comparatively few studies examining firms with a GCO that do not subsequently enter bankruptcy. A partial explanation is the difficulty in determining the subsequent viability status of the GCO recipients. Researchers have difficulty obtaining accurate subsequent viability data because financially troubled firms often do not make timely subsequent filings, or they are quietly acquired by other firms, making an unequivocal determination of viability or failure subsequent to receiving the GCO problematic (Firth 1978; Nogler 1995; Rama et al. 1997).

Prior studies have found that around 80–90 percent of companies receiving a GCO do not fail in the subsequent year, where failure is generally defined in terms of whether the company files for bankruptcy. For example, Mutchler and Williams (1990) find that only 9.2 percent of manufacturing firms receiving a first-time GCO from a Big 8 firm in 1985 and 1986 failed in the following year. Garsombke and Choi (1992) report that 87.7 percent of firms receiving a GCO in the period 1982 to 1985 do not fail in the subsequent year. Geiger et al. (1998) report that in their sample of manufacturing firms with a first-time GCO in 1990–1991, only 19 percent filed for bankruptcy in the subsequent two years. Pryor and Terza (2002) find that 83 percent of the firms receiving first-time GCOs between 1989 and 1993 continued to remain viable through the subsequent fiscal year. In a longitudinal study of auditor GCO decisions and reporting error rates over the 11-year period 1990–2000, Geiger and Rama (2006) find that the long-run average rate of firms that do not fail one year after receiving a GCO is 87.7 percent.

Similar results are reported elsewhere in the world. In the U.K., the proportion of firms that do not fail in the year subsequent to a going-concern opinion is approximately 76–80 percent (Citron and Taffler 1992; Lennox 1999a).<sup>13</sup> In Australia, Carey et al. (2008) find that the proportion of

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<sup>13</sup> Lennox (1999a) identifies failure as entering administration, liquidation, or receivership in the year following the financial period for which the audit report is issued. Citron and Taffler (1992) similarly define failure as placed in receivership, placed in voluntary liquidation by creditors, or being compulsorily wound up in the reporting period following the issue of the audit report modified for going-concern uncertainty.

firms with going-concern opinions that do not subsequently fail is 88 percent based on first-time going-concern recipients from 1994–1997. Carey et al. (forthcoming) report that the proportion of firms with opinions modified for going-concern uncertainty that do not subsequently fail is 90 percent for the 1995–1996 period and 92 percent for the 2004–2005 period. Recent Australian evidence in Xu et al. (2011) reports similar rates for periods up to 2008. Further, Knechel and Vanstraelen (2007) find that the proportion of firms with going-concern opinions that do not subsequently fail is 87 percent for a sample of stressed private companies in Belgium during the period 1992–1996.

Using a different approach, Nogler (1995) follows 157 firms that receive GCOs to the final resolution of their going-concern uncertainty. He finds that 52 firms (33.1 percent) eventually filed for bankruptcy, 28 (17.8 percent) were acquired or merged with other firms, 15 (9.6 percent) no longer filed with the SEC or were taken private, 7 (2.6 percent) were voluntarily liquidated, and 55 (35.0 percent) remained viable and received an unmodified opinion in the subsequent years. Thus, Nogler's (1995) study suggests that the proportion of firms that do not fail after receiving a GCO is considerably lower than those reported in studies examining bankruptcy outcomes over horizons of just one or two years.<sup>14</sup>

In sum, the evidence indicates that the vast majority of firms that receive GCOs do not file for bankruptcy soon thereafter. This is consistent with the evidence shown in Table 2. However, Nogler's (1995) longer-term perspective that has a broader definition of corporate failure suggests much lower survival rates of around 30–40 percent. Since Nogler's (1995) sample is quite dated now, more recent evidence would be useful on the resolution of the going-concern uncertainty for firms receiving GC opinions.

### Explaining the Variation in GCO “Accuracy” Across Auditors

Research has attempted to improve our understanding of how reporting accuracy varies across auditors. Geiger and Rama (2006) examine 1,042 companies that receive first-time GCOs over the 1990–2000 period and 710 bankrupt companies over the 1991–2001 period.<sup>15</sup> They find that both types of going-concern misclassifications are significantly lower for the Big N auditors compared to the non-Big N. Likewise an earlier study by Lennox (1999c) of auditors in the U.K. finds that the Big N auditors have lower misclassification error rates than those of non-Big N auditors, after controlling for the different client characteristics of large and small auditors. Weber and Willenborg (2003) examine small, non-venture-backed IPOs, a segment of the market with the poorest long-run performance and where the prestigious audit firm is often the sole expert present. They find that the positive association between pre-IPO GCOs and post-IPO negative stock delistings is significantly stronger for larger auditors than for smaller auditors. They also find that, for larger auditors, the presence of a pre-IPO GCO is more strongly associated with first-year stock returns and larger auditors are more likely to give such GCOs to their distressed IPO clients.

These aggregate findings are noteworthy, because if the lower proportion of firms entering bankruptcy without a prior GCO for the Big N firms were simply due to a mechanical rule, i.e., a lower threshold for GCOs, then the proportion of firms with GCOs not entering bankruptcy later would be higher for the Big N firms. However, Geiger and Rama (2006) find no difference in misclassification rates between non-Big N national firms and smaller regional firms.

<sup>14</sup> Even some of the 55 viable firms could have had debt defaults, debt restructurings, or major asset sales in order to regain viability, implying that the auditors were not necessarily wrong to issue the GCOs.

<sup>15</sup> The sample of 1,042 first-time GCO companies is taken from the manufacturing sector, whereas the sample of 710 bankrupt companies only excludes companies in the banking, real estate, and other financial services sectors. However, Geiger and Rama (2006, footnote 6) report that their results are substantially the same if the bankrupt sample is restricted to manufacturing firms alone.

Previous studies have also examined the effect of audit tenure (e.g., Geiger and Raghunandan 2002) and non-audit fees (e.g., Robinson 2008; Callaghan et al. 2009) on reporting accuracy. Overall, results do not support the view that long auditor tenure significantly impairs auditor independence or that there is an adverse impact of auditors' fees on the propensity of U.S. auditors to issue a prior GCO to firms that subsequently enter bankruptcy. Clearly, more up-to-date evidence is needed in order to determine whether the same holds true in today's audit environment.

Bruynseels et al. (2011) use a sample of 148 U.S. manufacturing companies that went bankrupt between 1999 and 2002, and find that when management undertakes strategic turnaround initiatives, industry specialist auditors are more likely than non-specialist auditors to issue going-concern opinions to firms entering bankruptcy. Note however that no main effect of industry specialization on the propensity to issue a going-concern opinion is found. In addition, contrary to expectations, Bruynseels et al. (2011) find that in the pre-SOX period, audit firms that use a business risk audit methodology to a greater extent are more likely to have a client entering bankruptcy without a prior GCO than if the client had undertaken operating initiatives to mitigate financial distress.

## CONSEQUENCES OF GCOs

### Consequences for Current Shareholders

To the extent that GCOs reflect an auditor's private information (i.e., information not available to investors), it is expected that the issuance of a GCO would affect the company's stock market valuation. The majority of early studies that examine the market reaction to GCOs in the U.S. found large negative abnormal returns in the weeks preceding the issuance of the GCO, but no response to the issuance of the GCO itself (Chow and Rice 1982; Elliott 1982; Banks and Kinney 1982; Davis 1982; Dodd et al. 1984). Thus, it was concluded that GCOs simply reflect what investors already knew about the company's financial condition and the issuance of the opinion did not, of itself, provide new information. However, Dopuch et al. (1986) find a negative price reaction to the media announcement of a GCO, while Keller and Davidson (1983) conclude from their analysis of trading volume (rather than returns) that the GCO does have information content. Menon and Williams (2010) observe negative excess returns when the GCO is disclosed, and the reaction is more negative if the GCO cites a problem with obtaining financing.

Holder-Webb and Wilkins (2000) examine whether the stock market reacts differently to bankruptcy announcements occurring after SAS No. 59 modified GCOs compared to with those occurring after the former SAS No. 34 qualified GCOs. They find that share price reaction to bankruptcy announcements under SAS No. 59 is less negative than for firms receiving prior unmodified reports, and for firms receiving SAS No. 34 "subject-to" GCOs. They also report that the difference between the going-concern bankruptcy surprise and clean opinion bankruptcy surprise is greater under SAS No. 59 than under SAS No. 34. They conclude that investors have benefitted from the heightened auditor responsibility and reporting requirements of SAS No. 59 compared to those of SAS No. 34.

Several studies attempt to decompose the GCO into an expected component and an unexpected component and generally report significant negative reactions to the issuance of unexpected GCOs (e.g., Loudder et al. 1992; Fleak and Wilson 1994; Jones 1996).<sup>16</sup> In fact, Blay and Geiger (2001)

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<sup>16</sup> Other studies have examined the situation where there is an announcement of a standard opinion after a previous going-concern modified opinion. This is argued to be a less predictable event. Fields and Wilkins (1991) find that the announcement of the removal of a previous going-concern issue can provide information to investors. Similarly, Fargher and Wilkins (1998) find a reduction in risk around the period of the qualification withdrawal announcement.

find a negative market reaction among companies that receive GCOs but eventually survive, but no significant reaction among companies that receive GCOs and subsequently fail. In a more recent study, Blay et al. (2011) find that the GCO is associated with a change in the set of information that the market uses to value the firm. In particular, they find a shift in the market's valuation of a firm away from a dominant focus on net income prior to getting a GCO toward a valuation that is based primarily on balance sheet assets and liabilities after the receipt of a first-time GCO. They conclude that the GCO provides additional company-specific valuation information to the market beyond the information that is already publicly available.

### Consequences for Future Shareholders

Several studies have examined whether the market responds fully to the news of a GCO or whether there is a further downward drift in abnormal returns in the weeks after the opinion's release. Ogneva and Subramanyam (2007) perform tests for market mispricing in the U.S. and Australia around the issuance of GCOs and report no evidence of a market anomaly. However, their U.S. results have been disputed by Kausar et al. (2009), who conclude that U.S. investors underreact to the going-concern announcements, resulting in a downward drift of minus 14 percent over the one-year period subsequent to the GCO. In their additional analyses, Kausar et al. (2009) report that their results are different from those of Ogneva and Subramanyam (2007) due to differences in data sources, treatment of delisted firms, and treatment of outlier values between the two studies.

Interestingly, Willenborg and McKeown (2001) find that the issuance of a GCO prior to the IPO date is positively related to the likelihood of a subsequent stock delisting. Moreover, firms that receive pre-IPO GCOs have less first-day underpricing, which suggests that investors face less *ex ante* uncertainty.

### Consequences for Lenders

#### *A Higher Risk of Bankruptcy*

A GCO has potential consequences for lenders because it can result in the financial demise of a company that would have survived if it had not received a GCO, the "self-fulfilling prophecy" phenomenon. Research on the relation between GCOs and subsequent failures in the U.S. has largely substantiated this concern. That is, GCO firms are significantly more likely to file for bankruptcy (see, for example, Garsombke and Choi 1992; Geiger et al. 1998; Pryor and Terza 2002). Further, Louwers et al. (1999) find that the initial year after receiving a GCO is significantly more risky in terms of bankruptcy filing for a financially troubled firm, and that this risk declines substantially in later years.

Non-U.S. studies in this area, however, yield mixed results. Citron and Taffler (1992, 2001) address this issue in two studies of U.K. firms, spanning the period 1979 through 1993. They identify firms with opinions modified for going-concern uncertainty, match (based on size, year, industry, and financial condition) the going-concern firms with similar non-going-concern firms, and find that the probability of failing in the next period is not significantly different for the two groups of firms. Thus, they conclude that there is no strong evidence of a "self-fulfilling prophecy" in the U.K. Carey et al. (2008) examined Australian firms and find that the probability of bankruptcy for going-concern recipients is no greater than for distressed firms that do not receive opinions modified for going-concern uncertainty. However, Gaeremynck and Willekens (2003) investigate private Belgian companies spanning the period 1995–1996. They find that there is an endogenous relationship between bankruptcy and the type of audit report. Opinions modified for going-concern issues are more likely when firms face financial difficulties, which in turn become more severe after the receipt of a going-concern opinion. This is consistent with evidence presented by Vanstraelen (2003). This evidence suggests that the self-fulfilling prophecy holds in the Belgian setting.

Using a laboratory experiment design, Guiral et al. (2011) examine whether auditors' attitudes toward the evidence in the going-concern setting may be driven by their expectations of the self-fulfilling prophecy effect. They manipulated the order of confirming or disconfirming evidence and the framing of the viability of the firm (viability versus failure), and measured auditors' expectations of the self-fulfilling prophecy. Their results indicate that auditors' expectations of the self-fulfilling prophecy affected their attitudes toward confirming and disconfirming evidence. In particular, auditors with higher expectations of the self-fulfilling prophecy had a greater sensitivity to mitigating evidence and, at the same time, a lower tendency to favor contrary evidence.

Future research can examine the disparate results between studies of U.S. GCOs and heightened bankruptcy rates, and those in other countries. One potential avenue for future research is to examine the legal and institutional structures in the various countries examined, and their similarities and differences compared to those in the U.S.

### ***Liquidation Values of Assets***

Another potential consequence of the GCO is that it provides a warning to lenders about the liquidation values of assets. In fact, SAS No. 59 requires the auditor to disclose that there is a potential wedge between the book values (prepared under the going-concern assumption) and the liquidation values of assets (in the event of bankruptcy). In particular, the template language used in the GCO includes the following wording:

The accompanying financial statements have been prepared assuming that XYZ Company will continue as a going-concern. As discussed in Note [##] to the financial statements, XYZ Company has suffered recurring losses from operations and has a net capital deficiency that raise substantial doubt about the company's ability to continue as a going-concern. *The financial statements do not include any adjustments that might result from the outcome of this uncertainty.* (emphasis added)

Accordingly, Kausar and Lennox (2011) argue that one purpose of the GCO is to warn lenders about the potential difference between the book values and liquidation values of assets. Consistent with this argument, they find that the issuance of a prior GCO has predictive information content with respect to the difference between the book values and the future realizable values of assets. In other words, a GCO provides a warning to lenders that the liquidation values of assets are likely to be substantially less than book values in the event of bankruptcy.

## **RESEARCH-METHOD-RELATED ISSUES**

This section briefly discusses some issues related to research methods that are important considerations for future work in this area. Early studies in the GCO literature used discriminant analysis to estimate their models (e.g., Altman and McGough 1974; McKee 1976; Kida 1980; Levitan and Knoblett 1985; Mutchler 1985; Koh and Killough 1990; Barnes and Huan 1993). However, the suitability of this procedure rests on two assumptions: (1) the explanatory variables have a multivariate normal distribution, and (2) the covariance matrices are equal across the two groups. Unfortunately, the variables that are typically used in studies of bankruptcy and GCO typically violate these two assumptions (Eisenbeis 1977; McLeay 1986; Hamer 1983; Lennox 1999b). Therefore, more recent studies have moved away from using discriminant analysis.

During the 1990s, some authors used a neural network approach to predicting the issuance of GCOs (e.g., Udo 1993; Lenard et al. 1995). The neural network approach is entirely statistical, as the objective is to maximize the model's predictive accuracy. However, there is concern that such a data-driven approach could lead to data mining. More importantly, researchers in accounting are generally more interested in testing theory than in finding a statistical model that has the greatest

predictive power. Accordingly, the neural network approach is not commonly found in recent studies attempting to test hypotheses relating to the GCO decision.

Most studies in the recent literature use logit or probit models to estimate the GCO decision, although logit appears to be used more often. Typically the logit and probit models generate very similar inferences and so there is usually little to choose between the two methods in practice.<sup>17</sup> Unlike discriminant analysis, logit and probit models do not require any assumptions about the distributions of the explanatory variables or the covariance matrices.

However, a cautionary note should be made regarding the small sample sizes that are used in some GCO studies. The small sample behavior of maximum likelihood estimators is for the most part unknown (Long 1997).<sup>18</sup> It is also not possible to provide a general rule as to how large the sample needs to be, as this depends on other characteristics of the data and the model to be estimated.<sup>19</sup> Thus, one should be cautious in interpreting the results of models that are estimated on small samples, particularly when the samples contain relatively few GCOs.

Similarly, care must be taken when interpreting the coefficients on interaction variables. A number of studies have incorporated interaction variables in order to assess whether the impact of one independent variable on the decision to issue a GCO depends on the magnitude of another independent variable (e.g., Carcello et al. 2000; Carcello and Neal 2000). Although interpreting product terms in linear models is straightforward, the intuition from linear models does not necessarily extend to nonlinear models such as logit and probit. We refer the interested reader to Ai and Norton (2003) and Norton et al. (2004) for more on these issues.<sup>20</sup>

## Sample Selection

Studies also differ in their sample selection criteria for identifying distressed firms. Some studies identify distressed companies using current- and/or prior-year distress criteria (e.g., negative net income, current ratio less than 1.0), whereas other studies use a matched sample in which the number of observations with a GCO equals the number without a GCO (e.g., Mutchler 1985; Chen and Church 1992; Behn et al. 2001; Geiger and Rama 2003). In the matched sample design, the observations with no GCO are usually taken from a set of firms that are matched as closely as possible on the level of financial distress, industry, year, and size. These choice-based sampling (i.e., endogenous sample stratification) approaches reduce data collection costs, which is an important consideration for hand-collected data. However, as noted by Blay and Geiger (forthcoming), it is critical that researchers identify non-going-concern sample firms that are sufficiently stressed as to warrant consideration of a GCO from their auditor. Additionally, adjustments may need to be made to the analysis to accommodate over-sampling of the GCO population (Hopwood et al. 1994; Cram et al. 2009). Given the wide disparity in some of the results

<sup>17</sup> The probit and the logit differ in their assumptions about the distribution of the error term. This causes the scaling of the coefficients to be different ( $\beta_{Logit} \approx 1.6\beta_{Probit}$ ). However, the signs of the coefficients, their significance levels, and the predicted probabilities are usually very similar (Long 1997).

<sup>18</sup> The ML estimation properties of consistency, normality, and efficiency are asymptotic and prove to hold as the sample size approaches infinity.

<sup>19</sup> The adequate sample size depends on the characteristics of the model and data (Long 1997): the more parameters in the model, the more the observations are needed; high levels of collinearity between independent variables require more observations; little variation in the dependent variable (for example, very few observations with going-concern modifications) also requires a larger number of observations.

<sup>20</sup> Ai and Norton (2003) show that the magnitude of the interaction effect in nonlinear models does not equal the marginal effect of the interaction term, can be of opposite sign, and its statistical significance is not calculated by standard software. Norton et al. (2004) helpfully provide a program that can easily be used in STATA to rectify this problem.

reported in the extant literature, we believe that more work is needed to understand the ramifications of different sample selection methods.

Finally, most U.S. studies rely on data about publicly traded companies.<sup>21</sup> Additionally, a large number of studies rely on data contained in the Compustat and/or CRSP databases for analyses. Reliance on these databases that include only the larger publicly traded companies would, by definition, exclude smaller public and non-public companies from the analyses. Accordingly, conclusions drawn from empirical studies in the U.S. may be more applicable to the larger public companies than to any other type of firm. Therefore, it remains an empirical issue whether the results from studies relying on databases such as Compustat and/or CRSP carry over to smaller public companies and private companies.

## FUTURE RESEARCH

### Determinants of GCOs

The literature review has identified areas that have been extensively covered, as well as areas in need of additional research. The literature documents a variety of client, auditor, and environmental characteristics that are associated with the issuance of GCOs. Because so much research already documents that publicly available financial-statement-based information is an important determinant of an auditor's decision to issue a GCO, it will be relatively difficult to substantially extend this line of research. However, to the extent that factors such as strategic initiatives, mitigating factors, or other non-financial information have been less studied, research opportunities in this area still exist. For example, different proxies for contrary and mitigating factors (e.g., the development of new products or loss/acquisition of significant customers or contracts) remain to be examined and would extend our knowledge regarding client-specific information associated with auditor GCO decisions. In addition, field studies investigating what auditors are currently evaluating in terms of financial statement items and client contrary and mitigating factors in making their substantial doubt and GCO assessments would be informative to the current debate and would contribute substantially to the extant literature.

The recent academic literature has focused on the auditor-client interaction and related issues of audit quality and independence. The general question is whether auditors appease their clients by not issuing GCOs that are otherwise warranted. Further research on such a basic question is warranted, but the need for better measures of auditor-client ties and interactions are a significant challenge in this area. While research has covered economic dependence, auditor switching, opinion shopping, audit-client tenure, auditor rotation, litigation, market structure, and other issues, a coherent picture is yet to emerge from these studies. Despite the volume of previous research, there are opportunities for qualitative studies to better describe the auditor-client interaction, for experimental and analytic research approaches to consider the strategic nature of the interaction, and for archival research to better identify when auditor-client ties are of more or less of a systemic concern, along with the economic consequences. We also see significant potential for researchers using a field study approach to open up the "black box" regarding what auditors actually do in practice when interacting with a distressed client when they are assessing "substantial doubt" and in their final determination of whether to issue a GCO.

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<sup>21</sup> Audit reporting for private companies has received more attention internationally (e.g., Knechel and Vanstraelen 2007).

## GCOs for Financial Institutions

Following the banking crisis starting in 2007, and subsequent events, an area of particular interest to regulators and standard setters is the role of audit reporting during this period, and particularly in the financial institutions and services industry sector. Prior research on GCOs in the U.S., and internationally, has typically not focused on financial institutions, and yet research on financial institutions during the recent global financial crisis is urgently needed. The House of Lords (2011, para. 138) raises the pertinent issue: “The banking crisis of 2007–2009 raised the question (among others) why there was so little warning that so many banks were in trouble and that the world’s financial system was at risk.” This same report alleges that the complacency of bank auditors was a significant contributory factor with respect to banking failures in the United Kingdom during 2008 and 2009 (House of Lords 2011, para. 167). However, the extant research has not yet adequately addressed these important issues.

For example, at present there is little research on whether auditors are, or should be, reluctant to issue GCOs to financial institutions. There is a concern that the GCO may reduce the public’s confidence in a bank’s ability to continue as a going-concern, and could become a self-fulfilling prophecy (i.e., a “run on the bank”) and precipitate the bank’s failure. While the self-fulfilling prophecy can potentially affect any company that receives a GCO, financial institutions are of particular interest because, due to systemic risk, a bank failure can precipitate a financial crisis throughout the entire financial system. It is an open question whether this affects the willingness of auditors to issue GCOs to financial institutions.

A further consideration is that, because of the systemic risks associated with financial institutions, there is the potential prospect of national and state support for troubled banks and financial institutions in order to prevent them from failing. Do auditors issue fewer GCOs for distressed financial institutions because they believe that state- or federally sponsored support systems will not allow such entities to fail, resulting in a reduced need for GCOs?<sup>22</sup> If so, then what assurances can auditors obtain from governmental agencies that sufficient support will be provided to prevent the bank’s failure? Given that the government is not a disinterested party, how can the auditor become convinced that assurances of financial support from the government are in fact credible? Do governments or bank regulators put any pressure on auditors not to issue GCOs to troubled financial institutions? Do bank regulators and their auditors perceive risks (client-specific and systemic) in a way that is similar to that of auditors of non-financial institutions? If troubled financial institutions, apart from their government backing, would have received a GCO, how, if at all, can this information be communicated to financial statement users? These questions are only a starting point for research investigating financially troubled financial institutions that could be addressed using a range of methodological approaches.

## GCOs for Non-Profit and Governmental Entities

GCOs for municipal and non-profit entities are likely to be increasingly relevant. With the escalating attention toward the high costs of employee pension and other post-retirement benefits, municipal bankruptcies (under Chapter 9 of the U.S. Bankruptcy Code) are being discussed as a possible option.<sup>23</sup> Walsh (2011) states that “policymakers are working behind the scenes to come

<sup>22</sup> For a review of research on bank failure prediction models, refer to Demyanyk and Hasan (2010). For an example of models of audit opinions for financial institutions, refer to Blacconiere and DeFond (1997) and Gaganis and Pasiouras (2007); and for a discussion of recent issues, refer to Humphrey et al. (2009) and Knechel (2009).

<sup>23</sup> Examples of municipal bankruptcies include Jefferson County in Alabama and the City of Central Falls in Rhode Island in 2011, and the City of Stockton and the City of San Bernardino in California in 2012.

up with a way to let states declare bankruptcy and get out from under crushing debts, including the pensions they have promised to retired public workers.” The strategic approach to bankruptcy by governmental entities seeking to avoid liabilities, and other issues related to governmental entities, such as the nature of failure and the role of the GCO opinion in this setting, provide potential for more research on GCO decisions in this context.

In tough economic times, non-profit organizations are hit particularly hard and are increasingly likely to consider bankruptcy and liquidation. Strom (2009) notes that “experts in the field say it [non-profit bankruptcy] has become more common as nonprofits have been pressured by donors to operate more like businesses.” While bankruptcies, and related litigation against the external auditor, are comparatively rarer in the non-profit sector, such events do occur and can be quite costly to auditors.<sup>24</sup> GCOs for municipal and non-profit entities are likely to be increasingly relevant, yet there is relatively little research related to GCOs for such entities. Audit opinions for entities other than for-profit public corporations represent fruitful avenues for future research.

### “Accuracy” of GCOs

We expect that there will be continuing interest from market participants, regulators, and standard setters in research that examines the accuracy of GCOs, particularly the incidence of firms that fail without a prior GCO. There is also ongoing interest with respect to changes in reporting accuracy over time, and the factors associated with reporting accuracy and changes in reporting accuracy. This includes the areas of research examining both type I and type II misclassifications, and the factors associated with these misclassifications. We suggest that there is value in replication across time; the extension of research in this area can potentially come from expanding the types of samples, adding greater variety in the approaches to measuring when a company no longer is a “going-concern,” considering alternate definitions of the meaning and accuracy of GCOs, and greater consideration of how situations leading to the GCO are resolved. Novelty in approach should be encouraged to help deepen our understanding of the auditor decision process in assessing going-concern uncertainty, and the resulting ability to accurately assess and report timely on going-concern uncertainty.

### Outcomes of GCOs

Our framework distinguishes between examining the accuracy of a GCO and opening the research horizon to more broadly consider the consequences of GCOs. Research could consider in more detail the range of outcomes that can occur to resolve a particular type of uncertainty and could better consider the outcomes following going-concern uncertainties over the longer term. Recent research has begun to consider implications of GCOs for how financial reporting information is interpreted under the going-concern assumption relative to the values of assets and liabilities for companies for whom the going-concern assumption ceases to be valid (e.g., Blay et al. 2011; Kausar and Lennox 2011). Future research can examine issues such as how analysts and other market participants incorporate a GCO in their interpretation of other information.

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<sup>24</sup> For example, Arthur Andersen paid out \$217 million related to the failure of Baptist Foundation of Arizona. Litigation involving the failure of PTL Ministries was in part responsible for the demise of Laventhol and Horwath, which was then the largest non-Big 4 audit firm. For a discussion of GCOs in the non-profit sector, refer to Feng (2011).

## Responsibility for Going-Concern Disclosures

A challenging, but needed, area of research is to better distinguish between management, audit committee, and auditor roles in the disclosure and discussion of going-concern uncertainties. For example, the FASB has proposed that management report on their company's ability to continue as a going-concern (FASB 2008, 2011), and most recently have reaffirmed their interest in requiring going-concern disclosure as part of GAAP by directing their staff to continue researching this area for their future consideration (FASB 2012). At the international level, it is currently proposed to increase the level of disclosure by auditors in their report on issues of importance to users, including a specific statement on the appropriateness of management's use of the going-concern assumption (IAASB 2012). Accordingly, future research can examine how such disclosures by management and by auditors might be used and interpreted differently by investors, lenders, and other financial statement users.

## Different Research Approaches

Research methods involve tradeoffs, and there are advantages and disadvantages for every type of research method. The overwhelming majority of the published research related to GCOs has used different types of empirical approaches, with the archival approach being the dominant paradigm. However, due to the nature of publicly available data, such an approach has its limitations that may be overcome with other research methods.

Carcello et al. (2011, 19) note, in the context of summarizing research related to corporate governance, that "archival methods are not well suited for analyzing processes—that is, how does a board and/or board committee discharge its responsibilities? ... Experimental studies are particularly useful for studying how directors make individual decisions." The same logic is applicable in the context of GCO-related decisions. Knechel et al. (forthcoming) argue that the most critical attribute for determining audit quality is the judgment of the auditors conducting the audit. However, other than Mutchler (1984) and LaSalle and Anandarajan (1996), published studies have rarely used detailed interviews with audit partners and managers for insights about the GCO decision-making process.

Recent examples of studies that have used interviews with senior executives and auditors include Beasley et al. (2009) and Cohen et al. (2010) in the governance arena, and Trompeter and Wright (2010) on analytical procedures. Such studies can serve as templates to apply in the GCO area. How do factors such as accountability and professional skepticism affect the going-concern judgment? Further, going beyond the U.S. or Anglo-Saxon economies, how do factors such as culture and societal pressures affect auditors' GCO-related decisions?

## CONCLUSIONS

The global financial crisis has provided the catalyst for renewed interest from regulators, standard setters, and investors in the auditor's assessment and reporting on a company's ability to continue as a going-concern. The purpose of this review is to synthesize and discuss prior academic literature pertinent to the auditor's decision to issue a GCO. Based on the major findings from archival research in the U.S. over the past four decades, we develop a framework that structures our categorization of the main themes explored in the extant literature. We summarize the findings in the literature related to determinants of GCOs, as well as the trends and "accuracy" of GCOs and their impact on auditors, investors, and recipient companies. As part of our synthesis and discussion, we also identify methodological considerations for researchers and potential avenues for future research.

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