An Analysis of Auditors' Going-Concern Reporting Accuracy in Private Firms

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SYNOPSIS: The accuracy of audit reports is often viewed as a signal for audit quality. Prior research shows that in the context of going-concern reporting in audit markets dominated by public firms, some auditors are more accurate than others (e.g., Big N firms). This study is the first large-scale study that investigates going-concern reporting accuracy in an audit market dominated by private firms. The threat of reputation and litigation costs incentivizes auditors to report accurately in markets dominated by public firms, but such incentives are largely absent in markets dominated by private firms. Hence, reporting accuracy in such markets might not vary across auditors. Our main analysis is based on a sample of 1,375 Belgian firms that ceased to exist within one year from the financial statement date. Our results show that the frequency of Type II misclassifications does not vary across auditor types (Big 4 vs. non-Big 4, audit firm and partner industry specialists vs. non-specialists, more experienced vs. less experienced, and female vs. male auditors). Overall, these results cast doubt on the existence of quality differences among auditors in audit markets dominated by private firms.

Keywords: audit quality; audit reporting; going-concern; private firms

INTRODUCTION

A fundamental principle in the preparation of financial statements is the going-concern assumption (i.e., the assumption that an entity will continue to operate for at least one year beyond the financial statement date). When there is significant doubt about the appropriateness of the use of the going-concern assumption, auditors should issue a going-concern modified audit opinion (GCO). In this study, we examine factors associated with auditors' going-concern reporting accuracy among private firms. As recently noted by Geiger (2014, 317), private firms constitute a large and relevant portion of our economies that remain under-researched with respect to going-concern issues and auditor reporting.

When judging whether to issue a GCO, an auditor can make two types of misclassification errors: a Type I misclassification error (i.e., issuing a GCO to a firm that survives at least one year beyond the financial statement date—a *false positive*) or a Type II misclassification error (i.e., failing to issue a GCO to a firm that ceases to exist within one year from the financial statement date—a *false negative*).[1] Both types of misclassifications

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[1] Although traditionally referred to as "errors", misclassifications are errors only in a statistical sense (i.e., they are false positives and false negatives). A misclassification does not necessarily imply that the audit was sub-standard. Throughout this paper, we use the term "misclassification" rather than "error" to emphasize that there are many reasons why such misclassifications occur, which cannot be considered audit failures. First, a GCO might be *ex ante* remedial (i.e., a GCO might be a self-defeating prophecy). When a GCO facilitates company survival, the auditor is clearly not to blame (although the opinion would be classified as a Type I misclassification). Second, predicting bankruptcy is not expected from the auditor, nor is it the auditor's duty. Even when not issuing a GCO might *ex ante* be reasonable (given the firm characteristics and economic conditions at that time), firms can still cease to exist (and would be classified as Type II misclassifications). Auditors might also refrain from issuing a GCO because they believe that the client might go bankrupt as a result of the GCO (i.e., a GCO might be a self-fulfilling prophecy). Overall, although company failure is an imperfect measure of audit failure, it nevertheless provides a reasonable benchmark for analyzing variation in

introduce noise into audit reports, thereby reducing the informativeness of audit reports. Hence, issuing "inaccurate" audit reports constitutes instances of audit reporting failures (Francis 2004, 350). Both types of misclassifications are also associated with potential costs for the auditor. The primary cost of Type I misclassifications is possible client loss, while Type II misclassifications expose the auditor to reputation and litigation costs. Auditors thus face a trade-off when deciding whether to issue a GCO. In line with prior research (e.g., Geiger, Raghunandan, and Rama 2005; Geiger and Rama 2006), we focus on Type II misclassifications in this study because the focus of legislators and the public is on auditors "failing" to warn investors and other stakeholders in a timely way (e.g., Private Securities Litigation Reform Act (PSLRA), U.S. Congress 1995; The Economist 2014). Arguably, the potential costs to the auditor of Type II misclassifications exceed those of Type I misclassifications (Carcello, Vanstraelen and Willenborg 2009).[2]

There is a large body of research that has attempted to identify factors associated with auditors rendering GCOs and the accuracy thereof (e.g., Bruynseels, Knechel, and Willekens 2011; Carcello et al. 2009; Feldmann and Read 2010; Geiger et al. 2005; Geiger and Rama 2006; Lennox 1999). However, this literature is almost exclusively focused on publicly listed

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auditor reporting accuracy (Lennox 1999).

[2] Auditors can attain lower Type II misclassifications by consistently reporting more conservatively (i.e., lowering the threshold at which they issue a GCO). Doing so would lead them to issue more GCOs and, thus, increase Type I misclassifications. Hence, auditors could lower their number of Type II misclassifications by increasing their reporting *conservatism* (fewer Type II, but more Type I misclassifications) rather than their reporting *accuracy* (fewer Type II misclassifications without an increase of Type I misclassifications). To ensure that our results are reflective of reporting accuracy rather than greater conservatism, we test whether auditors associated with fewer Type II misclassifications are associated with more Type I misclassifications in a supplementary analysis.

firms. Because private firms differ from public firms on a number of important dimensions (Langli and Svanström 2014), it is not apparent without testing that results from public firms will generalize to private firms (Carson et al. 2013). Potential reputation and litigation costs are the main drivers of auditors' reporting behavior in audit markets dominated by listed firms (e.g., the U.S. audit market), and quality differences between auditors in these markets (e.g., between Big N and non-Big N firms) are well documented. In audit markets dominated by private firms (e.g., the audit markets of EU member states), such incentives are much weaker, and there is sparse evidence on whether auditors are quality-differentiated in these markets (for recent overviews, see Langli and Svanström 2014; Vanstraelen and Schelleman 2017). Moreover, to the extent that there is audit quality differentiation in such markets, such differentiation might be more dependent on the characteristics of the individual audit partner than on the characteristics of the audit firm because the audits of private firms are conducted by smaller audit teams, and the quality control (including internal monitoring) is less sophisticated (Langli and Svanström 2014).

Our empirical analyses are based on a sample of 1,375 private firms from 2008–2013 that ceased to exist within one year from the financial statement date. By investigating auditor reporting for a large sample of private firms, we extend studies that have focused on GCO reporting accuracy for public firms. Hence, we broaden our insight into the audits of private firms and make an important contribution to the literature on auditor reporting. Although the Belgian audit market differs substantially from the U.S. audit market (which is the focus of most studies in the auditing literature), the Belgian audit market is very similar to the audit markets of other continental European countries in important ways (explained below in more detail) and can be considered representative of such audit markets. A few prior studies have

used Belgian data to examine issues related to auditor reporting. Gaeremynck and Willekens (2003) provided evidence that Big N firms were more likely than non-Big N firms to issue qualified or adverse opinions. Knechel and Vanstraelen (2007) showed that Big N firms were less likely to commit a Type II misclassification, but found no difference in Type I misclassifications. Finally, Carcello et al. (2009) showed that the introduction of a new (rules-based) going-concern audit standard in 2000 led to an increase in Type I misclassifications but a decrease in Type II misclassifications. After the introduction of this new standard, they found no difference in the reporting accuracy of Big N and non-Big N audit firms.

Our study differs in a number of important ways from prior studies that have used Belgian data to examine auditor reporting. The studies by Gaeremynck and Willekens (2003) and Knechel and Vanstraelen (2007) were conducted before the introduction of the formal audit standard on audit reporting in 2000 (discussed in Carcello et al. 2009). Carcello et al. (2009) studied auditor reporting in the period immediately following the introduction of this formal standard (2001–2002). Since then, however, many aspects of the Belgian audit market that might impact auditors' reporting accuracy have changed. First, unlimited liability was replaced by a liability cap (decreasing the potential costs associated with Type II misclassifications). Second, disclosure of the engagement partner's identity in the audit report was introduced by the European Audit Directive (2006/43/EC), which might affect auditor reporting behavior (Carcello and Li 2013; Carcello and Santore 2015). Third, public oversight over the audit profession was introduced in Belgium in 2007. Public enforcement provides auditors with economic incentives for audit quality but might have stronger effects on Big N than on non-Big N auditors (Carson, Simnett, Thürheimer, and Vanstraelen 2017).

Hence, it is unclear *ex ante* whether the results from Carcello et al. (2009) carry over to the current reporting environment. Furthermore, our study uses data from both before and after the Global Financial Crisis (GFC), which is important because the GFC might have induced more-conservative auditor reporting (thereby reducing Type II misclassifications) (Geiger, Raghunandan, and Riccardi 2014).

More importantly in terms of our incremental contribution, this study is also the first to consider the relationship between audit partner characteristics and reporting accuracy. The literature on reporting accuracy has tended to focus on variation at the audit firm level (predominantly Big N vs. non-Big N). There has, however, been a shift in the auditing literature from conducting analyses at the audit firm level to the audit office level and, more recently, the audit partner level, with a few recent studies showing an association between audit partner characteristics and the likelihood of issuing GCOs (Knechel, Vanstraelen, and Zerni 2015; Sundgren and Svanström 2014). To the best of our knowledge, this study is the first to consider the relationship between specific audit partner characteristics and GCO reporting accuracy.

Our results provide no evidence of any variation in reporting accuracy across auditors. That is, Type II misclassifications are no less frequent for Big 4 than for non-Big 4 auditors, for audit firm or audit partner industry specialists than for non-specialists, for more experienced than for less experienced audit partners, or for female than for male auditors. These results are corroborated by a battery of additional analyses that show that our results are not driven by auditor conservatism, the GFC, GCO "stickiness", clients' financial health, or auditor switching. Our study contributes to the auditing literature by empirically demonstrating that findings about auditor reporting (accuracy) obtained from audit markets

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dominated by listed firms do not necessarily apply to markets dominated by private firms. Our results cast further doubt on the existence of quality differences among auditors in such markets (Vanstraelen and Schelleman 2017). The results of this study should be of interest to regulators (evaluating issues related to audit quality), lenders and other stakeholders (who rely on auditors to issue the "appropriate" audit report) and to managers, boards of directors, and audit committee members (because they are involved in auditor selection and retention decisions).

The remainder of this paper is organized as follows: In the next section, we provide an overview of the existing literature on the auditor's report and formulate our specific hypotheses. In the third section, we describe our research method and data collection. The fourth section reports our overall results. Additional analyses are reported in the fifth section. Finally, we conclude with a general discussion of our results, the limitations of our research, and possibilities for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Going-Concern Reporting Accuracy

Auditors should issue an unmodified audit opinion (i.e., an unqualified or "clean" opinion) when they conclude that a firm's financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework (i.e., give a "true and fair view"). A fundamental principle in the preparation of financial statements is the going-concern assumption (i.e., the assumption that an entity will continue to operate for at least one year beyond the financial statement date). When there is significant doubt about the appropriateness of the use of the going-concern assumption, the auditor should issue a GCO.

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Auditors face two sets of economic incentives when evaluating the going-concern assumption. First, if they issue a GCO to a client that does not subsequently ceases to exist (i.e., a Type I misclassification), auditors may lose that client (and related future quasi-rents). Clients are more likely to switch auditors after the receipt of a GCO (e.g., Carcello and Neal 2003; Geiger, Raghunandan, and Rama 1998). Second, auditors failing to issue a GCO to a client that subsequently ceases to exist (i.e., a Type II misclassification) risk exposure to litigation costs and loss of reputation (e.g., Carcello and Palmrose 1994; Krishnan and Krishnan 1996).

Prior research shows that reporting decisions of auditors are far from always being accurate (for a recent review, see Carson et al. 2013). Descriptive evidence on Type I misclassifications indicates that approximately 15 percent of surviving firms received a prior GCO (see Carson et al. 2013). Descriptive evidence on Type II misclassifications shows that approximately 40 to 50 percent of companies going bankrupt did not receive a prior GCO, although this percentage has varied over time (see Carson et al. 2013).

As argued by Geiger and Rama (2006, 3), lower reporting misclassification rates are measurable indicators of higher-quality reporting decisions by auditors. Hence, extant research has investigated factors underlying the variation in reporting accuracy across auditors. Studies by Lennox (1999) and Geiger and Rama (2006) have, for example, documented that Big N auditors are more accurate in their GCO decisions (i.e., make fewer Type I and Type II misclassifications) than non-Big N auditors are. Previous studies have also examined the effect of audit tenure (e.g., Geiger and Raghunandan 2002; Knechel and Vanstraelen 2007) and non-audit fees (e.g., Callaghan, Parkash, and Singhal 2009; Robinson 2008) on auditors' reporting accuracy but failed to find any effect.

Private Firms

Despite their economic importance and likely differences from public firms, few studies so far have focused on auditing issues in private firms (e.g., Carey, Simnett, and Tanewski 2000; Hope and Langli 2010; Hope, Langli, and Thomas 2012). There are, however, fundamental differences between private and public firms, so whether findings for public firms carry over to private firms remains an empirical issue (Carson et al. 2013; Langli and Svanström 2014).

Within the context of private firms, auditor reporting is primarily relevant because it can reduce information asymmetries between insiders (i.e., owners and management) and outsiders such as bankers, employees, and suppliers. According to Lennox (2005), this monitoring role of the auditor can in fact be more important in private firms because private firms typically disclose less non-accounting information than do public firms. Particularly for lenders, GCOs have potential consequences. First, financial statements are one of the most important sources of information used by bankers and other lenders in their credit lending decisions. Receiving a GCO negatively affects both the likelihood of receiving a loan and the loan terms (e.g., Chen, He, Ma, and Stice 2016; Firth 1980). Second, a GCO can result in the demise of a firm that would otherwise have survived (i.e., the so-called "self-fulfilling prophecy" effect). This possibility may be a more important issue in the context of private firms because their access to financing is more limited than is such access for listed firms (Hope and Vyas 2017). Studies by Gaeremynck and Willekens (2003) and Vanstraelen (2003) provide evidence for the existence of a self-fulfilling prophecy effect in the context of private Belgian firms. In summary, receiving a GCO potentially exposes private firms to

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severe negative consequences, which might incentivize auditors to acquiesce to their client and to report fewer GCOs than are warranted (thereby increasing the number of Type II misclassifications).

Theoretical work and empirical research suggests that potential litigation and reputation costs incentivize auditors to issue accurate audit reports (i.e., to minimize Type I and Type II misclassifications) (e.g., Anantharaman et al. 2016; Krishnan and Krishnan 1996; Matsumura et al. 1997). Especially larger (Big N) auditors are therefore expected to report more accurately (e.g., Berglund et al. 2017; Geiger and Rama 2006; Lennox 1999). It is, however, an open empirical question as to whether there are differences in reporting accuracy across auditors in the absence of such (market) incentives. There is general agreement that potential reputational and litigation costs are lower in markets dominated by private firms than in markets dominated by listed firms (Langli and Svanström 2014; Vanstraelen and Schelleman 2017). In such settings with low reputation risk and low litigation risk, auditors might more easily impair their independence and acquiesce to their client (Hope and Langli 2010). Overall, the absence of strong concerns about reputation and litigation should make auditors less conservative than would be true if such incentives were present in an otherwise identical market. In the absence of reputational and litigation concerns, auditors have few incentives to avoid Type II misclassifications, whereas they have strong incentives to acquiesce to their client (potentially decreasing the number of Type I misclassifications). Moreover, it is questionable whether differences in reporting accuracy across auditors would emerge in such markets. Substantial doubt exists concerning the extent of audit firm quality differentiation in markets dominated by private firms (Vanstraelen and Schelleman 2017). Much more than by listed firms, auditor selection by private firms appears to be strongly

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driven by price (cf. Almer et al. 2014; Branson and Breesch 2004).[3] In the absence of a (strong) demand for audit quality, it is unclear whether auditors differentiate themselves in terms of quality and to what extent there would be differences across auditors in terms of reporting accuracy. Prior studies on public firms have found that both Type I and Type II misclassifications are fewer for Big N auditors compared with non-Big N auditors (Geiger and Rama 2006; Lennox 1999), whereas audit firm industry specialists have been found more likely to issue GCOs (Reichelt and Wang 2010) and to have fewer Type II misclassifications (Bruynseels et al. 2011). Based on the above discussion, we believe that it is not certain whether such reporting differences would also be present in markets dominated by private clients, and we therefore formulate the following hypotheses:

H1: There is no difference in Type II misclassifications between Big 4 auditors and non-Big 4 auditors.

H2: There is no difference in Type II misclassifications between audit firm industry specialists and non-specialists.

Furthermore, to the extent that reporting accuracy varies across auditors in markets dominated by private firms, such variation might be more related to the characteristics of the individual audit partner than to the characteristics of the audit firm (Vanstraelen and Schelleman 2017). Audits of private firms are conducted by smaller audit teams, and the

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[3] The importance of price competition in the Belgian audit market is well established (e.g., Willekens and Achmadi 2003; Willekens and Gaeremynck 2005) and has received considerable attention from the professional oversight body over the past few years (see Breesch, De Muylder, Branson, and Hardies 2013).

quality control (including internal monitoring) is less sophisticated (Langli and Svanström 2014), giving the individual audit engagement partner much more influence over the outcome of these audits. Exploiting the fact that the engagement partner's identity is disclosed in the audit report in our setting, we also examine whether the audit engagement partner's characteristics are associated with reporting differences. Prior research suggests that auditor reporting accuracy could be related to audit partner industry specialization (e.g., Chi and Chin 2011; Goodwin and Wu 2014), experience (e.g., Biggs, Selfridge, and Krupka 1993; Choo and Trotman 1991), and gender (e.g., Hardies, Breesch, and Branson 2014; Hossain, Chapple, and Monroe 2016). Because it is unclear whether there indeed would be quality differences in markets dominated by private firms, we formulate the following hypotheses:

H3: There is no difference in Type II misclassifications between audit partner industry specialists and non-specialists.

H4: There is no difference in Type II misclassifications between more experienced audit partners and less experienced audit partners.

H5: There is no difference in Type II misclassifications between female audit partners and male audit partners.

Belgian Audit Market and Going-Concern Reporting

Although the Belgian audit market differs substantially from the U.S. audit market, it is very similar to most European audit markets. Because Belgium follows all EU directives concerning the European Single Market (i.e., directives regulating the movement of capital, labor, goods and services), accounting and auditing regulations in Belgium are very similar

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to those in the other EU member states. International Auditing Standards (ISAs) were formally adopted in Belgium in 2010, becoming effective for all audits of financial statements for periods ending on or after December 15, 2014.[4] Belgian Generally Accepted Auditing Standards ("Belgian GAAS") have, however, long been drafted based on ISAs. From the 1990s onwards, ISAs have explicitly been referred to by the committee responsible for drafting Belgian GAAS. A study by the FEE (1998) indicated a high degree of correspondence between ISAs and Belgian GAAS. In 2002, the Belgian Institute of Registered Auditors (IBR) formally committed to bringing Belgian GAAS in line with ISAs. Since 2006, translations of ISAs in Dutch and French (the official languages of Belgium) have been made available by the IBR.

In 2000, the IBR issued a formal standard on audits for clients experiencing financial distress (for a detailed discussion, see Carcello et al. 2009). According to this standard, an auditor must ascertain whether the going-concern assumption is tenable and the extent to which existing going-concern problems are adequately disclosed.[5] A GCO is required if there is a significant (material) going-concern risk (i.e., a risk that the entity will cease to exist within one year from the financial statement date). If the annual report discloses sufficient and acceptable justification, the auditor can issue the GCO by means of an explanatory paragraph (i.e., issue an unqualified audit opinion with an explanatory paragraph). If the

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[4] For audits of financial statements of Public Interest Entities, ISAs became effective in Belgium for periods ending on or after December 15, 2012.

[5] Belgian Company Law (Article 96) requires management to justify the application of valuation rules on the assumption of continuity in the annual report if the balance sheet shows an accumulated loss or if the profit and loss account shows a bottom-line loss for two consecutive years.

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auditor deems the disclosures in the annual report to be insufficient or unacceptable, the auditor can issue a qualified, adverse, or disclaimer of opinion.[6]

In accordance with EU directives, companies in Belgium are required by Company Law to have their financial statements audited by a registered auditor if they are "large" (i.e., meet certain size criteria).[7] Because the thresholds of these criteria are not large, many relatively small companies are legally required to appoint a statutory auditor. In contrast to the U.S. audit market, the demand for audit services is thus not voluntary for many privately held companies in Belgium. Private companies constitute more than 99 percent of Belgian companies that are subject to audit, as is true in most other EU member states. Because distressed private companies have fewer financing and survival options than do distressed public companies, the incidence of GCOs is generally higher in Belgium than in the U.S. Although direct comparisons are difficult due to differences in research design, studies using Belgian data typically report more than 20 percent of financially distressed companies receiving a GCO (e.g., Gaeremynck and Willekens 2003; Knechel and Vanstraelen 2007), whereas GCOs typically represent fewer than 10 percent of audit opinions in studies using

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[6] Given that qualified, adverse, or disclaimers of opinion are rare (constituting less than 7 percent of our sample), we consider any audit report containing remarks relating to going-concern uncertainties to be a GCO, irrespective of how the audit report was modified. When we exclude these observations from our sample, all of our results remain unchanged.

[7] Companies are considered large if they meet at least two of the following criteria: (1) turnover (excluding VAT) >7,300,000 euros; (2) total assets >3,650,000 euros; and (3) number of employees (yearly average) >50. These criteria must be considered on a consolidated basis if the company belongs to a group that publishes consolidated statements or if the company is a holding or a listed company. Listed companies and companies with more than 100 employees are always considered large.

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U.S. data (e.g., DeFond, Raghunandan, and Subramanyam 2002; Reynolds and Francis 2000).

Despite the high incidence of GCOs in Belgium, auditors in Belgium arguably still issue more clean opinions than is appropriate (Vanstraelen and Willekens 2008). Potential litigation costs are of negligible concern to Belgian auditors due to the relative absence of litigation against auditors in Belgium (Gaeremynck and Willekens 2003).[8] Compared with the U.S. audit market, potential reputation costs are also of lesser concern in the Belgian audit market because most companies are privately held and do not have a broad shareholder base to which they are accountable (Knechel and Vanstraelen 2007). Other (non-market) mechanisms to safeguard auditor independence and to secure adherence with GAAS exist, but they provide only weak incentives. First, auditors are tenured for a fixed (but renewable) period of three years. Issuing a GCO might thus not immediately lead to client loss (except in the third year). Second, auditors are subject to inspections and quality reviews by the IBR, which could trigger disciplinary sanctions.[9] In such an environment, auditors are arguably more susceptible to losing their independence because incentives work against the issuance of GCOs. As previously discussed, the issuance of a GCO generally increases the chances of losing a client, a potentially viable threat in the Belgian environment despite the three-year mandate. According to a study by Carcello et al. (2009), 30 percent of companies that

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[8] Based on a systematic archival search of the historical editions of the local business press and other media outlets, we identified only five lawsuits filed against auditors in Belgium since 2000. In three of these cases, the charges against the auditor were dismissed. The other two cases ended in a settlement.

[9] Such disciplinary sanctions are rare but do occur. During our sample period, 78 cases against a statutory auditor were initiated. Thirty of these cases resulted in the auditor's suspension (for periods ranging from 8 days to 1 year). Five auditors were also expelled from the profession in this period.

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received a GCO in the period from 2001 to 2002 but did not file for bankruptcy in the following year changed their audit firm at the next opportunity compared with an average auditor switch rate of only approximately 5 percent (Branson and Breesch 2004).

Two studies predating the introduction of the formal audit reporting standard in 2000 provide evidence that Big N auditors in Belgium were more likely to issue qualified or adverse opinions (Gaeremynck and Willekens 2003) and were less likely to commit Type II misclassifications (Knechel and Vanstraelen 2007). A study by Carcello et al. (2009) showed, however, that after the introduction of the going-concern standard, Big N firms were no longer more accurate in their reporting than were non-Big N audit firms. Over the past decade, various other changes have taken place in the Belgian audit market that might have influenced auditors' reporting behavior. First, potential litigation costs decreased even further due to new legislation limiting auditors' liability: unlimited liability was replaced by a liability cap of three million euros for audits of private firms (Law of December 23, 2005). Furthermore, if the auditor is a natural person (rather than a legal entity), lawsuits became only permissible in cases of an intentional breach of auditor duties. Because the potential penalty for rendering an incorrect clean opinion further declined, auditors may have become less conservative in more recent years (leading to an increase in Type II misclassifications). Second, the implementation of the European Audit Directive (2006/43/EC) in Belgian law introduced the disclosure of the engagement partner's identity in the audit report. Although the impact of such a disclosure requirement is theoretically ambiguous (King, Davis, and Mintchik 2012), there is theoretical and empirical evidence that suggests that engagement partner identification might affect reporting conservatism and the accuracy of audit reports (Carcello and Li 2013; Carcello and Santore 2015). Finally, the European Audit Directive

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also introduced public oversight over the auditing profession in Belgium from 2007 onwards. Public enforcement provides auditors with economic incentives for audit quality but might have stronger effects on Big N than on non-Big N auditors (Carson et al. 2017).

RESEARCH METHOD AND DATA

Data

In line with prior research (e.g., Carcello et al. 2009; Geiger et al. 2014), our analysis was conducted using a sample of 1,375 stressed Belgian firms that ceased to exist within one year from the financial statement date. Our sample was developed starting with all audited Belgian private firms from 2008–2013 (Table 1). We started our period of study in 2008 because partner identities became widely disclosed from that point onward. Our period under study ended in 2013 because from 2014 onwards, auditors in Belgium were required to formally comply with ISAs for all audits. We restricted our sample to distressed companies because prior research has emphasized the importance of conditioning analyses of GCO reporting on the presence of financial distress (e.g., DeFond et al. 2002; Reynolds and Francis 2000). Moreover, Belgium's going-concern audit standard specifically pertains to the audit of companies experiencing financial distress (Carcello et al. 2009). We considered a company financially distressed if it met one or more of the following criteria: (1) an operational loss, (2) a bottom line loss, (3) negative retained earnings, or (4) negative working capital (Hopwood, McKeown, and Mutchler 1994; Mutchler, Hopwood, and McKeown 1997).[10] We

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[10] These criteria are intentionally broad so that we do not exclude any company for which the auditor might have evaluated the appropriateness of the going-concern assumption. Our results are, however, unaffected by the use of our selection criteria (i.e., for all test variables, the sign and level of significance are unchanged from

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eliminated companies that appointed more than one auditor (joint audits), financial institutions, and public administrative institutions.

[Insert Table 1 around here]

Audit opinion data were obtained from *Graydon Belgium*, a provider of credit information, which indicates in its databases whether an audit report departs from a "clean" opinion. To determine whether audit opinions were modified for going-concern uncertainty, we then manually examined all audit reports departing from a "clean" opinion for remarks relating to going-concern uncertainties. Audit opinions were classified as being either a GCO or not a GCO. Financial statement data were gathered from the electronic database Bel-First from Bureau Van Dijk. Additional data on audit firms and audit partners were retrieved from the public register of auditors.

Estimation Model

Following prior research (e.g., Berglund et al. 2017; Carcello et al. 2009; Carey, Kortum, and Moroney 2012; Geiger and Rama 2006; Knechel and Vanstraelen 2007), we use the following logistic regression model to explain the probability of Type II misclassifications:

$$(1) \quad GCO_{it} = {}_0 + {}_1 BIG4_{it} + \beta_2 SPECFIRM_{it} + \beta_3 SPECAP_{it} + \beta_4 EXPERIENCE_{it} + \\ \beta_5 SEX_{it} + \beta_6 PRIORGCO_{it} + \beta_7 LTA_{it} + \beta_8 AGE_{it} + \beta_9 ATURN_{it} + \beta_{10} LEV_{it} +$$

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those tabulated when we restrict our sample to companies that exhibited either an operational loss or negative retained earnings ($n = 1021$)).

$$\beta_{11}Chg\_LEV_{it} + \beta_{12}WC_{it} + \beta_{13}PROBF_{it} + \beta_{14}IRISK_{it} + \beta_{15}EQUITY_{it} + \beta_{16}LOSS_{it}$$
$$+ \beta_{17}PRIORLOSS_{it} + industry\ and\ year\ dummies +\ _{it}$$

GCO is a dummy variable equaling 1 for companies that received a GCO and 0 otherwise. Companies that ceased to exist within one year from the financial statement date but did not receive a GCO (*GCO* = 0) are, by definition, Type II misclassifications.

BIG4, *SPECFIRM*, *SPECAP*, *EXPERIENCE*, and *SEX* are our main test variables to test our hypotheses. *BIG4* is a dummy variable equaling 1 for companies audited by a Big 4 auditor and 0 otherwise. *SPECFIRM* is a dummy variable equaling 1 for companies that are audited by audit firm industry specialists and 0 otherwise. Following prior research (e.g., Francis, Reichelt, and Wang 2005), we classified an audit firm as an auditor specialist in an industry if the audit firm was the largest supplier in the industry (based on the auditor's annual market share of audit fees within a two-digit NACE category).[11] *SPECAP* is a dummy variable equaling 1 for companies that are audited by audit partner industry specialists and 0 otherwise. As in Zerni (2012), we classified an audit partner as an auditor specialist in an industry if the audit partner was the largest or second-largest supplier in the industry (based on the audit partner's annual market share of audit fees within a two-digit NACE category) and audited at least five clients within that industry.[12] *EXPERIENCE* signifies the number of years the company's auditor has been legally authorized to sign audit opinions. *SEX* is a

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[11] NACE is the industry standard classification system used in the EU.

[12] The results are unaffected by the use of different cut-off values for *SPECFIRM* and *SPECAP* (e.g., classifying both the largest and the second largest audit firm in an industry as specialists or dropping the requirement to have audited at least five clients within the industry to be considered an audit partner industry specialist).

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dummy variable equaling 1 for companies that had a female audit engagement partner and 0 for companies that had a male audit engagement partner.

We include variables to control for both contributing and mitigating factors that have been shown to be related to auditor GCO reporting decisions. Specifically, we control for whether the company received a GCO in the prior year (*PRIORGCO*), for company size (*LTA*), company age (*AGE*), and a host of variables to control for the companies' financial condition (*ATURN*, *LEV*, *Chg_LEV*, *WC*, *PROBF*, *IRISK*, *EQUITY*, *LOSS*, and *PRIORLOSS*). Finally, we add dummy variables for different industries and years to control for industry and time effects. See Appendix A for detailed variable descriptions.

RESULTS

Descriptive Statistics

Table 2 presents descriptive statistics for the full sample of companies that ceased to exist. Table 2 shows that 69.3 percent (*n* = 953) of companies in our sample did not receive a GCO (i.e., Type II misclassifications), which is substantially higher than in prior studies investigating public firms. Carson et al. (2013), for example, report 40 percent Type II misclassifications for U.S. firms during the period 2000–2010.

For dichotomous variables, we present cross-classifications with misclassification status (i.e., Type II misclassification/no misclassification). For example, 64.9% and 35.1% of the observations with non-Big 4 auditors (i.e., *Big 4* = 0) have Type II misclassifications and no misclassifications respectively. Similarly, 71.8% and 28.2% of the observations with Big 4 auditors (i.e., *Big 4* = 1) have Type II misclassifications and no misclassifications respectively. Column (3) shows *p*-values for the Pearson chi-square tests, which is used to

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test whether or not a relationship exists between dichotomous variables and Type II misclassifications. For continuous variables, the table presents the means for the Type II misclassification and no misclassification groups. Column (3) shows the *p*-values for T-tests, which is used to test the difference between the two groups.

Looking at Column (1), we observe that the frequency of Type II misclassifications was lower among non-Big 4 auditors than among Big 4 auditors (*BIG 4*: 64.9 versus 71.8 percent) but did not significantly differ across other auditor dimensions (*SPECFIRM*, *SPECAP*, *SEX*). Comparing descriptive statistics in Column (1) and Column (2) further shows that the mean level of *EXPERIENCE* did not differ across companies with Type II misclassifications and companies with no misclassifications.

Descriptive statistics in Column (1) further show that the frequency of Type II misclassifications was lower for companies that received a GCO in the previous year (*PRIORGCO*: 5.3 versus 87.4 percent), for companies with negative working capital (*WC*: 59.3 versus 77.8 percent), for companies with equity capital less than half of the share capital (*EQUITY*: 39.8 versus 86.3 percent), and for companies that experienced losses in the current year (*LOSS*: 71.9 versus 89.4 percent) or prior year (*PRIORLOSS*: 54.6 versus 83.6 percent). Finally, companies with Type II misclassifications (Column (1)) were, on average, larger (*LTA*: 14.24 versus 13.31), older (*AGE*: 19.98 versus 17.57 years) and financially healthier (*ATURN*, *LEV*, *PROBF*) than companies with no misclassification (Column (2)).

Table 3 reports correlations among the variables used in our subsequent analyses. The dependent variable *GCO* is positively correlated with *PRIORGCO*, *ATURN*, *LEV*, *WC*, *EQUITY*, *LOSS*, and *PRIORLOSS* and negatively correlated with *BIG4*, *LTA*, *PROBF*, and *AGE*. None of these correlations are very strong except for the correlation with *PRIORGCO*

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(*r* = 0.738), reflecting the persisting nature of GCOs. The test variables *BIG4* and *SPECFIRM* and *BIG4* and *SPECAP* are moderately correlated (*r* = 0.366 and -0.325, respectively).[13] Correlations between control variables are all moderate to weak, with the strongest correlations being between *PROBF* and *EQUITY* (*r* = -0.581) and *PROBF* and *LOSS* (*r* = -0.518).

[Table 2 around here]

[Table 3 around here]

Type II Misclassification Rates

The logistic regression results for the probability of Type II misclassifications are presented in Table 4. The overall model is significant (*p* = .000) and has a pseudo R^2 of 0.498. The results in Table 4 indicate greater accuracy in the GCO reporting decisions (i.e., fewer Type II misclassifications) when the company received a GCO in the prior year (*PRIORGCO*), for larger companies (*LTA*), and for companies with signs of severe financial distress (*LOSS* and *EQUITY*).

The results show, however, no significant differences in Type II misclassifications across auditors. None of the coefficients on *BIG4*, *SPECFIRM*, *SPECAP*, *EXPERIENCE*, or *SEX* is statistically significant.

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[13] Although the correlation between our test variables is rather modest, one may be concerned that simultaneously including these variables in the regression analysis might bias the coefficients downwards. In an additional analysis (untabulated), we therefore re-ran our model with our test variables included one at a time rather than simultaneously. Coefficient signs and significance levels in this analysis were unchanged from those reported in Table 4.

[Table 4 around here]

ADDITIONAL ANALYSES

Continuing as a Going-Concern

Consistent with auditing standards, we defined Type II misclassifications as instances in which the auditor did not issue a GCO to a company that ceased to exist within one year from the financial statement date. Prior research, however, often narrowly defines firms' inability to continue as a going-concern in terms of bankruptcy. Although bankruptcy might be one resolution to a firm's inability to continue as a going-concern, alternative outcomes such as mergers or acquisitions are also possible. Although it might be consistent with auditing standards for auditors to issue a GCO in all circumstances in which a firm would cease to exist (including mergers and acquisitions), it might also be that only cases in which the auditor does not issue a GCO to a firm that subsequently goes bankrupt should be considered a Type II misclassification. Hence, we re-ran our analyses on the subsample of firms that ceased to exist due to bankruptcy (rather than to mergers or acquisitions) (Table 5). The results for this analysis are similar (i.e., same coefficient signs and levels of significance) for *BIG4*, *SPECFIRM*, *SPECAP*, and *EXPERIENCE*, whereas the coefficient for *SEX* is negative and marginally significant in this subsample analysis (= -0.785; $p = 0.068$).

[Table 5 around here]

Auditor Conservatism

Auditors can attain fewer Type II misclassifications by consistently reporting more conservatively (i.e., lowering the threshold at which they issue a GCO). Doing so would lead

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them to issue more GCOs and, as a result, lead to an increase of Type I misclassifications. Hence, auditors could lower their number of Type II misclassifications by increasing their reporting *conservatism* (fewer Type II but more Type I misclassifications) rather than their reporting *accuracy* (fewer Type II misclassifications without an increase of Type I misclassifications). To ensure that our results are reflective of reporting accuracy rather than greater conservatism, we test whether Type I misclassifications vary across auditors. The results of this analysis show no statistically significant differences in Type I misclassifications between Big 4 and non-Big 4 auditors (*BIG4*), audit partner industry specialists and non-specialists (*SPECAP*), more and less experienced auditors (*EXPERIENCE*), or female and male auditors (*SEX*). This analysis does show that audit firm industry specialists (*SPECFIRM*) are less often associated with Type I misclassifications (= -0.301; *p* <0.000), suggesting that audit firm specialists might be more accurate in their reporting.

The Global Financial Crisis

Changes in the reporting environment can affect auditors' reporting behavior. Studies on auditor reporting for listed clients in the U.S. (Geiger et al. 2014) and Australia (Xu, Carson, Fargher, and Jiang 2013) suggest that auditors issued more GCOs after the onset of the GFC. Moreover, different auditors might react differently to changes in the reporting environment. To ensure that our results are not driven by temporary effects induced by the GFC, we divide our sample based on whether they pertain to the period of the GFC (2008–2010; *n* = 590) or the period after the GFC (2011–2013; *n* = 785). The results of this analysis confirm our main

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results because all coefficient signs and significance levels of our test variables remain unchanged from those reported in Table 4.

GCO Persistence

A concern related to our results reported above is that a GCO in year t might be indicative of more than only the decision criteria of the auditor at that particular moment in time because audit reporting is highly persistent (Lennox 2000). Thus, prior research has often focused on first-time GCOs (e.g., Carey et al. 2012; DeFond et al. 2002). To account for the persisting nature of GCOs, we identified first-time GCOs ($n = 135$) and re-ran our main analysis.[14] The coefficient signs and significance levels, compared to those reported in Table 4, are unchanged in this additional analysis for all test variables.

Financial Health

Next, we test whether the results from our analysis of Type II misclassifications are sensitive to the degree of financial distress of the failing companies. In a recent study, Berglund et al. (2017) stress the importance of adequately controlling for clients' financial health when examining the association between auditor characteristics and the propensity to issue a GCO. Although all companies in our sample showed signs of financial distress, companies might not appear likely to cease to exist within one year from the financial statement date, making it less likely that an auditor would issue a GCO. We therefore re-ran

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[14] To this end, we manually collected additional audit opinion data for the year 2007 to determine whether companies that received a GCO in 2008 had received a GCO in the prior year.

our analyses based upon a restricted sample of companies that showed severe signs of financial distress. Specifically, we re-ran our analysis for companies that ceased to exist within one year from the financial statement date and had a high likelihood of bankruptcy (i.e., a *PROBF* score lower than 0.531) ($n = 813$).[15] We also re-ran our analysis for companies that ceased to exist within one year from the financial statement date and had experienced losses in the current year ($n = 794$). The results of these additional analyses are similar to those reported in Table 4 for all test variables.

Auditor Switching

Clients are more likely to switch auditors after the receipt of a GCO (e.g., Carcello and Neal 2003; Geiger et al. 1998). Such behavior might at least partly be motivated by the client seeking an alternative auditor willing to give a clean opinion. The evidence on the success of so-called "opinion shopping" is mixed, but some studies show that companies indeed might successfully engage in audit opinion shopping by switching audit firms (e.g., Lennox 2000) or audit partners (e.g., Chen, Peng, Xue, Yang, and Ye 2016). To test whether our results are sensitive to potential attempts at opinion shopping, we add control variables for audit firm and audit-partner switching to our model. We also re-ran our analyses on a sample of firms that did not switch audit firms ($n = 1,300$) and a sample of firms that did not switch audit partners ($n = 1,231$). The results of these additional analyses again show no statistically significant association between auditor characteristics (*BIG4*, *SPECFIRM*, *SPECAP*, *EXPERIENCE*, and *SEX*) and the frequency of Type II misclassifications.

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[15] Scores lower than 0.531 indicate acute financial problems (Ooghe and Spaenjers 2005).

CONCLUSION

In this paper, we examined factors associated with auditors' going-concern reporting accuracy for private firms. Despite their economic importance and likely differences from public firms, there is surprisingly little research on auditing issues in private firms. To the best of our knowledge, this study is the first large-scale examination of GCO reporting accuracy among private firms. This study therefore makes an important contribution to the generalizability of previous empirical studies relying on data about publicly traded companies.

Using a sample of 1,375 stressed, private Belgian companies, we tested whether Big 4 auditors, audit firm industry specialists, audit partner industry specialists, more experienced audit partners, or female auditors exhibit higher-quality audit reporting decisions as reflected in lower Type II misclassification rates. Our results provide no evidence for such a relationship. In the context of the Belgian audit market, Type II misclassifications are no less likely for Big 4 auditors, audit firm or partner industry specialists, more experienced auditors, or female auditors than for their counterparts. The prior research on listed firms has found strong evidence for variation across auditors in reporting accuracy, especially for Big 4 firms being associated with fewer misclassifications than are smaller audit firms. Hence, our results challenge the generalizability of results from auditors operating in markets dominated by listed firms to auditors operating in markets dominated by private firms. Although potential reputation and litigation costs may act as strong incentives in markets dominated by listed firms, such incentives are largely absent in most audit markets worldwide, which are characterized by low litigation risk and a predominance of private firms. Furthermore, in a context of private firms, certain incentives that could prevent an auditor from issuing a GCO

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(even when warranted) might be even more important than traditionally assumed. For example, auditors might not issue a GCO to a financially stressed client because they fear that it might become a self-fulfilling prophecy. Such concerns might be much more relevant in the context of private firms given the limited financing and survival options for (distressed) private firms compared to (distressed) listed firms.

Our study is inevitably subject to some limitations. First, Type II misclassifications are not a direct measure of the quality of an auditor's GCO decision. Although our results do not provide evidence for the existence of quality differences across auditors in Belgium, we cannot conclude that such differences definitely do not exist. The analysis of misclassifications is limited because misclassifications do not necessarily imply an error or audit failure and thus might not capture subtle quality differences. Moreover, analyses of misclassifications are necessarily limited to distressed firms, limiting the generalizability of the results (i.e., quality differences might manifest themselves in the audits of non-distressed firms). Second, in terms of generalizability, it is obvious that the Belgian audit market differs vastly from the U.S. audit market. Our study is unable to differentiate the effects of auditing private firms from the effects of auditing in a market dominated by private firms. Future research could examine whether auditor reporting for private firms is different in audit markets that are not dominated by private firms (i.e., in markets in which there is a substantial number of both private and listed firms). Nevertheless, given the large commonalities between the Belgian audit market and the audit markets of other continental European countries (in terms of, for example, entrance requirements, accounting and auditing standards, limited auditor liability, and the predominance of private firms), it is reasonable to assume that our results can be generalized to these other markets.

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TABLE 1

Sample Selection and Description

Firm-year observations 2008–2013	109,893
Less:	
Firms not financially distressed [a]	(47,494)
Firms with joint audit	(2,454)
Financial institutions [b]	(9,774)
Public administrative institutions [c]	(124)
Firms still operating	(48,672)
	_____
Final sample [d]	1,375

[a] Firms are considered financially distressed if they meet one or more of the following criteria: (1) an operational loss, (2) a bottom line loss, (3) negative retained earnings, or (4) negative working capital.

[b] Financial institutions (NACE codes 64, 65, 66) are excluded because of their specific accounting requirements, which differ substantially from those of industrial and commercial firms.

[c] Public administrative institutions (NACE code 84) are excluded because of their specific nature.

[d] All firms in the final sample are firms that ceased to exist within one year from the financial statement date.

TABLE 2

Descriptive Statistics for Type II Misclassifications

Variables		(1) Type II Misclassification (*n* = 953)	(2) No Misclassification (*n* = 422)	(3) *p*-value
BIG 4	*BIG 4* = 0 (*n* = 490)	64.9%	35.1%	
	BIG 4 = 1 (*n* = 885)	71.8%	28.2%	.008***
SPECFIRM	*SPECFIRM* = 0 (*n* = 1,089)	68.7%	31.3%	
	SPECFIRM = 1 (*n* = 286)	71.7%	28.3%	.329
SPECAP	*SPECAP* = 0 (*n* = 1,262)	69.3%	30.7%	
	SPECAP = 1 (*n* = 113)	69.0%	31.0%	.946
SEX	*SEX* = 0 (*n* = 1,212)	65.0%	35.0%	
	SEX = 1 (*n* = 163)	70.0%	30.0%	.207
PRIORGCO	*PRIORGCO* = 0 (*n* = 1,072)	87.4%	12.6%	
	PRIORGCO = 1 (*n* = 303)	5.3%	94.7%	.000***
WC	*WC* = 0 (*n* = 744)	77.8%	22.2%	
	WC = 1 (*n* = 631)	59.3%	40.7%	.000***
EQUITY	*EQUITY* = 0 (*n* = 872)	86.3%	13.7%	
	EQUITY = 1 (*n* = 503)	39.8%	60.2%	.000***
LOSS	*LOSS* = 0 (*n* = 581)	89.4%	10.6%	
	LOSS = 1 (*n* = 794)	71.9%	28.1%	.000***
PRIORLOSS	*PRIORLOSS* = 0 (*n* = 704)	83.6%	16.4%	
	PRIORLOSS = 1 (*n* = 671)	54.6%	45.4%	.000***
EXPERIENCE		16.39 (Mean)	16.44 (Mean)	.913
LTA		14.24 (Mean)	13.31 (Mean)	.000***
AGE		19.98 (Mean)	17.57 (Mean)	.005***
ATURN		1.64 (Mean)	2.90 (Mean)	.000***
LEV		15.28 (Mean)	42.77 (Mean)	.005***
Chg_LEV		5.39 (Mean)	7.89 (Mean)	.381

PROBF	0.52 (Mean)	0.44 (Mean)	.000***
IRISK	0.44 (Mean)	0.46 (Mean)	.409

*, **, *** p < 0.10, 0.05, and 0.01, respectively. All *p*-values are two-tailed.

Variables are defined in Appendix A.

T-tests were used for comparing continuous variables between companies with and without Type II misclassifications; Pearson chi-square tests were used to test whether or not a relationship exists between dichotomous variables and Type II misclassifications.

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TABLE 3
Pearson's Correlation Matrix ($N = 1,375$)

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 GCO	**-0.071**	0.002	-0.026	0.003	-0.034	**0.738**	**-0.166**	**0.140**	**0.089**	0.025	**0.200**	**-0.356**	0.022	**0.487**	**0.253**	**0.315**	**-0.076**
2 BIG 4	1	**0.184**	**0.366**	**-0.325**	0.023	-0.037	0.022	**-0.122**	0.028	0.052	-0.107	-0.011	-0.035	-0.028	-0.043	-0.040	0.014
3 SPECAP		1	**0.212**	-0.034	0.052	0.033	0.036	-0.032	0.003	-0.025	0.033	**0.075**	-0.031	-0.046	-0.012	0.009	0.007
4 SPECFIRM			1	**-0.129**	-0.006	0.013	0.028	**-0.074**	0.029	0.012	**-0.091**	0.033	-0.005	-0.043	-0.062	-0.012	0.002
5 EXPERIENCE				1	**0.140**	0.003	-0.016	0.042	-0.031	0.007	0.016	0.002	-0.038	-0.021	0.005	0.021	0.042
6 SEX					1	-0.044	0.029	-0.057	0.043	-0.008	0.026	0.023	-0.025	-0.044	-0.040	-0.038	0.004
7 PRIORGCO						1	**-0.186**	**0.141**	**0.112**	0.028	**0.190**	**-0.316**	-0.015	**0.456**	**0.171**	**0.330**	**-0.078**
8 LTA							1	**0.089**	**-0.397**	**-0.166**	-0.038	**0.435**	**0.115**	**-0.399**	**-0.167**	**-0.254**	**0.120**
9 ATURN								1	**-0.071**	-0.057	0.061	0.031	**0.153**	0.067	0.069	0.004	0.028
10 LEV									1	**0.424**	**0.174**	**-0.201**	**-0.134**	**0.215**	0.047	**0.115**	0.042
11 Chg_LEV										1	0.054	**-0.075**	**-0.093**	**0.088**	-0.034	0.019	-0.016
12 WC											1	**-0.202**	**-0.261**	**0.313**	0.052	**0.129**	**-0.073**
13 PROBF												1	0.061	**-0.581**	**-0.518**	**-0.385**	0.053
14 IRISK													1	-0.047	-0.028	-0.069	0.098
15 EQUITY														1	**0.283**	**0.359**	-0.098
16 LOSS															1	**0.318**	-0.023
17 PRIORLOSS																1	**-0.081**
18 AGE																	1

Boldface values are significant at the 0.01 level.

Variables are defined in Appendix A.

TABLE 4

Logistic Regression Analysis for Type II Misclassifications (Full Sample)

(Dependent variable = *GCO*) (*N* = 1,375)

Variables	Expected sign		S.E.	*p*
Intercept		–77.530	143.9	.590
BIG4	?	–.268	.239	.263
SPECFIRM	?	–.191	.282	.480
SPECAP	?	–.346	.457	.448
EXPERIENCE	?	–.001	.015	.945
SEX	?	.127	.312	.687
PRIORGCO	+	5.017	0.343	.000***
LTA	–	.093	.050	.062*
AGE	–	–.000	.007	.989
ATURN	–	.116	.037	.002***
LEV	+	.000	.000	.901
Chg_LEV	–/+	.001	.002	.656
WC	+	.266	.225	.238
PROBF	–	–2.136	1.555	.170
IRISK	+	.616	.285	.030**
EQUITY	+	1.260	.256	.000***
LOSS	+	.901	.258	.000***
PRIORLOSS	+	.199	.220	.356

^{2} = 943.509 (*p* = .000)

Nagelkerke R² = .498

*, **, *** p < 0.10, 0.05, and 0.01, respectively. All *p*-values are two-tailed.

Standard errors are adjusted for heteroscedasticity and clustered on each company.

Industry and year indicator variables are included but not tabulated.

Variables are defined in Appendix A.

TABLE 5

Logistic Regression Analysis for Type II Misclassifications (Bankrupt Sample)

(Dependent variable = *GCO*) (*N* = 648)

Variables	Expected sign		S.E.	*p*
Intercept		−16.882	2095.1	.994
BIG4	?	−.333	.350	.341
SPECFIRM	?	−.506	.435	.245
SPECAP	?	−.445	.707	.529
EXPERIENCE	?	−.008	.022	.705
SEX	?	.785	.429	.068*
PRIORGCO	+	5.699	0.540	.000***
LTA	−	.195	.069	.005*
AGE	−	−.008	.010	.410
ATURN	−	.175	.051	.001***
LEV	+	.001	.001	.224
Chg_LEV	−/+	.001	.002	.557
WC	+	.432	.361	.231
PROBF	−	−0.961	2.111	.649
IRISK	+	.243	.371	.512
EQUITY	+	0.341	.374	.362
LOSS	+	1.450	.405	.000***
PRIORLOSS	+	−.094	.327	.774

χ^2 = 526.86 (*p* = .000)

Nagelkerke R^2 = .593

*, **, *** p < 0.10, 0.05, and 0.01, respectively. All *p*-values are two-tailed.
Standard errors are adjusted for heteroscedasticity and clustered on each company.
Industry and year indicator variables are included but not tabulated.
Variables are defined in Appendix A.

Dependent variable

GCO   = 1 for a going-concern opinion (identified using the audit opinion), and 0 otherwise.

Independent variables

BIG4   = 1 for a Big 4 auditor (identified using the audit opinion), and 0 otherwise;

SPECFIRM   = 1 when the audit firm is an industry specialist, and 0 otherwise. Audit firms are classified as specialists if they have the largest market share, by audit fees, in the industry (NACE two-digit codes);

SPECAP   = 1 when the audit partner is an industry specialist, and 0 otherwise. Audit partners are classified as specialists if they have the largest or second-largest market share, by audit fees, in the industry (NACE two-digit codes) and audited at least five clients within that industry;

EXPERIENCE   experience of the auditor measured in years (identified using the public register of auditors);

SEX   = 1 for a female auditor (identified using the public register of auditors), and 0 otherwise;

PRIORGCO   = 1 if the company received a GCO in the previous year (identified using the audit opinion), and 0 otherwise;

LTA   natural logarithm of total assets (in thousands euros) (Bel-First data);

AGE   age of the company measured in years (Bel-First data);

ATURN   sales divided by lagged assets (Bel-First data);

LEV   total liabilities divided by total assets (Bel-First data);

Chg_LEV   change in *LEV* from the previous year (Bel-First data);

WC   = 1 for negative working capital (Bel-First data), and 0 otherwise;

PROBF   score of a standardized bankruptcy prediction model developed for Belgian companies (Ooghe and Spaenjers 2005). In this model, eight variables are logit-transformed and then equally weighted: (1) gross added value/personnel employed, (2) net return on total assets before taxes, (3) net return on equity after taxes, (4) self-financing level, (5) general level of financial independence, (6) short-term financial debt level, (7) free cash flow, and (8) (cash + short-term investments – short-term financial debt)/current assets. A higher score indicates a healthier company;

IRISK   inventory and receivables divided by total assets (Bel-First data);

EQUITY   = 1 when equity capital is less than one-half of the share capital (Bel-First data), and 0 otherwise;

LOSS   = 1 if company experienced losses (Bel-First data), and 0 otherwise;

PRIORLOSS	= 1 if company experienced losses in the previous year (Bel-First data), and 0 otherwise.