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Going-concern opinion decisions on bankrupt clients: Evidence of long-lasting auditor conservatism?

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A B S T R A C T

Geiger, Raghunandan, and Rama (2005) examine auditor going-concern decisions prior to client bankruptcy in the periods surrounding the enactment of the Sarbanes-Oxley Act (2002) at the start of this century and find evidence of improved conservatism. Feldmann and Read (2010) replicate and extend Geiger et al. (2005) and find that the proportion of going-concern opinions (GCOs) increases sharply in the post-SOX period (2002 – 2003) relative to the pre-SOX period (2000 – 2001). They show, however, that the improvement in conservatism is largely transitory and that the GCO ratio quickly declines over time, ultimately returning to its pre-SOX level by 2006. In this paper, we examine the prior audit opinions that auditors issued for a sample of 340 U.S. public companies that filed for bankruptcy during the years 2006–2015, a period that includes the recent Great Recession (hereafter, GR). Our analysis sheds light on whether the enormity of the GR resulted in a long-lasting change toward conservatism in auditor going-concern decisions on bankrupt clients. Controlling for confounding factors, we find that auditors were significantly more likely to issue GCOs to subsequently bankrupt clients following the onset of the GR. Finally, controlling for confounding factors, we find no significant change in the propensity of auditors to issue a GCO during the two post-GR recovery periods compared to going-concern decisions during the GR.

1. Introduction

U.S. legislators expressed concerns that companies often fail shortly after receiving a standard (unmodified) audit opinion, and criticized auditors for failing to warn the public of their client's impending financial collapse (cf., U.S. House of Representatives, 1985, 1990, 2002; U.S. Senate, 2002). Auditors, through going-concern modified audit opinions (hereafter, GCOs), publicly convey their assessment of whether substantial doubt exists about the client's ability to remain viable and continue as a going-concern. Kida (1980) and Mutchler (1984) suggest that auditors perceive a greater risk of economic loss when a client files for bankruptcy without having received a prior GCO. Prior research finds that auditors, in approximately 50% of the cases, make Type II errors (i.e., issuance of an unmodified audit opinion in the year preceding the filing of bankruptcy).[1]

Researchers who examine auditor going-concern decisions prior to client bankruptcy find that reporting conservatism strengthened in the wake of the Enron debacle. For example, Geiger, Raghunandan, and Rama (2005) report that U.S. bankruptcies that have audit opinions dated in the post-Sarbanes-Oxley (hereafter, SOX) period (2002–2003) were more likely to contain a GCO compared to opinions issued during the period between January 2000 and October 2001.[2] Later, Feldmann and Read (2010) examine audit opinions preceding the filing of bankruptcy over four time periods from 2000 to 2008 to assess whether the auditor conservatism reported by Geiger et al. (2005) persisted or was transitory. They find that while the proportion of GCOs increased sharply during the 2002–2003 period compared to the 2000–2001 period (as in Geiger et al., 2005), the proportion of GCOs declined during the periods that follow, ultimately returning to its pre-SOX levels.

The exogenous shock of the recent Great Recession (hereafter, GR), which resulted in a significant increase in public company

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[1] Please see Raghunandan and Rama (1995), Geiger et al. (2005), Feldmann and Read (2010), Carson et al. (2013).

[2] Geiger et al. (2005) find that during the audit opinion period 2002–2003 that firms filing bankruptcy were preceded by a GCO in 70% of the cases. In contrast, in the immediate preceding period (2000 – 2001), the rate was 40%. The findings of Geiger et al. (2005) toward more conservative auditor going-concern reporting in the immediate period following the Sarbanes-Oxley Act (hereafter, SOX) are consistent with the results reported by Fargher and Jiang (2008).

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bankruptcies, re-ignited interest in auditor reporting on financially distressed firms.[3] Carson et al. (2013) note that concerns about the accuracy of auditor going-concern reporting were especially salient during the GR. Geiger, Raghunandan, and Riccardi (2014) also stress that it is during periods of economic strife, similar to the GR, when investors look to auditors for guidance in evaluating the continuing viability of companies. Hence, in this paper, we examine the prior audit opinions for 340 public companies that filed for bankruptcy during the years 2006–2015.

Motivation for this study comes from the need to assess if the severity and duration of the GR resulted in a relatively long-lasting change toward conservatism in auditor reporting on bankrupt clients. Carson et al. (2013; p. 28) state that "whenever there is a sudden external shock, it is natural to think that there will be an immediate reaction; *a more important question, perhaps, is how long the effects last.* [Emphasis added]" In line with Carson et al.'s (2013) point of emphasis, we first examine whether auditor conservatism changed in response to the GR and then test whether auditors' response to GR persisted during the post-GR periods.

As a result of our empirical analysis, we find that the proportion of GCOs increased 21.2 percentage points moving from the pre-GR to the GR period. Consistently, the multivariate analysis, which controls for confounding factors, shows that auditors were significantly more conservative during the GR period (9/2008–12/2010) when compared to the pre-GR period (1/2006–8/2008). In contrast, the multivariate analysis shows no indication of a significant change in auditors' propensity to issue GCOs during the GR and post-GR periods.[4] These results support the conclusion that the increase in auditor conservatism associated with the onset of the GR was long-lasting in nature.

We also evaluate the changes in audit opinion decisions as a combination of changes in auditor reporting strategies and changes in client risk characteristics using the decomposition technique discussed in Francis and Krishnan (2002) and subsequently employed by Geiger et al. (2005) and Feldmann and Read (2010). As a result of this analysis, we find that the 21.2 percentage point increase in the average probability of receiving a GCO during the GR compared to the pre-GR period can be decomposed into a 13% increase related to auditor conservatism (61% of the total) and an 8.2% increase related to clientele risk (39% of the total). Of particular interest, as it relates to our findings of relatively long-lasting auditor conservatism, we find that the variation in the proportion of GCOs from the GR period to either of the two post-GR recovery periods (i.e., 2011–2013 and 2014–2015) is due largely to changes in clientele characteristics (less risky), as opposed to any significant change in the conservative reporting strategy adopted by auditors following the start of the GR. In other words, we find no evidence of a reduction in auditor conservatism in the aftermath of the GR. Hence, different from Feldmann and Read (2010) who find post-Enron conservative auditor reporting to be temporary, the GR appears to have resulted in a relatively long-lasting auditor conservatism. These findings should interest regulators worldwide who voiced concerns about auditor reporting on financially-distressed clientele (FRC, 2013; IAASB, 2009; IAASB, 2012; PCAOB 2009, 2011a, 2011b).

2. Background and hypotheses

GCOs can be used as a direct measure of audit quality given that the opinion is the sole responsibility of the auditor. An auditor's willingness to issue a GCO can indicate a high level of auditor independence (DeFond, Raghunandan, & Subramanyam, 2002). Geiger et al. (2005) note that in the immediate period following SOX, auditors were more likely to issue GCOs for firms that subsequently declared bankruptcy. Geiger et al. (2005) infer that auditors changed their reporting strategy to restore their reputation for high-quality auditing, reduce their litigation risk, and avoid government intervention given the unprecedented criticism of the profession by regulators, legislators, and the media during that period.[5]

As was the case with the accounting scandals (e.g., Enron) at the beginning of this century, the GR brought to the forefront the responsibility of auditors for assessing the continued viability of their audit clients. Geiger et al. (2014) suggest that this reporting responsibility becomes more problematic in periods of deep economic downturn, such as the GR, when companies are already facing severe financial distress. Hence, auditors may be hesitant to issue a GCO during such adverse operating environments to avoid exacerbating what is already for companies a very challenging time (Kida, 1980). Some observers of the accounting profession contend that more firms filed for bankruptcy without receiving a prior GCO following the onset of the GR compared to the prior period (e.g., Sikka, 2009; Woods, Humphrey, Dowd, & Liu, 2009).[6] In contrast, several studies offer empirical evidence that indicate otherwise. Geiger et al. (2014) using a sample of U.S. stressed companies find that the propensity of auditors to issue a GCO on a subsequently bankrupt client is significantly greater after the onset of the GR than in the immediate period preceding it. Also, while they do not assess auditor reporting on bankrupt companies, Xu, Jiang, Fargher, and Carson (2011) and Xu, Carson, Fargher, and Jiang (2013) find that auditors in Australia are more likely to issue a GCO during the GR period compared to the period just before it began. Hence, based on the evidence provided by these researchers, we expect to find an increase in auditor propensity to issue a GCO following the onset of the GR compared to the immediate prior period.[7] Thus, the first hypothesis examined in this study is:

H1. Bankrupt companies are more likely to have received a prior GCO following the start of the GR than in the immediately preceding period.

The findings from Geiger et al.'s (2014) analysis of the likelihood of auditors' issuing GCOs on bankrupt companies suggest increased auditor conservatism after the start of the GR. It is unclear, however, whether such reporting behavior is long-lasting or temporary. On the one hand, it is plausible that auditors became more hesitant to risk losing or alienating clients by issuing a GCO once the GR was over and economic conditions in the U.S. showed signs of improvement. On the other hand, it may be that the increased scrutiny auditors faced during the GR from the Public Company Accounting Oversight Board with its 2008 issuance of Staff Audit Practice Alert (SAPA) No. 3, Audit Considerations in the Current Economic Environment (PCAOB, 2008), resulted in heightened auditor conservatism over the long-term with regard to their propensity to issue a GCO to a soon-to-be bankrupt client. SAPA No. 3 noted that during the GR more companies than usual might be experiencing prolonged negative financial effects.

Hence, in response to the deepest economic recession since the Great Depression, auditors following the onset of the GR may have changed their reporting strategy and implemented a relatively long-

[3] Perhaps owing to the severity and scope of its economic hardships, the Associated Press in February 2010 began referring to the recent global economic meltdown as the 'Great Recession' (hereafter, GR).

[4] After the GR period comes to an end, the fraction of GCOs in our sample decline 10.78 to 15.02% depending on different post-GR period definitions. We find, however, that this decrease is largely due to confounding factors. The multivariate analysis, which controls for confounding factors, shows that auditors maintained their heightened conservatism during the entire post-GR period (1/2011–12/2015).

[5] Although SOX was enacted on July 30, 2002, Geiger et al. (2005) report that the media and congressional spotlight of the auditing profession was almost entirely unfavorable starting in late 2001 resulting in a changed (more conservative) environment of auditing in the U.S.

[6] In addition, regulators in the U.S. were critical of auditors for their apparent failure, in several cases, of not issuing a GCO during the GR to audit clients prior to their filing for bankruptcy (PCAOB, 2009, 2011a, 2011b).

[7] Although Geiger et al. (2014) find that the propensity of auditors to issue a GCO prior to bankruptcy significantly increased after the onset of the GR, we replicate H1 in this paper given differences in our respective sample sizes (discussed in the next section).

lasting conservative approach to their going-concern decisions. Given the enormity of the GR and its lingering economic effects (Ettredge, Fuerherm, Guo, & Li, 2017), we expect that auditors' going-concern decisions on bankrupt clients will show evidence of long-lasting conservatism. Accordingly, our second hypothesis is:

H2. The propensity of auditors to issue a GCO to a subsequently bankrupt client in reporting periods following the end of the GR is not statistically different from that of the GR period.

3. Research method

3.1. Data

Using BankruptcyData.com, we identify public companies that filed for bankruptcy from January 1, 2006 through December 31, 2015. We require that the audit opinion date is post-December 31, 2005. We follow prior research (Feldmann & Read, 2010; Geiger et al., 2005) and use the audit opinion date instead of the bankruptcy filing date to classify an observation into one of four time periods. Consistent with Geiger et al. (2005) and Feldmann and Read (2010), we exclude companies in the financial services sectors (SIC = 60 to 69) as well as firms that are not financially distressed.[8]

We use Audit Analytics to identify the annual financial filing (10-K) for which the audit opinion date is 12 months or less prior to the bankruptcy filing date. With respect to the audit opinion issued in the year preceding the filing of bankruptcy, Audit Analytics also informs us as to whether the firm received an unmodified audit opinion (Type II reporting error) or was issued a GCO (no error) as well as the identity of the auditor issuing the opinion. Finally, we use Compustat and annual report filings to acquire relevant financial and industry data, specifically company size, financial variables to predict bankruptcy and whether the company was in default (technical or payment). Each financial statement variable is measured using data from the fiscal year that corresponds to the auditor opinion. Table 1 shows our sample selection process which results in a final sample size of 340 observations.[9]

3.2. Empirical model

We use a logistic regression model with audit opinion type as the dependent variable to examine if auditors' propensity to issue a GCO changes over time. We include control variables that are used in prior research (e.g., Carcello, Hermanson, & Huss, 1995; Geiger et al., 2005; McKeown, Mutchler, & Hopwood, 1991), representing various client and auditor characteristics. Our control variables include (1) firm size (using log of annual sales dollars), (2) probability of bankruptcy (using the Hopwood, McKeown, & Mutchler, 1994 model to compute the probability of bankruptcy), (3) default status, (4) reporting lag (measured by the square root of the number of days between the fiscal year-end to the audit opinion date), (5) bankruptcy lag (measured by the square root of the number of days from the date of the audit opinion to the bankruptcy filing date). We also include dichotomous variables to represent whether the company was in a risky industry, and audit firm type.[10]

The variables of interest in our model are the four time periods during which the audit opinion is dated. The variable, *Time1* (our pre-GR period), is for audit opinions issued after December 31, 2005 but before September 1, 2008. We follow Geiger et al. (2014) and use September 1, 2008 as the start of the GR.[11] While the GR officially ended in the U.S. in June 2009 (NBER, 2010), its effects lingered for far longer (Ettredge et al., 2017).[12] We, therefore, extend the GR period through 2010.

We include, in our analysis, two post-GR recovery periods that total five years. Specifically, *Time3* includes audit opinions dated January 1, 2011 through December 31, 2013, and *Time4* encompasses bankruptcies for which the audit opinion date is from January 1, 2014 through December 31, 2015. Note that the variable, *Time2*, is excluded from our empirical model. Hence, the coefficients on the variables *Time1*, *Time3*, and *Time4* facilitate comparisons to *Time2*, the GR period. A negative coefficient for any of the time variables indicates that the probability of issuing a GCO is lower relative to *Time2*.

We examine the relationship between the type of audit opinion (our dependent variable) issued in the year preceding the filing of bankruptcy and the variables previously discussed using the following logistic regression model:

$$\begin{aligned} Going\_Concern = {} & b_0 + b_1 Ln(Sales) + b_2 ProbBankruptcy + b_3 Default \\ & + b_4\, BankruptcyLag + b_5 ReportingLag \\ & + b_6 RiskyIndustry + b_7 Auditor + b_8 Time1 + b_9 Time3 \\ & + b_{10} Time4 \end{aligned}$$

where: *Going_Concern* = 1 if audit opinion has a going-concern modification, and 0 otherwise; *Ln*(*Sales*) = natural log of sales; *Prob_Bankruptcy* = probability of bankruptcy measured by Hopwood's score; *Default* = 1 if the company is in default, and 0 otherwise; *Bankruptcy_Lag* = square root of the number of days between audit opinion date to bankruptcy date; *Reporting_Lag* = square root of the number of days from fiscal year-end to the audit opinion date; *Risky_Industry* = 1 if the company operates in a risky industry, and 0 otherwise; *Auditor* = 1 if a Big 4 auditor, and 0 otherwise; *Time1* = 1 if audit opinion date is 1/1/2006—8/31/2008, and 0 otherwise; *Time3* = 1 if audit opinion date is 1/1/2011—12/31/2013, and 0 otherwise; and *Time4* = 1 if audit opinion date is 1/1/2014—12/31/2015, and 0 otherwise.

Consistent with prior research (Fargher & Jiang, 2008; Feldmann & Read, 2010; Geiger et al., 2005), we expect a positive relation between the probability of receiving a GCO and financial stress (*Prob_Bankruptcy*), default status (*Default*), audit report lag (*Reporting_Lag*), auditor type (*Auditor*), and whether the company is operating in a risky industry (*Risky_Industry*). We predict a negative association between the chances of receiving a GCO and client size (ln(*Sales*)), and bankruptcy lag (*Bankruptcy_Lag*). We winsorize continuous variables at the 1st and 99th percentiles.

[8] Following prior studies (Feldmann & Read, 2010; Geiger et al., 2005) in this particular line of research, we define a firm as being in financial distress if it has any one of the following measures: (1) bottom line loss, (2) negative working capital, or (3) negative retained earnings.

[9] Geiger et al. (2014), in finding that auditors have a greater propensity to issue a GCO on a subsequently bankrupt client after the onset of the GR than in the immediate preceding period, use a sample of 414 firms over the period 2004–2010. Over the period 2006–2010, for which both studies identify non-financial, stressed publicly-held firms, our sample is smaller. This is because in replicating Feldmann and Read (2010), we identify our initial sample of bankrupt firms using Bankruptcydata.com. In contrast, Geiger et al. (2014) use two data sources (Bankruptcydata.com and Audit Analytics).

[10] Following Kasznik and Lev (1995), risky industries are represented by SIC codes 2833–2836 (drugs), 3570–3577 (computers), 3600–3674 (electronics), 7372–7389 (programming), 8731–8734 (research and development). We use an indicator variable to control for audit firm-size effects.

[11] While the GR technically began in the U.S. in December 2007 (NBER, 2010), the Senate Subcommittee on Investigations (U.S. Senate, 2011) determined September 2008 as a trigger to the beginning of the GR in U.S., when several major financial firms either collapsed (e.g., Lehman Brothers), were taken-over (e.g., Merrill Lynch to Bank of America), or were financially bailed out by the U.S. Government (e.g., Fannie Mae).

[12] Ettredge et al. (2017) note that the GR in the U.S. was longer than any other recession since World War II. It had more severe negative effects on gross domestic product, jobs, and retail sales than preceding economic downturns.

Table 1
Sample selection details.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Public company bankruptcies Identified from BankruptcyData.com	66	75	151	203	109	94	93	78	61	80	1010
Less:											
Audit opinion dated pre 1/1/2006	12										12
In the financial services	6	8	14	31	25	9	9	5	6	6	119
No audit opinion with 1 year prior to filing for bankruptcy	21	25	57	54	40	40	39	47	27	36	388
Not in Compustat	7	13	23	33	16	11	12	0	1	4	120
Insufficient data in Compustat	1	1	8	5	4	4	1	1	1	2	28
Not financially stressed	0	1	3	1	0	0	0	0	0	0	5
Final sample	19	27	46	79	24	30	32	25	26	32	340

Final sample classified by audit opinion date

Year of bankruptcy	1/1/2006–8/31/2008 Time period 1	9/1/2008–12/31/2010 Time period 2	1/1/2011–12/31/2013 Time period 3	1/1/2014–12/31/2015 Time period 4	Total
2006	19				19
2007	27				27
2008	46				46
2009	27	52			79
2010		24			24
2011		13	17		30
2012			32		32
2013			25		25
2014			6	20	26
2015	–	–	–	32	32
Total	119	89	80	52	340

4. Results

4.1. Descriptive statistics

For each time period, Table 2 reports statistics on the type of audit opinion issued in the year preceding the filing of bankruptcy for the 340 companies comprising our sample. For the pre-GR period (*Time1*), approximately 50% of subsequently bankrupt firms received a GCO prior to the date of their bankruptcy filing. For subsequently bankrupt companies that were issued an audit opinion during *Time2* (the GR period), approximately 71% received a GCO. In each of our two post-GR recovery periods (*Time3* and *Time4*), the GCO issuance rate exceeds that of *Time1* and continues to be above the historical norm of approximately 50%. With a Chi-square statistic of 9.67 ($p < 0.05$), the data displayed in Table 2 indicate that the time period is significantly associated with the type of audit opinion issued.

Table 3 displays descriptive statistics for our model's control variables, as partitioned by time period and by audit opinion type. Table 3 also shows those variables by time period and with all time periods combined where significant differences exist between GCO and non-GCO firms. Overall, the data indicate that companies are more likely to receive a GCO if they are smaller (based on sales), have a higher probability of bankruptcy score, have a shorter time lag between the audit opinion date and bankruptcy filing date, have a longer time lag between the fiscal year-end and opinion date, are in default, and audited by Big 4 auditors. Despite this finding when combining all time periods, several comparisons between the non-GCO and GCO subgroups are not significantly different at conventional levels across individual time periods.

We also examined the Pearson correlations for the independent variables in the model. In un-tabulated results, we find that all correlations are < 0.50 except for the pairwise correlation of 0.52 between ln(*Sales*) and *Auditor*. We calculate the variance inflation factors (VIFs) and find that the average VIF is 1.39 and that *ln*(*Sales*) has the highest VIF at 1.84. Since none of the VIFs exceeds 10, we conclude that multicollinearity is not at a level that would adversely affect our multivariate results.[13]

Table 2
Audit opinions for bankrupt companies by time period: number and percentage.

Type of audit		Time period				Total
		Time period 1	Time period 2	Time period 3	Time period 4	
Opinion	Issued	1/1/06–8/31/08	9/1/08–12/31/10	1/1/11–12/31/13	1/1/14–12/31/15	
Going-concern modified		59 50%	63 71%	48 60%	29 56%	199 59%
Not modified		60 50%	26 29%	32 40%	23 44%	141 41%
Total Sample		119 100%	89 100%	80 100%	52 100%	340 100%

Time periods are defined as follows: 1/1/06–8/31/08 = immediate period preceding GR; 9/1/08–12/31/10 = GR period; 1/1/11–12/31/13 = immediate post-GR recovery period; and 1/1/14–12/31/15 = subsequent post-GR recovery period.

4.2. Multivariate analysis

Results from the logistic regression analysis are displayed in Table 4. The overall model is highly significant with a Chi-square of 166.46 ($p < 0.0001$) and a pseudo-R^2 of 0.36. The control variables for firm size, probability of bankruptcy, reporting lag, bankruptcy lag, default status, and risky industry are significant and in the expected direction. The only variable that is not statistically significant is *Auditor*.

With respect to the variables of interest in the model that relate to the time periods during which the audit opinion is issued, we find a significant negative coefficient ($p = 0.02$) corresponding to the audit opinion dates 1/1/2006—8/31/2008 (*Time1*). This indicates that, as predicted in our first hypothesis, bankrupt firms are more likely to have

[13] Kutner, Nachtsheim, and Neter (2004) suggest multicollinearity is unlikely to be a serious issue if the VIFs are < 10.0.

Table 3
Descriptive statistics: mean by time period and by audit opinion type.

Time period		n	Sales	Prob_Bankruptcy	Bankruptcy_Days	Reporting_Days	Default	Risky_Industry	Auditor
1	GCO	59	104.6	0.70	199.54	99.08	0.46	0.27	0.27
	No GCO	60	1118.9	0.29	261.45	88.03	0.18	0.18	0.63
	Total	119	616.0**	0.49**	230.76*	93.51	0.32**	0.23	0.45**
2	GCO	63	844.5	0.66	163.62	99.49	0.59	0.19	0.49
	No GCO	26	1043.2	0.40	231.85	79.88	0.12	0.19	0.62
	Total	89	902.5	0.59**	183.55**	93.76*	0.45**	0.19	0.53
3	GCO	48	300.3	0.64	167.50	101.52	0.44	0.33	0.33
	No GCO	32	1613.7	0.40	235.72	73.91	0.13	0.25	0.66
	Total	80	825.7*	0.55*	194.79**	90.47**	0.31**	0.30	0.46**
4	GCO	29	694.6	0.52	147.93	107.93	0.48	0.07	0.45
	No GCO	23	578.8	0.28	227.00	72.61	0.04	0.17	0.61
	Total	52	643.4	0.41	182.90*	92.31**	0.29**	0.12	0.52
Total	GCO	199	472.0	0.65	172.92	101.09	0.50	0.23	0.38
	No GCO	141	1129.1	0.34	244.53	80.81	0.13	0.20	0.63
	Total	340	744.5**	0.52**	202.62*	92.68**	0.35**	0.22	0.49**

Variable definitions: Sales = sales in million; Prob_Bankruptcy = Hopwood's probability of bankruptcy; Bankruptcy_Days = days between the audit opinion date and bankruptcy date; Reporting_Days = days between the fiscal year end and the audit opinion date; Default = 1 if a company is in default on debt, 0 otherwise; Risky_Industry = 1 if a company operates in a risky industry, 0 otherwise; Auditor = 1 if Big 4 auditor, 0 otherwise.

* Significant difference between No GCO and GCO subsets at p-value < 0.05.

** Significant difference between No GCO and GCO subsets at p-value < 0.01.

Table 4
Results of logistic regression (n = 340). Model: $Going\_Concern = b_0 + b_1 Ln(Sales) + b_2 Prob\_Bankruptcy + b_3 Default + b_4 Bankruptcy\_Lag + b_5 Reporting\_Lag + b_6 Risky\_Industry + b_7 Auditor + b_8 Time1 + b_9 Time3 + b_{10} Time4$

Variable	Expected Sign	Coefficient	*t*-Statistic	p-Value	VIF
Constant	+	2.426	1.71	0.09	
Ln(Sales)	–	− 0.457	− 5.13	0.00	1.84
Prob_Bankruptcy	+	0.917	2.63	0.01	1.39
Default	+	1.644	4.69	0.00	1.22
Bankruptcy_Lag	–	− 0.187	− 4.44	0.00	1.24
Reporting_Lag	+	0.233	2.18	0.03	1.12
Risky_Industry	+	− 0.770	− 2.01	0.04	1.19
Auditor	?	0.157	0.47	0.64	1.46
Time1	–	− 0.886	− 2.30	0.02	1.60
Time3	?	− 0.066	− 0.16	0.88	1.49
Time4	?	− 0.368	− 0.76	0.45	1.38
Observations		340			
Chi-square		166.457			
p-Value		0.000			
Pseudo R-square		0.361			
Nagelkerke R-square		0.521			
Area under ROC Curve		0.881			

Variable definitions: *Ln_Sales* = natural logarithm of sales (sales in thousands); *Bankruptcy_Lag* = square root of the days between the audit date and bankruptcy date; *Reporting_Lag* = square root of the days between fiscal year end and the audit opinion date; *Time1* = 1 if audit opinion dated between 1/1/2006 and 8/31/2008; *Time2* = 1 if audit opinion dated in 2011–2013; and *Time3* = 1 if audit opinion dated in 2014–2015. See Table 3 for definitions of all other variables.

received a GCO prior to filing for bankruptcy following the onset of the GR compared to the immediate preceding period. With respect to the post-GR periods (*Time3* and *Time4*), the coefficients for each, while negative, are not significantly different from *Time2*. Hence, in support of H2, we find that the propensity of auditors to issue a GCO to a subsequently bankrupt client in reporting periods following the end of the GR is not statistically different from that of the GR period.

4.3. Additional analysis

We follow Geiger et al. (2005) and Feldmann and Read (2010) and use the technique implemented by Francis and Krishnan (2002) to decompose the average change in auditors' propensity to issue GCOs between time periods into two possible factors: clientele risk characteristics and auditor reporting strategy. Table 2 indicates that approximately 50% of the soon-to-be bankrupt companies received a GCO during the pre-GR period (*Time1*) before filing for bankruptcy. During our GR period (*Time2*), the chances of being issued a GCO increased to 71%. When we decompose this total change of 21.21% (p-value 0.000), we find, as shown in Table 5, that 8.22% (p-value 0.078) relates to worsening client characteristics (about 39% of the total) and 12.99% (p-value of 0.006) corresponds to auditor reporting strategy (increased auditor conservatism).

We repeat the procedure comparing *Time2* to the two post-GR recovery periods (*Time3* and *Time4*). We see in Table 5 that the total change in probability from *Time2* to *Time3* is − 10.78% (p-value 0.025). The decomposition analysis indicates that − 11.3% (p-value 0.023) of the total change can be attributed to improvements in client risk

Table 5
Decomposition of changes in probability of going-concern modified audit opinion.

Time period	Change in overall going-concern probability			Component due to change in clientele risk characteristics			Component due to change in auditor reporting strategy		
	Change in average probability (%)	*t*-Statistic	p-Value	Change in average probability (%)	*t*-Statistic	p-Value	Change in average probability (%)	*t*-Statistic	p-Value
1/1/2006–8/31/08 versus 9/1/08–12/31/10	21.21	4.77	0.000	8.22	1.77	0.078	12.99	2.79	0.006
9/1/08–12/31/10 versus 1/1/2011–12/31/2013	− 10.78	− 2.26	0.025	− 11.30	− 2.29	0.023	0.52	0.1	0.922
9/1/08–12/31/10 versus 1/1/2014–12/31/2015	− 15.02	− 2.79	0.006	− 10.82	− 1.97	0.051	− 4.20	− 0.63	0.531

Time periods are defined in Table 2.

characteristics and the balance, 0.52%, is due to increased auditor conservatism. Thus, the reason why the odds of being issued a GCO showed a net decrease in the immediate GR recovery period (*Time3*) compared to the GR period relates entirely to an improvement in clientele risk characteristics and not to a reduction in auditor conservatism. When we compare the total change from the GR period to the more recent post-GR period (*Time4*), we find that the decrease in the average probability of being issued a GCO relates primarily to less risky audit clients. That is, controlling for changes in client risk characteristics between the two periods, we expect the chances of being issued a GCO in *Time4* to be about 67%.

Overall, the results of the decomposition analysis, presented in Table 5, demonstrate that the variation in the proportion of GCOs from the pre-GR period to the GR period is largely attributable to a shift to conservatism in auditors' reporting strategy. In contrast, the variation in the proportion of GCOs from the GR period to either of the two post-GR periods (i.e., 1/1/11–12/31/13 and 1/1/14–12/31/15) is due primarily to a change in client risk characteristics (i.e., less risky) as opposed to a significant change in the conservative reporting strategy adopted by auditors following the onset of the GR.

4.4. Sensitivity tests

In this section, we report the results from several sensitivity tests that we performed to assess the robustness of our results. First, we use alternative cut-off dates to define the GR period. Specifically, we define the GR period as encompassing the 19-month period from December 2007 through June 2009 (instead of September 2008 through December 2010). Using these cut-off dates for the GR period and after corresponding adjustments are made to the cut-offs of the immediate preceding period (*Time1*) and subsequent period (*Time3*), our results remain largely unchanged from that reported in the paper for such alternative time specifications. Second, since recent prior research suggests that the propensity to issue GCOs differs between Big N and non-Big N auditors,[14] we test whether the interaction between the time period and auditor variables is statistically significant. We find no statistical difference between the levels of conservatism among Big 4 and non-Big 4 auditors for any of the time periods.

As noted previously, we follow prior research (Feldmann & Read, 2010; Geiger et al., 2005) and restrict our analysis to financially-distressed companies (defined as those having at least one of the following stress factors: (1) negative net income, (2) negative working capital, or (3) negative retained earnings). However, Blay and Geiger (2013) suggest that a highly-stringent control sample (distressed companies having both negative net income and negative operating cash flows) is more appropriate for examining auditor going-concern decisions since such firms are more likely to generate extensive consideration of a GCO from their auditor.[15] When we apply the more stringent criteria of Blay and Geiger (2013) to our primary sample of 340 companies, we identify a sub-sample of 209 soon-to-be bankrupt companies that have both a bottom line loss and negative operating cash flows. Using this more stringent sample, our results remain qualitatively similar to those reported in the paper in Table 4.

Lastly, as part of sensitivity analysis, we re-estimate the regression model using *Time1* (instead of *Time2*) as our holdout period. Hence, we compare auditor going-concern decisions during three periods (*Times2*, *3*, and *4*) following the onset of the GR to the auditor going-concern decisions of the pre-GR period (*Time1*). If the GR resulted in a relatively long-lasting change toward conservatism in auditor going-concern decisions on bankrupt clients, we would anticipate this alternative comparative analysis to reveal results that are consistent with those that are reported in the paper. We find that the unconditional probabilities of issuing a GCO are higher during the GR and each of the two post-GR periods compared to the pre-GR period. For the variable, *Time4*, we also find a higher level of conservatism (relative to the pre-GR period) albeit being statistically insignificant at conventional levels. Overall, the significantly higher coefficients on *Time2* ($p = 0.02$) and *Time3* ($p = 0.04$) support our main inference that the GR is associated with an increased level of auditor reporting conservatism that is sustained throughout much of the post-GR periods.

5. Summary and conclusions

More GCOs are generally interpreted by the literature as enhanced auditor independence (DeFond & Zhang, 2014). Prior research finds a sharp increase in the propensity of auditors to have issued a GCO prior to their client's filing for bankruptcy in the post-SOX period 2002–2003. However, such evidence of auditor reporting conservatism was found to be short-lived as the proportion of going-concern modified opinions issued to subsequently bankrupt clientele declines over time to its historical, pre-SOX level.

In this paper, we examine the prior audit opinions for a sample of 340 U.S. public firms that filed for bankruptcy during the years 2006–2015, a period that encompasses the GR. Motivation for this study comes from a need to assess if the severity and duration of the GR resulted in a relatively long-term change toward conservatism with respect to auditor reporting on bankrupt clients. Ettredge et al. (2017) indicate that the GR was longer than any other recession since World War II, and that it had more severe negative effects on gross domestic product, private sector jobs, and retail sales than preceding recessions. Additional motivation comes from Carson et al. (2013) who suggest a need for empirical research into auditor reporting surrounding the GR using U.S. data.

Our analysis presents evidence that auditors were significantly more likely to issue a GCO prior to their client's filing for bankruptcy following the onset of the GR. Further, in potentially important results that suggest a measure of long-lasting reporting conservatism, we find no significant change in the propensity of auditors to render a GCO in either of the post-GR recovery periods when compared to going-concern decisions made during the GR. Finally, when we follow Francis and Krishnan (2002) and decompose the average change in auditors' propensity to issue GCOs between the pre-GR period (2006–2007) and the GR period (2008–2010), we find that about 61% of the 21% point increase in going-concern rates for bankrupt firms following the onset of the GR is attributable to increased auditor reporting conservatism. In other words, we find that the variation in the proportion of GCOs from the GR period to either of the two post-GR recovery periods (i.e., 2011–2013 and 2014–2015) is attributable largely to less risky clientele and not to a significant change in the conservative reporting strategy implemented by auditors after the start of the GR. Hence, unlike the accounting scandals (e.g., Enron) at the beginning of this century and the ensuing legislative action (SOX) and media scrutiny that led to enhanced auditor conservatism in the short-term, it would appear that the most serious crisis to impact the U.S. economy since the Great Depression resulted in a long-lasting measure of auditor conservatism with respect to their going-concern reporting decisions. These findings should be of interest to regulators in the U.S. and in the international arena who voiced concerns about auditor reporting on financially-distressed clientele (FRC, 2013; IAASB, 2009; IAASB, 2012; PCAOB, 2009, 2011a, 2011b).

While our analyses present evidence of long-lasting auditor conservatism, this paper does not claim that improved conservatism

[14] Myers, Schmidt, and Wilkins (2014) find that post-SOX non-Big N auditors became more conservative while Big N auditors became more accurate in the issuance of GCOs.

[15] Using a highly-stringent U.S. sample, Blay and Geiger (2013) find a negative association between the magnitude of non-audit service (NAS) fees paid to the auditor and the propensity of the auditor to issue a GCO during the post-SOX period 2004–2006. In contrast, prior U.S. research (DeFond et al., 2002; Lim & Tan, 2008; Robinson, 2008) that has employed a less stringent sample of distressed companies (either a bottom line loss or negative cash flow) has generally not documented a significant relationship between NAS fees and going-concern decisions.

translates into higher audit quality. It may be that in the aftermath of the GR, auditors began reporting more conservatively on going-concern uncertainties rather than increasing audit effort. Hence, auditors may have issued proportionately more GCOs to financially-distressed companies to deter regulatory criticism and limit the legal exposure that often arises from Type II errors. DeFond and Zhang (2014) note that Type I errors (GCOs for subsequently viable firms) occur nearly 90% of the time. Hence, a possible extension of this study would be an examination of whether there has been an increase in Type I errors following the onset of the GR.

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