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Client pressure and auditor independence: Evidence from the "Great Recession" of 2007–2009 ☆

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ABSTRACT

This study investigates whether auditors' independence was compromised by client audit fee pressures during the recession of December 2007 through June 2009. We hypothesize that clients able to extract fee concessions from auditors during the recession, when audit risk increased, might also have been able to obtain more favorable audit opinions. We find that auditors are less likely to issue first-time going concern (GC) opinions to clients that exert fee pressure in 2008, but do not find this result in other years, including several years before and following the central recession year of 2008 (i.e. 2005–2007, 2009–2011). Our results suggest that the stringent economic environment of the recession may have weakened auditor independence for clients capable of exerting audit fee pressure, but this effect was restricted to 2008, the heart of the recession. We also find compensating payments (in the form of expected total fee increases or high current-year NAS fees) from fee pressure clients strengthen the negative association between fee pressure and auditors' GC opinions.

1. Introduction

Possible impairment of auditor independence has been a longstanding concern of regulators, legislators and market participants (SEC, 2000; Sarbanes-Oxley 2002 (SOX); PCAOB, 2010). This study investigates whether auditors acted with less independence for clients that were able to impose pressure on audit fees during the severe economic downturn of 2007–2009. Auditor independence sometimes requires auditors to take positions that client managers will dislike (DeAngelo, 1981; Watts and Zimmerman, 1986). The modification of an audit report for going concern (GC) reasons is a decision likely to displease client managers. Thus, following prior studies that have investigated possible auditor economic dependence on the client (as discussed in Carson et al., 2013; DeFond and Zhang, 2014), our proxy for auditor independence is auditors' willingness to issue first-time GC modified opinions to financially distressed clients. The economic downturn examined in this study is the "Great Recession",[1] which began in the U.S. in December of 2007 and officially ended in June of 2009 (NBER, 2010).

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[1] In February, 2010 the Associated Press added the term "Great Recession" to its stylebook as a reference for the recession of 2007–2009 (Schlisserman, 2010). We refer to this event as "the Recession".

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The effects of the Recession, however, lingered for more than an additional year and imposed severe financial pressures on many companies.[2]

We view the Recession as an important setting in which to revisit the issue of auditor independence for the following reasons. First, a GC modified opinion imposes significant economic costs on a client firm, such as negative stock returns and increased risk of client business failure (Mutchler, 1984; Menon and Schwartz, 1987; Geiger et al., 1998; Kausar et al., 2009). Thus clients sometimes pressure auditors not to issue first-time GC opinions and dismiss auditors who do issue such opinions (Carcello and Neal, 2000, 2003). The economic costs to clients associated with receiving GC opinions are likely to have increased significantly during the Recession when availability of financing was limited even for companies not stigmatized by GC opinions. Clients therefore might have been more averse than usual to the prospect of receiving GC opinions during the Recession, whereas the numbers of companies deserving such opinions probably increased.[3]

Prior studies examining auditors' willingness to issue GC opinions generally do not find that auditors compromise their independence for important clients (DeFond et al., 2002; Li, 2009; DeFond and Zhang, 2014), although those studies are conducted during periods with less severe economic conditions.[4] The extent to which auditors maintain their independence in a very stringent economic environment, characterized by increased client financial distress and reduced audit revenues, is unknown.[5] It is plausible that auditors were more reluctant than usual to risk losing clients during the Recession, which was a period of downward pressure on audit fees and of increased financial challenges for auditors (Ettredge et al., 2014). Therefore, the Recession provides a unique setting in which managers of many firms were likely to have had stronger incentives to avoid receiving GC opinions, and auditors were also under greater pressure not to lose clients due to already reduced audit revenues. Whether auditors are able to maintain their independence with respect to desirable clients in this situation is unknown.

The independence of auditors in relation to their GC decisions has also attracted the attention of regulators. The PCAOB is concerned that downward pressure on audit fees might cause some auditors to take cost cutting actions that could compromise audit quality (PCAOB, 2010, 26). The PCAOB noted that as the economic crisis (Recession) developed, the risk in certain audit areas increased, including the ability of clients to continue as going concerns (PCAOB, 2010, 4). The PCAOB specifically cautioned auditors to focus on this area of audit risk (PCAOB, 2008, 15).

We investigate whether financially stressed clients able to exert audit fee pressure on their auditors during the Recession also were able to exert pressure on auditors' GC decisions. We focus on audit fee pressure because, as mentioned above, the PCAOB is concerned that downward fee pressure during the Recession could adversely affect audit processes including the GC decision. We argue that a client firm able to exert fee pressure on its auditor during the Recession has demonstrated bargaining power, because a constrained or reduced audit fee in a period of increased audit risk represents a significant concession by the auditor. Clients able to exert pressure on auditors' fees during the Recession therefore might have had greater bargaining power with respect to GC decisions as well. This outcome is by no means certain *ex ante*, however, because potentially distressed clients paying reduced fees could be clients that auditors are more willing to risk losing. Given regulators' concerns whether auditors maintained their audit quality in a uniquely stringent economic environment, and their emphasis on the auditors' GC decisions during the Recession, we argue that the issue we raise deserves empirical study.

If clients successfully exerting fee pressure have made credible promises of compensating payments to the auditors in the future, or if those clients are buying other lucrative services such as non–audit services (NAS) from their auditors, the economic bonding between fee pressure clients and their auditors should be stronger. As a result, we expect the negative relationship between audit fee pressure and auditor GC opinions, if any, will be stronger for clients with larger expected total fee (the sum of audit and non–audit fees) growth (proxied by actual next-year total fee growth), or larger same-year purchases of NAS (proxied by current year NAS fees).[6]

Using a sample of 8581 financially distressed firm-years from 2005 to 2011, we examine whether client pressure impacted auditor propensity to issue a first-time GC opinion during the Recession (late 2007 through the first half of 2009), with attention primarily focused on the deep Recession year of 2008. We also examine periods that are clearly before (2005–2006) and after the Recession (2010–2011) to study if the results observed during the Recession also exist in more normal periods. We measure client pressure using the fee pressure metric in EFL (2014). We calculate client fee pressure for each year in our sample. We then estimate a going concern logistic model for each sample year and find that fee pressure

[2] The Recession was longer than any other since World War II. It also had more severe negative effects on gross domestic product, private sector jobs, and retail sales than preceding recessions (Ettredge et al., 2014).

[3] The number of U.S. commercial bankruptcies for the first eleven months of 2008 was 35 per cent greater than the number filed in the entire year of 2007 (Pugh, 2008). Not only did client risk of bankruptcy increase during the Recession; Trombetta and Imperatore (2014) find that managers increase earnings manipulation activities during severe financial crises including the Recession.

[4] A recent exception to this general result is a study by Chen et al. (2016). Using Chinese data on engagement signing partners, they find that clients are able to "opinion shop" successfully.

[5] Univariate data presented in Carson et al. (2013, TABLE 1, 356) show that among a large sample of U.S. firms, the per cent receiving GC opinions increased modestly in 2007–2009. However, those authors do not control for individual clients' financial conditions or abilities to exert pressure on auditors.

[6] We employ NAS fee levels rather than using actual NAS fee growth to proxy for expected fee growth because evidence we present subsequently indicates that growth in NAS fees was much more difficult to predict during the recession compared to growth in audit fees.

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is significantly associated with first-time GC modified opinions for 2008 and 2009.[7] Specifically, we find that client fee pressure is negatively associated with auditor propensity to issue a going concern opinion in 2008. We find some evidence that auditors may have heeded the PCAOB's (2008, 15) warning and become stricter regarding their willingness to issue GC opinions to clients exerting fee pressure in 2009. That is, the estimated coefficient of the fee pressure variable is positive and significant in 2009. Our results suggest that the stringent economic environment of the Recession may have weakened auditor independence, but this result was restricted to 2008, the heart of the Recession. This finding is consistent with EFL (2014) who find that audit fee pressure was associated with client misstatements in 2008, but not in surrounding years.

Next we turn to the role of expected future total fee increases as well as current NAS fees on the economic bonding between clients exerting audit fee pressures and their auditors, and examine how those two factors affect the relationship between audit fee pressure and auditor GC decisions. To test this, we interact the fee pressure variable and expected future total fee increases or current NAS fees, and regress the GC decision variable against the interactions. If the higher expected future total fee payments or higher current NAS payment further increase the economic bonding between fee pressure clients and auditors, the interaction should be significantly negative. Our interest centers on 2008, the year in which fee pressure is negatively associated with issuance of a GC decision.

We find that each of the interactions is significantly negative. That is, as expected total fee growth (or NAS fees relative to total fees) increase, the association between fee pressure and the GC decision in 2008 becomes more negative. Thus, the expected higher future total fee payments as well as the larger current NAS payments increase the economic bonding between clients successfully exerting audit fee pressures and auditors, which makes auditors less willing to issue GC opinions to those clients. The results also show that audit fee pressure as a stand-alone variable is negatively and significantly associated with GC issuance in 2008, which suggests that fee pressure negatively affects auditors' GC decisions in 2008, even when expected total fee growth is zero or the current NAS fee ratio is zero.[8] Results for the immediately surrounding years, 2007 and 2009, confirm the uniqueness of the deep Recession year, 2008 as the coefficients of the interactions of fee pressure with expected total fee growth, or with current NAS fees, are not significant in either 2007 or 2009.

One could argue that clients successfully exerting fee pressure on auditors are financially more viable companies, otherwise auditors would not grant the fee concessions. Therefore, those clients should receive fewer GC opinions because fee pressure proxies for better client financial health. However, the force of this argument is weakened by the following facts. First, our fee pressure metric is derived from a fee model that includes all standard client risk factors, including client financial conditions. Second, we control for bankruptcy risk in all of our GC decision models. Third, we do not observe similar main effects and interaction effects in years other than 2008. To further mitigate the concern of this alternative explanation, we conduct Type II error tests. Type II error occurs when the auditor does not issue a GC opinion to a client that subsequently fails. If fee pressure proxies for better client financial health that is not otherwise captured in GC decision models, then fee pressure should reduce both the likelihood of a GC modified opinion and the likelihood of subsequent client failure. Thus fee pressure should not be associated with Type II error (i.e. the auditor's reduced likelihood of issuing a GC opinion to a client exerting fee pressure is the "correct" decision). However, using data pooled over years we find a significant positive association between fee pressure and Type II error occurrence (i.e. the auditor's reduced likelihood of issuing a GC opinion to a client exerting fee pressure is the "wrong" decision). This result provides further evidence of reduced auditor independence for fee pressure clients because fee pressure appears to proxy for economic bonding rather than better financial condition.

Our study makes several contributions. First, there is no prior published paper, to our knowledge, that examines the effects of a major economic recession on the association between client bargaining power and auditor independence. While several studies investigate whether auditor GC modified opinions were more prevalent during the Recession (Carson et al., 2013; Geiger et al., 2014), we are not aware of any study that considers how client pressures impacted auditors' GC opinion decisions in that setting.[9]

[7] Our references to audit years can be explained most clearly with respect to clients whose fiscal years correspond to calendar years. For such a client, the 2008 financial reports cover a period ending on December 31, 2008. The 2008 audit is the audit of the 2008 financials, which would have been conducted early in 2009. The 2008 audit report (including the 2008 GC decision) is the report on the 2008 financials, issued early in 2009. The 2008 audit fee is the fee for the same audit. The fee likely was initially negotiated by the end of the first quarter in 2008, early in the Recession. However, the audit fee data for 2008 obtained from Audit Analytics, derived from proxy reports, reflect amounts actually billed to clients. The amounts finally billed for 2008 audits could reflect client fee pressures exerted throughout the second half of 2008, and into early 2009 (through completion of the audit), as the economy deteriorated. This timeline information, together with the empirical fact that many clients' audit fees for 2008 were constrained or even reduced relative to 2007, suggests that 2008 fees were influenced by the onset of the Recession.

[8] The significant negative coefficients of fee pressure as a stand-alone variable (i.e. when expected total fee growth and current NAS fee ratio approximate zero) also suggest that fee pressure is not simply a proxy for the two important types of economic bonding captured by non-zero values of the expected audit fee growth and current NAS fee ratio variables.

[9] Geiger et al. (2014) limit their sample to companies that actually entered bankruptcy. This is a very different sample than our sample, in which only 134 firm-years out of 5581 firm-years are characterized by entry into bankruptcy. The purposes of the two studies also are quite different. Geiger et al. (2014) investigate whether auditors have a greater propensity to issue GC opinions subsequent to the onset of the Recession, which they date as September, 2008. They find that the propensity to issue GC opinions increases as hypothesized. However, given they restrict their sample to subsequently bankrupt clients, their primary models actually explain occurrence or non-occurrence of Type II error: issuing an un-modified opinion to a client that subsequently enters bankruptcy. Our research question is whether such propensity was reduced for clients able to exert fee pressure. We also investigate the role of economic bonding, in the form of NAS fees and expected growth in audit fees, in moderating the association between fee pressure and GC opinions. The Geiger et al. (2014) paper does not study any of these issues. Finally, we treat opinions issued in 2009 (on the 2008 financial reports) as influenced by the Recession. Geiger *et al*. treat opinions issued in 2010 (on the 2009 financial reports) as influenced by the Recession.

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Second, we contribute to the auditor independence literature. Several prior studies have investigated whether distressed clients paying higher fees are more or less likely to receive GC opinions. Although the evidence generally suggests that market-based and institutional incentives (such as litigation and reputation costs) dominate the expected benefits from compromising auditor independence (DeFond et al., 2002; Li, 2009; DeFond and Zhang, 2014), there is evidence using post-SOX data that shows a negative relation between non–audit fees and auditors' propensity to issue GC opinions (Blay and Geiger, 2013). We examine the independence issue using recent data and novel metrics, and in a context where auditor independence is likely to be stressed.

Third, auditors' prior warnings to investors about clients' possible inability to continue as going concerns arguably become especially important as the bankruptcy rate increases during recessions. For instance, the PCAOB issued Staff Audit Practice Alert No.3, which emphasizes the auditor's responsibility to evaluate whether there is a substantial doubt about the company's ability to continue as a going concern (PCAOB, 2008). Thus, identifying factors that impact auditor GC decisions during the recent Recession could also provide useful information to investors and regulators.

Finally, our study is related to, but different from, EFL (2014). EFL (2014) document that audit fee pressure imposed by clients during the Recession negatively affected audit quality in 2008, measured by occurrence of misstatements of audited data.[10] This result suggests that fee pressure leads to reduced audit effort in a severe recession. However, if audit fee pressure simply represents decreased audit effort, and auditor independence is not jeopardized, rational auditors arguably should be more likely to issue GC opinions to distressed clients during the financial crisis. They might hope that such opinions could act as disclaimers, shielding themselves from potential liability, given the increased bankruptcy risk and litigation risk during such a period (Carcello and Palmrose, 1994; Kaplan and Williams, 2013; Aobdia, 2016). Our GC results suggest instead that audit fee pressure impairs auditor independence, as well as audit effort, in a very stringent economic environment.[11]

The remainder of the paper is organized as follows. In Section 2 we provide background on concerns about the effects of the Recession on auditor economic dependence, and the resulting threat to audit independence, including failure to issue GC opinions when warranted. We also state our hypotheses. Section 3 discusses the models, variables, and sample. Section 4 provides major results. Section 5 includes additional analyses, and Section 6 concludes.

2. Background and hypothesis

This section discusses the impact of the Recession on the audit market and states hypotheses regarding the effects of fee pressure threats to auditor independence in that context, i.e. the associations between client fee pressure and auditors' propensity to issue going concern (GC) opinions to potentially distressed clients.

2.1. The possible impact of the Recession on auditor independence

As Panel A of Fig. 1 indicates, the Recession was unusually deep and prolonged compared with others in the post-World War II period. The Recession increased client financial hardship not only through reduced revenues and other operating setbacks, but also due to reduced availability of credit from financial institutions. The very conditions that increased the risk of client financial failure also likely increased auditor economic dependence on clients. Audit fees paid by accelerated filers, scaled by their total revenues, declined by-nine per cent from 2006 to 2008 (Cheffers and Whalen, 2010), and auditors experienced significant pressure to restrain or reduce audit fees even as client risk factors increased (EFL, 2014; PCAOB, 2010). Accounting firms also experienced slower receivables collections (Accounting Today, 2009), potentially leading to cash flow problems. In addition, clients with more powerful CFOs were able to obtain greater audit fee reductions during the Recession (Beck and Mauldin, 2014). Thus, the Recession might have made auditors less willing to risk losing further audit fees and non–audit fees by alienating clients.

On the other hand, auditors were likely under more scrutiny during the Recession. For instance, PCAOB issued Staff Audit Practice Alert (SAPA) No. 3, *Audit Considerations in the Current Economic Environment* in 2008, which emphasizes the auditor's responsibility to evaluate whether there is a substantial doubt about the company's ability to continue as a going concern under the stringent economic conditions (PCAOB, 2008). The global financial crisis also renewed interest in auditor going concern reporting on financially troubled clients (Carson et al., 2013). Geiger et al. (2014) find that auditor propensity to issue going concern opinions to clients that subsequently went bankrupt increased after the onset of the Recession. Xu et al. (2013) and Xu et al. (2011) study going concern opinions in Australia and also find an increase in going concern modifications during the Recession. This suggests that auditors were responsive to the increased risk of failure presented during the Recession. However, it is unclear from prior results if auditors were responsive to all clients equally, or if economic dependence on certain clients impacted auditors' going concern decisions.

[10] In contrast to EFL (2014), Krishnan and Zhang (2014) employ a sample of banks to study the association between several measures of financial reporting quality and the extent of bank audit fee cuts during the Recession. In general, they find no negative impact of fee cuts on financial reporting quality.

[11] Audit effort is conceptually distinct from auditor independence. Based on DeAngelo's (1981) definition of audit quality, audit effort affects the probability that an auditor detects an existing problem, while auditor independence affects the probability that an auditor reports a detected problem. The auditor's willingness to issue a GC modified opinion to a potentially distressed client frequently is interpreted as a proxy for auditor independence. DeFond and Zhang (2014, 285) characterize the auditor's GC opinion decision as one that "uniquely captures auditor independence".

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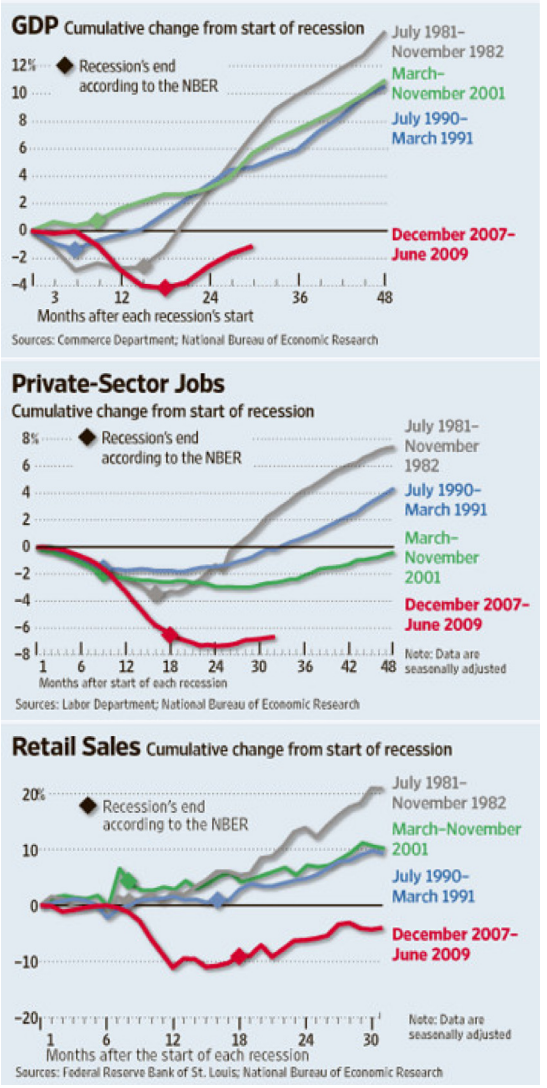
Panel A: Graphs comparing the severity of the Recession to previous economic downturns



Sources: See legends beneath each graph.

Fig. 1. Data illustrating the severity and timing of the Recession of December 2007 through June 2009.

Panel B of Fig. 1 shows the NBER's timeline for the Recession in relation to quarterly percentage changes in real gross domestic product (GDP) and real gross domestic income (GDI) data that formed part of the basis for the NBER's dating decisions. Quarter-to-quarter decreases in GDP and GDI are highlighted. The table indicates that six out of the eight real GDP and GDI changes were negative in 2008, but only-three out of eight were negative in 2009, and those were in the two quarters most adjacent to 2008. Similarly the two quarters in 2007 exhibiting negative growth in GDI were the two quarters most adjacent to 2008. The National Bureau of Economic Research (NBER) relied on these data (among others) in deciding that the Recession began in December of 2007 and ended in June of 2009.[12]

[12] At its web site (http://www.nber.org/cycles.html) the NBER states: "The NBER does not define a recession in terms of two consecutive quarters of decline in real GDP. Rather, a recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales." In addition, the NBER further explains that "First, we do not identify economic activity solely with real GDP and real GDI, but use a range of other indicators as well. Second, we place considerable emphasis on monthly indicators in arriving at a monthly chronology. Third, we consider the depth of the decline in economic activity. Recall that our definition includes the phrase, "a significant decline in activity." Fourth, in examining the behavior of domestic production, we consider not only the conventional product-side GDP estimates, but also the conceptually equivalent income-side GDI estimates." (http://www.nber.org/cycles/recessions_faq.html).

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Panel B: The timing (onset and conclusion) of the Recession relative to quarterly percentage changes in GDP and GDI

Yr.	2007				2008				2009			
Qtr.	I	II	III	IV	I	II	III	IV	I	II	III	IV
GDP	0.2	3.1	2.7	1.4	-2.7	2.0	-1.9	-8.2	-5.4	-0.5	1.3	3.9
GDI	1.0	0.6	-2.2	-0.2	0.7	-0.3	-1.8	-7.6	-6.0	0.0	1.9	5.7

NBER's Recession dating: Begins ⟷ Ends

Sources: Bureau of Economic Analysis (BEA) website, Table 1.17.1, and the National Bureau of Economic Research (NBER) website. Quarter-to-quarter percent decreases in real gross domestic product (GDP) and real gross domestic income (GDI) are highlighted using ovals. The table indicates that six out of the eight real GDP and GDI changes in 2008 were negative, but only three out of eight were negative in 2009, and those were in the two quarters most adjacent to 2008. Similarly the two quarters in 2007 exhibiting negative growth in GDI were the two quarters most adjacent to 2008. The National Bureau of Economic Research (NBER) relied on these data (among others) in deciding that the Recession began in December of 2007 and ended in June of 2009.

Fig. 1 (*continued*)

2.2. Client audit fee pressure and auditors' propensity to issue going concern opinions

We investigate the association between client fee pressure and auditor independence using auditors' first-time GC decisions as our proxy for auditor independence. We utilize GC decisions for several reasons. First, the Recession imposed significant financial pressure on public companies. As noted by the PCAOB, this increased audit risk regarding clients' ability to continue as going concerns (PCAOB, 2008, 15). Thus, auditors likely faced a significant increase in situations in which such a judgment was necessary. Second, independence can be viewed as an auditor's willingness to take a position that opposes the wishes of client managers, and thereby risk losing the client (DeAngelo, 1981). The issuance of a GC opinion is an auditor judgment, and the issuance of a GC opinion typically requires that the auditor be independent of the client.

Several studies have considered whether high audit fees or high non–audit fees reduce auditor independence in the GC setting. Defond et al. (2002) find no relationship between propensity to issue a GC opinion and levels of audit fees, non–audit fees, and total fees. Geiger and Rama (2003) find a positive relationship between increased audit fees and issuance of GC opinions for financially stressed companies. Lisic et al. (2015) report that the ratio of NAS fees paid by Big 4 audit clients to total fees paid by the clients is not associated with subsequent occurrences of Type I and Type II GC reporting errors. Several studies also consider whether independence exists when client importance is assessed at the local office level. Certain clients may generate significant portions of revenues at the local level but be less significant at the national firm level (Francis et al., 1999). Thus it is important to consider independence from key clients at the local office level. Studies using local office data find a positive relationship between client importance and auditors' propensity to issue GC opinions (Reynolds and Francis, 2000; Li, 2009). These results suggest that in fact auditors tend to be more independent for important clients.[13] A possible explanation is that auditors view more important (larger) clients as generating higher litigation risk (Reynolds and Francis, 2000).

In contrast, Blay and Geiger (2013) find a lower propensity to issue GC opinions for financially stressed companies when future total fees or current non–audit fees are high in the post-SOX period. Basioudis et al. (2008) use U.K. data and find a decrease in issuance of GC opinions when high non–audit fees are present. These findings contradict those above and could indicate decreased auditor independence when high non–audit fees or the expectation of higher future audit fees is present.[14]

Our study investigates auditors' propensity to issue GC opinions in a stringent economic environment, the Recession, conditional on clients' ability to exert economic pressure. Some prior studies have investigated auditors' propensity to issue GC opinions during periods of changes in the macroeconomic environment. For instance, Leone et al. (2013) study Big 5 auditors' propensity to issue GC opinions to stressed internet firms filing to go public during the 'dot com bubble' of 1999–2000. They find that Big 5 auditors were less likely to issue GC opinions to stressed internet IPO registrants as the number of such

[13] Although several studies provide such evidence supporting independence-in-fact, other studies find that investors believe independence is impaired when auditors receive large NAS fees from clients (Krishnan et al., 2005; Francis and Ke, 2006; Krishnamurthy et al., 2006; Khurana and Raman, 2006).

[14] Contradictory results are not restricted to GC opinions. Studies utilizing discretionary accruals to measure audit quality also find conflicting results. Reynolds et al. (2004) find no evidence that NAS fees are associated with discretionary accruals, after controlling for client characteristics, while Larcker and Richardson (2004) find a link between higher fees (either non-audit or total fees) and lower discretionary accruals. Hoitash et al. (2007), however, find that abnormally high audit fees result in decreased accruals quality.

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companies they audited increased, and as such companies attempted to rush their IPOs to market. Li et al. (2015) also find auditors are less likely to issue GC opinions when investor sentiment is high, and that investor sentiment is positively associated with the likelihood of Type II reporting errors (i.e., Incorrect clean opinions for bankrupt clients). On the other hand, as discussed above, recent studies find auditors are more likely to issue going concern opinions during the Recession (Geiger et al., 2014; Xu et al., 2011, 2013). It appears that auditors generally decrease the issuance of going concern opinions when investor enthusiasm is high, and increase the issuance of going concern opinions when economic conditions are poor. However, none of the prior studies investigate the role of client pressure in the auditors' going concern decision process during a severe downturn in the economic climate.

We extend prior studies by investigating auditors' propensity to issue first-time GC opinions before, during, and after the Recession, in relation to proxies for clients' ability to exert economic pressure. While the Recession is our main focus, especially the deep Recession year of 2008, we also consider the years immediately before and after the Recession to determine whether any effects observed are limited to the Recession. If we only find an effect during the Recession years, this suggests that the unique, severe macroeconomic conditions present during the Recession were a key factor in client ability to influence auditor independence. Thus, auditors may not be susceptible to client pressures in more normal economic times.

2.3. Hypotheses: audit fee pressure and the GC decision

As discussed earlier, the Recession posed an unusually stringent environment in which to examine auditor independence. Audit fees as a per cent of clients' total revenues decreased (Cheffers and Whalen, 2010) and clients exerted greater fee pressure on their auditors during the Recession (EFL, 2014).[15] In this section, we specify competing hypotheses about the association between client economic (fee-related) pressure and auditors' propensity to issue GC opinions to their financially distressed clients. On the one hand, downward pressure on audit fees during a recession makes it more difficult for auditors to avert risk of association with distressed clients through increased effort (EFL, 2014). Auditors might view potentially distressed clients exerting fee pressure as less desirable clients, and therefore might attempt to protect themselves against clients exerting fee pressure via their GC reporting decisions, even if this increases the probability of losing those clients. We refer to this as the *risk aversion hypothesis*. This scenario would be consistent with parallel trends toward increased fee pressure during the Recession (EFL, 2014) and auditor issuance of more GC opinions during the Recession (Blay et al., 2011). On this basis, we expect a positive association between our measure of current-year audit fee pressure and auditors' propensity to issue GC opinions during the Recession.

On the other hand, downward pressure on audit fees is not exogenously imposed on auditors; it is the result of negotiations with clients. From this perspective, it is possible that clients able to obtain fee concessions in the heart of the Recession are those that auditors somehow view as more desirable. Such clients might also be able to obtain more favorable treatment with respect to auditors' GC decisions, thus enhancing the probability of continued future auditor tenure. We refer to this as the *economic bonding hypothesis*. In this scenario, the auditor makes a temporary investment in the client relationship, in the form of foregone current audit fees. Our competing current-year audit fee pressure and auditor GC opinion hypotheses are:

Hypothesis 1a (*Risk aversion hypothesis*). Client PRESSURE on current-year audit fees is positively associated with auditors' propensity to issue a first-time GC modified opinion during the Recession.

Hypothesis 1b (*Economic bonding hypothesis*). Client PRESSURE on current-year audit fees is negatively associated with auditors' propensity to issue a first-time GC modified opinion during the Recession.

Our prior expectation is that H1b is the stronger scenario. We measure client ability to exert pressure on current-year audit fees, *PRESSURE*, using the audit fee pressure measure in EFL (2014). They find that many client firms in the depth of the Recession (i.e. in 2008) were able to pay audit fees that were less than would be expected given their size, complexity, and risk levels. They refer to such situations as "fee pressure". We note that their evidence indicates that fee pressure clients were able to obtain fee concessions in a year when client business risks and reporting risks arguably increased. The EFL (2014) fee pressure variable is a useful measure of a client's ability to exert pressure on its auditor because the variable captures most relevant client financial conditions and audit risk factors, and because it represents meaningful benefits to clients (dollars saved) and costs to auditors (dollars foregone).

[15] An important question is whether the Recession could have motivated clients to exert pressure on 2008 audit fees given that the Recession began late in 2007. The GDP and GDI data for the third and fourth quarters of 2007 provided in Panel B of Figure 1 show that fourth quarter GDP growth was only half of third quarter growth. GDI actually shrank in both quarters. Preliminary negotiations for 2008 fees for calendar year firms were conducted in the first quarter of 2008 when GDI was increasing very modestly, but GDP was shrinking rapidly. We believe that the audit fee shrinkage and audit fee pressure for audits of 2008 financial reports, documented in prior studies, can be most easily explained if clients sought and obtained fee concessions in an economic climate that clearly was deteriorating by the first quarter of 2008. Further, the 2008 audit fee data we employ (captured by Audit Analytics primarily from proxy statements) are not the unobservable preliminary amounts mostly negotiated in the first quarter of 2008. The audit fee data for 2008 reflect amounts actually billed to clients. The amounts finally billed for 2008 audits could reflect client fee pressures exerted throughout the second half of 2008, and into early 2009 (through completion of the audit), as the economy continued to deteriorate. This timeline information, together with the empirical fact that many clients' audit fees for 2008 were constrained or even reduced relative to 2007, suggests that 2008 fees were influenced by the onset of the Recession.

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2.4. Hypotheses: audit fee pressure, compensating payments and the GC decision

Under the economic bonding hypothesis, clients that are able to successfully exert fee pressure on auditors are desirable clients, thus auditors are willing to make a temporary investment in the client relationship by reducing current audit fees. Such economic bonding reduces auditors' likelihood to issue GC opinions. If that is the case, we expect the economic bonding between fee pressure clients and auditors will be stronger if such clients provide compensating payments, either in the form of total fee increases in the near future, or higher current-year NAS fees, as prior study suggests these two factors could further increase the economic bonding between auditors and their clients (Blay and Geiger, 2013). In other words, auditors will be more likely to reduce their GC opinion issuance to fee pressure clients if auditors believe those clients are willing to or able to pay higher fees in the immediate future, or to clients from whom the auditor receives other forms of revenue (or at least intangible benefits). Thus, the auditor's incentive *not* to issue GC opinions to distressed clients that are desirable enough to obtain fee concessions is likely to be magnified by the economic bonding motive provided by expected total fee increases or higher current-year NAS fees from those clients.[16] We state the hypotheses examining the interaction between audit fee pressure and compensating payments (expected total fee growth or current-year NAS fees) on auditors' GC decisions as follow.

Hypothesis 2a. The (expected) negative association between client PRESSURE on current-year audit fees and auditors' propensity to issue a first-time GC opinion during the Recession is more pronounced for clients with higher expected total fee growth.

Hypothesis 2b. The (expected) negative association between client PRESSURE on current-year audit fees and auditors' propensity to issue a first-time GC opinion during the Recession is more pronounced for clients with higher current-year non–audit fees.

We employ actual next-year total fee growth as proxy for auditors' expectations of next-year total fee growth. For 2008, *FEEGROWTH* is defined as the change in a client's total fees (audit fees plus non–audit service fees) from 2008 to 2009, divided by total fees for 2008.[17] We use current-year total NAS fees scaled by total fees, *NAFEERATIO*, as the NAS-related proxy for the potential economic bonding between client managers and audit firms. We then interact *PRESSURE* and *FEEGROWTH* or *NAFEERATIO* in the auditors' first-time GC model and expect the interactions to be significantly negative.

3. Sample selection and methodology

3.1. Sample

Our sample period covers 2005 through 2011, the years before, during, and after the Recession. This extended sample period provides insight into whether our various hypotheses regarding *PRESSURE* are supported both outside and inside the Recession. We obtain a sample of public companies that are covered by both Audit Analytics and Compustat from 2005 to 2011. The initial sample is 47,971 firm-years. We exclude financial services firms (SIC 6000–6999) because of their unique regulatory and reporting requirements. We then exclude firms without audit fee data, financial data, and other data needed to estimate the annual audit fee models, which results in 24,146 observations. Because prior studies of auditor GC opinions generally focus on distressed firms (DeFond et al., 2002; Geiger and Rama, 2003; Li, 2009), we restrict our analyses to those firms. We define financially distressed firms as those that report either negative net income or negative operating cash flows during the current fiscal year (Reynolds and Francis, 2000; DeFond et al., 2002; Li, 2009).[18] This reduces the sample by 14,250 firm-years. Finally, we focus on firms receiving first-time GC opinions because previous studies suggest that rendering an initial GC opinion to a client is a particularly difficult decision for the auditor (Kida, 1980; Mutchler, 1984).[19] Thus, we exclude 1315 firm-years with GC opinions received in the prior year. Our final sample is 8581 potentially distressed firm-years with 588 of these resulting in a first time going concern opinion from 2005 to 2011. Table 1 summarizes the sample attrition process.

3.2. Methods

Our hypothesis H1a (hypothesis H1b) states that client pressure is positively associated (negatively associated) with auditor propensity to issue a going concern opinion during the Recession. To test this we first estimate client pressure, *PRESSURE*,

[16] We focus on current year NAS fee level rather than expected NAS fee growth for the following reasons. While publicly traded firms are compelled to purchase audit services, their purchase of NAS is optional, and is thus subject to more year-to-year fluctuation. Un-tabulated univariate analysis documents that the standard deviation of NAS fee growth during our sample period from 2005 to 2011 is about five times the standard deviation of audit fee growth, which suggests that growth in NAS fees was much more difficult for audit firms to predict compared to growth in audit fees. In addition, it is problematic to examine scaled growth in NAS fees when NAS fees equal zero in some year(s).

[17] To investigate the role of *FEEGROWTH* in other periods, we define it more generally as the growth in total fees from year t to year t + 1, scaled by total fee in year t.

[18] Our results remain qualitatively the same if we examine all first time GC opinions for the full sample (including both healthy and financially distressed companies). We also alter the definition of potentially distressed clients to include only clients exhibiting both negative income and negative operating cash flow. This reduces sample size, but our results are qualitatively the same.

[19] Our results remain qualitatively the same when we relax this restriction and examine all GC opinions while controlling for previous-year GC opinions in the model

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Table 1
Sample attrition.

Observations in Audit Analytics and Compustat 2005–2011	47,971 firm-years
Less	
Financial services (SIC 6000–6999)	8224
Missing audit and lagged audit data for audit fee model	13,283
Missing financial and other data	2318
Sample to calculate fee pressure	24,146 firm-years
Less	
With positive operating cash flows and net income	14,250
With GC opinion in prior year	1315
Final sample of potentially distressed client firms	8581 firm-years

following EFL (2014). We use the largest available sample with necessary audit, financial, and other data, 24,146 firm-year observations, to estimate the audit fee model by year. The audit fee model is[20]:

$$\begin{aligned} LnAUDITFEE = {} & b_0 + b_1 LnAT + b_2 LOSS + b_3 CRATIO + b_4 ZSCORE + b_5 CFO + b_6 ARIN + b_7 SEG + b_8 FOREIGN \\ & + b_9 SQEMPLOY + b_{10} RLAG + b_{11} GC + b_{12} ACCELERATE + b_{13} ICMW + b_{14} RESTATE + b_{15} BHRET \\ & + b_{16} IOS + b_{17} BIG4 + b_{18} AUDCHG + b_{19} ACOMP + industry\ dummies + \varepsilon \end{aligned} \quad (1)$$

The dependent variable is the natural log of audit fees (*LnAUDITFEE*). Model (1) includes controls for company size (*LnAT*), financial condition (*LOSS*, *CRATIO, ZSCORE, CFO*), complexity (*ARIN*, *SEG*, *FOREIGN*, *SQEMPLOY*, *RLAG*), audit risk factors (*GC*, *ICMW*, *RESTATE*), regulatory factors (*ACCELERATE*), stock returns (*BHRET*), auditor size (*BIG4*), and other audit market factors (*IOS*, *AUDCHG*, *ACOMP*). See Table 2 for variable definitions.

The audit fee model is estimated individually by client total asset quintile for each year to obtain estimated model parameters for that year.[21] We employ estimated parameters for a given year, together with model variable values for the next year, to estimate benchmark fees for the next year, as described below. We require that each firm have the necessary lagged audit fee model data in order to be included in the benchmark fee estimation for that year (e.g. a firm in the 2008 sample must have the necessary lagged variables to estimate the 2007 benchmark audit fee model).

To obtain a client's benchmark audit fee for 2008, we first estimate the fee model coefficients using 2007 data for the client's same-assets quintile sample. We multiply the vector of estimated audit fee model coefficients for 2007 with the client's vector of explanatory variable values for 2008 to obtain the client's expected audit fee in 2008. Finally, we subtract each client's actual audit fee from its expected audit fee in that year and scale the difference by total assets to obtain client fee pressure, *PRESSURE*. If expected fees are higher (lower) than actual fees then *PRESSURE* is positive (negative).[22] A similar procedure is followed to obtain benchmark fees and *PRESSURE* values for other sample years.

We then test whether clients exerting higher *PRESSURE* are more, less, or equally likely than clients with lower *PRESSURE* to receive a first-time GC opinion before, during, and after the Recession, with focus on the years during the Recession (our H1a and H1b). We estimate the following logistic regression for each year from 2005 to 2011:

$$\begin{aligned} FIRSTGC = {} & b_0 + b_1 PRESSURE + b_2 LnAT + b_3 ZSCORE + b_4 LIQUIDITY + b_5 CFO + b_6 LOSSPY + b_7 chgROA + b_8 chgDEBT \\ & + b_9 AGE + b_{10} BIG4 + b_{11} RLAG + industry\ dummies + \varepsilon \end{aligned} \quad (2)$$

FIRSTGC equals one if the company receives a first-time GC modified opinion for the year, and equals zero otherwise. The coefficient b_1 on *PRESSURE* tests H1a and H1b in each year. Under the *risk aversion hypothesis*, b_1 should be positive. On the other hand, if clients that successfully exert fee pressure are also able to pressure auditors over going concern decisions (the *economic bonding hypothesis*), then b_1 should be negative. Because we estimate model (2) for each fiscal year, the results will also show if auditor propensity to issue a going concern opinion to clients exerting fee pressure was different during the Recession compared to more normal periods (immediately before and after the Recession).

[20] Firm and year subscripts are omitted from the model for simplicity.

[21] As an example, see the Appendix A for the audit fee model (1) results for 2007, the 2008 audit fee benchmark year.Picconi and Reynolds (2012) suggest that the audit fee model's log–log form provides biased estimates of actual audit fees. We follow their suggested method and estimate the audit fee model separately for each asset size quintile. Note that the five regressions estimated in the Appendix A employ 682 client firm observations per quintile, for a total of 3410 observations for 2007. This is approximately-one-seventh of the total firm-year observations of 24,146 for the seven year sample period, mentioned previously.

[22] Krishnan and Zhang (2014) employ a measure of simple audit fee cuts as an alternative to the EFL (2014) fee pressure metric. For year t, their measure is computed as: 1 - (the year t audit fee / the year t − 1 audit fee). We repeat our analyses using the Krishnan and Zhang metric and find no association of fee cuts with GC decisions (H1a and H1b), and no significant coefficient when the fee cut variable is interacted with expected audit fee increases or current year NAS fees (H2a and H2b). The EFL (2014) metric, which we use, has the advantage that it controls via the first stage audit fee model for changes in client company cost drivers that can explain observed changes in audit fees. This is important given the significant changes that many companies experienced during the Recession. A disadvantage of the EFL metric is that it is subject to estimation error via the first stage model. This drawback is mitigated by the high explanatory power of the audit fee model. More importantly, the estimation error should bias our results toward failure to reject the null, yet we still reject the null for 2008.

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Table 2
Variable definitions.

Variable name	Definition	Data source
Key Variables for Models (1), (2), and (3)		
FIRSTGC	Equals 1 if client received a first time going concern opinion in year *t*, zero otherwise	AA
LN_AUDITFEE	Equals the natural logarithm of total audit fees in year *t*	AA
PRESSURE	Client imposed fee pressure calculated following Ettredge et al. (2014)	Compustat, AA
FEEGROWTH	Equals change in total fees (audit fees and non–audit service fee) from year t to year t + 1 divided by audit fees in year t	AA
NAFEERATIO	Equals non–audit fees divided by total fees in year *t*	AA
Control Variables for Models (1), (2), and (3)		
ACCELERATE	Equals 1 if the company is an accelerated filer in year *t*, zero otherwise	Compustat
ACOMP	Equals the auditor competition a given metropolitan statistical area in year *t*. It is calculated by ranking the Herfindahl index into quintiles following Newton et al. (2013)	AA
AGE	Firm age is defined as the number of years the firm has been followed in CRSP	CRSP
ARIN	Equals accounts receivable (RECT) plus inventories (INVT), divided by total assets (AT) in year *t*	Compustat
AUDCHG	Equals 1 if the company changes auditors in year *t*, zero otherwise	AA
BHRET	Equals the firm's buy and hold stock return for year *t*	CRSP
BIG4	Equals 1 if the company's auditor is a Big 4 auditor, zero otherwise	AA
CRATIO	Equals the current ratio calculated as current assets (ACT) divided by current liabilities (LCT) in year *t*	Compustat
CFO	Equals operating cash flow (OANCF) divided by total assets (AT) in year *t*	Compustat
chgDEBT	Equals the change in total debt (DLC + DLTT) between year *t* and year *t − 1* scaled by total assets (AT) in year *t*	Compustat
chgROA	Equals the change in return on assets (ROA_IBE/AT) between year *t* and year *t − 1*	Compustat
FOREIGN	Equals 1 if the company has foreign transactions (FCA) in year *t*, zero otherwise	Compustat
GC	Equals 1 if the company received a going concern modified opinion in year *t*, zero otherwise	AA
ICMW	Equals 1 if the company discloses an internal control material weakness in year *t*, zero otherwise. The internal control material weakness is obtained from the auditor's Section 404 internal control report. For firms that do not have auditors' internal control reports, ICMW is set to be zero	AA
IOS	Equals the industry investment opportunity set (IOS) as per Cahan et al. (2008). The IOS factor is calculated for each firm in the sample. The industry investment opportunity set equals the standard deviation of the IOS factors for each industry	Compustat
LIQUIDITY	Equals cash and marketable securities (CHE) divided by total assets (AT) in year *t*	Compustat
LnAT	Equals the natural log of total assets (AT)	Compustat
LOSS	Equals 1 if the company reported a loss in net income (NI) year *t*, zero otherwise	Compustat
LOSSPY	Equals 1 if the company reported a loss in net income (NI) year *t − 1*, zero otherwise	Compustat
RESTATE	Equals 1 if the company announces a restatement in year *t*, zero otherwise	AA
RLAG	Equals the natural log of the number of days between the company's fiscal year end and the auditor's signing date in year *t*	AA
SEG	Equals natural log of the number of operating and geographic segments in year *t*	Compustat
SQEMPLOY	Equals the square root of the number of employees (EMP) reported by the company in year *t*	Compustat
ZSCORE	Equals the probability of bankruptcy score (Zmijewski, 1984) measured at the end of the year *t*. The bankruptcy score is calculated as −4.3 to 4.5 * (net income/total assets) + 5.7 * (total debt/total assets) − 0.004 * (current assets/current liabilities)	Compustat
Additional variable used in Tables 6 and 7 (models (5) through(7))		
CRISIS	Equals 1 if the fiscal year is 2008, zero otherwise	Compustat
TYPE2	Equals one if a client entering bankruptcy received a "clean" audit report (not modified for GC) in the prior year, zero otherwise	AA

Notes.
Compustat data are obtained from the Compustat North America Fundamentals Annual file. AA data are obtained from Audit Analytics Audit Opinions, Audit Fees, Audit Fees with Restatements, Non–reliance Restatements, and SOX 404 Internal Controls files. CRSP data are obtained from the CRSP Daily Stock file.

In model (2) we control for client characteristics that are known to influence auditor GC decisions based on prior literature, such as size, financial condition, audit report lag, and auditor type (Mutchler, 1984; DeFond et al., 2002; Li, 2009). We expect larger clients (*LnAT*), more mature clients (*AGE*), clients with positive operating cash flows (*CFO*), and more liquid assets (*LIQUIDITY*) are less likely to receive GC opinions. We expect clients with higher bankruptcy prediction scores (*ZSCORE*) and prior year losses (*LOSSPY)* are more likely to receive GC opinions. We also expect clients that have increases in their return on assets (*chgROA*) and successfully obtain new debt (*chgDEBT*) are less likely to receive going concern opinions. In addition, clients with longer audit report lags (*RLAG*) and Big 4 auditors (*BIG4*) are expected to be more likely to receive a going concern opinion. We winsorize all continuous variables at the 1st and 99th percentiles by year to control for the impact of any outliers.[23] We cluster standard error on industry membership.[24]

[23] Our results are unchanged if we winsorize all continuous variables at the 1st and 99th percentiles across the whole sample (i.e. all years pooled).
[24] In un-tabulated results, we also correct standard errors using only Whites's (1980) heteroscedasticity covariance; we cluster standard errors by audit firm; and we cluster standard errors by audit firm and industry membership. All inferences are qualitative similar to those reported in this paper.

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H2a and H2b specify that the (expected) negative association between *PRESSURE* and *FIRSTGC* will be more pronounced for clients characterized by greater expected *FEEGROWTH* or higher current-year *NAFEERATIO*. H2a or H2b will be supported if b_3, the interaction is negative:

$$FIRSTGC = b_0 + b_1 PRESSURE + b_2 FEEGROWTH \text{ or } NAFEERATIO + b_3 PRESSURE * FEEGROWTH \text{ or } PRESSURE * NAFEERATIO + b_4 LnAT + b_5 ZSCORE + b_6 LIQUIDITY + b_7 CFO + b_8 LOSSPY + b_9 chgROA + b_{10} chgDEBT + b_{11} AGE + b_{12} BIG4 + b_{13} RLAG + industry\ dummies + \varepsilon \quad (3)$$

FEEGROWTH captures the increase in total fees from fiscal year t to fiscal year t + 1 (scaled by total fees in fiscal year t). *NAFEERATIO* is defined as a client's NAS fees divided by its total fees (audit plus NAS) for a given year. H2a and H2b specify that coefficient b_3 should be significantly negative for both variables.

Model (3) also enables us to investigate whether audit fee pressure, expected total fee growth, and current NAS fee ratios have incremental power beyond each other to explain GC decisions. Each of these variables, when used as a stand-alone variate, provides an estimated coefficient capturing the explanatory power of that variable when the value of an interacted variable is approximately zero. Although not the subject of formal hypotheses, we test whether client *PRESSURE* on current-year audit fees is negatively associated with auditors' propensity to issue a first-time GC modified opinion during the Recession even when expected total fee growth and current NAS fees are approximately zero. We also test whether expected total fee growth or (current NAS fees) is negatively associated with auditors' propensity to issue a first-time GC modified opinion during the Recession even when client *PRESSURE* is approximately zero.

Evidence supporting each of these expectations would suggest that none of the three variables simply proxies for non–zero values of another. In particular, we seek evidence that audit fee pressure is not merely a proxy for the two economic bonding variables.

4. Empirical results

4.1. Descriptive statistics for first-time going concern opinions

The model (2) variable descriptive statistics for the sample are shown in Panel A of Table 3. Approximately 6.9 per cent of the observations involve receipt of a first time going concern opinion during the sample period. In addition, mean cash flows are negative and 67 per cent of the sample had net losses in the prior year. Over half of the observations (55 per cent) are audited by a Big4 auditor.

Panel B of Table 3 shows the mean and median descriptive statistics separately for companies that do and do not receive first time going concern opinions. We note that mean *PRESSURE* is higher (less negative) for clients that do not receive a first time going concern opinion, i.e. higher pressure is associated with lower likelihood of receiving a GC opinion. We analyze this result in the logistic model (2) for each year to determine if this result is consistent throughout the sample period in a multivariate model. As expected, companies that are smaller (*LnAT*), have higher bankruptcy scores (*ZSCORE)*, lower liquidity (*LIQUIDITY*), more negative cash flows (*CFO*), greater instances of prior year losses (*LOSSPY*), larger decreases in their return on assets (*chgROA*), and longer report lags (*RLAG*), and are less mature (*AGE*) are more likely to receive a first time GC opinion. First time GC companies are also less likely to have a Big4 auditor. This result could be due to the greater riskiness of these financially distressed companies, in conjunction with Big4 client selection and retention policies that tend to avert such risk. Finally, we note that non–audit fee ratios are higher for companies that do not receive a first time GC opinion. This is consistent with the argument that clients paying higher NAS fees are desirable clients, thus auditors may act less independently for these clients. However, it could also just reflect that better financial health enables clients to pay auditors for additional non–audit services.

Panel C of Table 3 provides Pearson correlation coefficients among study variables. Statistically significant correlations (i.e. differing from zero at a p-level of 0.05 or better) are shown in bold font. We note that *FIRSTGC* is negatively associated with *PRESSURE*, consistent with H1b. *PRESSURE* is also positively associated with *FEEGROWTH* and with *NAFEERATIO*, which is consistent with our argument that the incentives for auditors to grant a fee concession to clients are related to the prospects of receiving compensating payments from the clients.

4.2. Logistic regression results for H1a and H1b

Table 4 shows the results of the going concern logistic model (2) which are reported individually for years 2007 through 2009.[25] In 2008, *PRESSURE* is negatively associated with first time going concern opinions which suggests reduced auditor independence for clients that exert *PRESSURE* on their auditors in that year. To put these results into economic perspective, auditors are two per cent less likely to issue first time GC opinons when *PRESSURE* increases by-one standard deviation. Two per cent is nontrivial given the unconditional likelihood of first time GC opinions issued for financially distressed clients in 2008 is only 10.6 per cent. The results for 2008 support the *economic bonding hypothesis* (H1b) rather than the *risk aversion hypothesis*

[25] All reported p-values in Tables 4–7 are two-tailed.

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Table 3
Descriptive statistics for key variables.

Panel A: Descriptive statistics

Variable	N	Mean	Median	Minimum	25th	75th	Maximum	Std Dev
FirstGC	8581	0.069	0	0	0	0	1	0.253
PRESSURE	8581	−0.001	0.000	−0.031	−0.002	0.001	0.011	0.005
FEEGROWTH	7637	0.037	−0.014	−0.693	−0.158	0.139	2.875	0.365
NAFEERATIO	8581	0.128	0.091	0.000	0.017	0.196	0.615	0.131
LnAT	8581	4.836	4.723	−0.269	3.430	6.152	10.282	2.011
ZSCORE	8581	−1.684	−2.381	−5.029	−3.500	−0.855	13.695	2.809
LIQUIDITY	8581	0.267	0.166	0.000	0.048	0.434	0.935	0.266
CFO	8581	−0.100	−0.014	−2.057	−0.140	0.054	0.320	0.288
LOSSPY	8581	0.672	1	0	0	1	1	0.470
chgROA	8581	−0.054	−0.034	−2.024	−0.146	0.043	1.675	0.365
chgDEBT	8581	0.011	0.000	−0.883	−0.019	0.040	0.706	0.149
AGE	8581	2.574	2.565	−0.122	2.197	2.996	4.111	0.671
BIG4	8581	0.552	1	0	0	1	1	0.497
RLAG	8581	4.290	4.304	3.367	4.127	4.454	5.497	0.244

Panel B: Mean and median descriptive statistics split on *FIRSTGC*

	FIRSTGC = 1		*FIRSTGC* = 0					
	N = 588		N = 7993		Difference in Means		Difference in Median	
Variable	Mean	Median	Mean	Median	*t*-stat	*p*-value	z score	*p*-value
PRESSURE	−0.003	0.000	−0.001	0.000	10.64	0.001	2.59	0.010
FEEGROWTH	0.007	−0.067	0.038	−0.012	1.628	0.105	4.06	0.000
NAFEERATIO	0.111	0.071	0.129	0.093	3.11	0.002	4.32	0.001
LnAT	3.541	3.297	4.932	4.814	16.44	0.001	16.17	0.001
ZSCORE	1.717	0.351	−1.934	−2.504	−32.19	0.001	−24.35	0.001
LIQUIDITY	0.226	0.117	0.270	0.170	3.93	0.001	4.33	0.001
CFO	−0.392	−0.180	−0.078	−0.010	26.62	0.001	16.95	0.001
LOSSPY	0.847	1	0.659	1	−9.42	0.001	−9.37	0.001
chgROA	−0.290	−0.188	−0.037	−0.029	16.49	0.001	−14.14	0.001
chgDEBT	0.031	0.000	0.010	0.000	−3.45	0.001	−3.75	0.002
AGE	2.453	2.398	2.583	2.565	4.53	0.001	4.71	0.001
BIG4	0.398	0	0.564	1	7.83	0.001	7.80	0.001
RLAG	4.468	4.489	4.277	4.290	−18.70	0.001	−20.31	0.001

Panel C: Pearson correlations (N = 8581)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
FirstGC	[1]	1													
PRESSURE	[2]	**−0.114**	1												
FEEGROWTH	[3]	−0.019	**0.172**	1											
NAFEERATIO	[4]	**−0.034**	**0.104**	**−0.075**	1										
LnAT	[5]	**−0.175**	**0.235**	**−0.098**	**0.090**	1									
ZSCORE	[6]	**0.328**	**−0.176**	0.021	0.010	**−0.159**	1								
LIQUIDITY	[7]	**−0.042**	**−0.099**	**0.041**	**−0.104**	**−0.287**	**−0.038**	1							
CFO	[8]	**−0.276**	**0.214**	**−0.061**	**0.041**	**0.457**	**−0.498**	**−0.390**	1						
LOSSPY	[9]	**0.101**	**−0.104**	−0.017	**−0.061**	**−0.231**	**0.208**	**0.239**	**−0.275**	1					
chgROA	[10]	**−0.175**	**0.099**	**0.053**	−0.004	**0.050**	**−0.368**	**0.042**	**0.206**	**0.185**	1				
chgDEBT	[11]	**0.037**	**0.057**	**0.041**	**0.047**	**0.039**	**0.123**	**−0.085**	**−0.040**	**−0.062**	−0.018	1			
AGE	[12]	**−0.049**	**0.030**	**−0.066**	0.009	**0.169**	**−0.091**	**−0.194**	**0.148**	**−0.156**	−0.015	**−0.049**	1		
BIG4	[13]	**−0.084**	**0.109**	**−0.068**	0.010	**0.580**	**−0.060**	**0.073**	**0.150**	**−0.065**	0.008	−0.017	**0.039**	1	
RLAG	[14]	**0.198**	**−0.104**	**−0.005**	−0.021	**−0.360**	**0.135**	**−0.086**	**−0.115**	**0.070**	**−0.056**	0.019	**−0.083**	**−0.282**	1

Notes.
See Table 2 for variable definitions. All continuous variables are winsorized at the 1st and 99th percentiles by fiscal year to control for the impact of any outliers. In Panel C Pearson correlations are shown, with coefficients differing from zero at the 0.05 level or better, two-tailed, in bold font.

(H1a). The Recession might have made auditors less willing to risk losing further audit fees and non–audit fees by alienating clients that are able to successfully obtain audit fee concessions from their auditors.

We find that *PRESSURE* is positively associated with first time going concern opinions in 2009 which is opposite to the result for 2008. A possible explanation for this dramatic result is that the financial position of audit firms differed in 2009 versus 2008. Having granted widespread fee concessions in 2008, audit firms likely felt the need to resume more normal fee levels in 2009. They might have been more willing in that year to risk losing clients that continued to press for fee concessions as the economy improved. Their willingness to issue GC decisions to such clients arguably increased due to the PCAOB's recession–motivated guidance in Staff Audit Practice Alert No.3, which emphasizes the auditor's responsibility to evaluate whether there is a substantial doubt about the company's ability to continue as a going concern (PCAOB, 2008).

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Table 4
Logistic regressions explaining first-time going concern decisions by year (model 2).

Dependent Variable = FIRSTGC						
	2007		2008		2009	
	Coeff	*p*-value	Coeff	*p*-value	Coeff	*p*-value
Intercept	−14.712	0.000	−27.970	0.000	−35.733	0.000
PRESSURE	**−21.400**	**0.110**	**−64.911**	**0.000**	**82.760**	**0.054**
LnAT	−0.248	0.031	0.219	0.054	−0.271	0.135
ZSCORE	0.149	0.011	0.197	0.001	0.085	0.077
LIQUIDITY	−0.932	0.001	−1.436	0.071	−1.544	0.011
CFO	−0.972	0.068	−0.578	0.063	−1.076	0.076
LOSSPY	0.475	0.094	0.454	0.031	2.094	0.002
chgROA	−0.252	0.052	−0.313	0.401	−0.397	0.086
chgDEBT	−0.243	0.674	0.059	0.824	0.162	0.816
AGE	−0.325	0.084	−0.099	0.407	0.342	0.063
BIG4	0.333	0.312	0.213	0.637	1.353	0.000
RLAG	3.106	0.000	5.749	0.000	7.153	0.000
Industry Dummies	Yes		Yes		Yes	
N of distressed firm-years	1234		1459		1313	
N with FIRSTGC = 1	106		154		59	
Likelihood Ratio	−267.73		−344.38		−159.71	
Area under ROC	0.87		0.87		0.91	
Pseudo R-square	0.26		0.30		0.34	

Notes.
This table contains logistic regression results for the relation between audit fee pressure and auditors' propensity to issue first-time going concern opinions, *FIRSTGC*. The independent variable of interest is *PRESSURE*. See Table 2 for variable definitions. All continuous variables are winsorized at the 1st and 99th percentiles by fiscal year. Industry fixed effects are included. All *p*-values are two-tailed and employ robust, industry-clustered standard errors.
The key variables of interest are in bold font.

We also note that *PRESSURE* is not significant in fiscal 2007. The Recession did not officially begin until December 2007, so clients may not have been motivated by the Recession to exert significant pressure on fees for audits of fiscal year 2007 financial reports. Consistent with this, EFL (2014) found median fee pressure was higher in 2008 than in 2007. Thus, clients appear not to have exerted as much pressure on their auditors in 2007.

Results for control variables are generally consistent with expectations and across fiscal years. Clients with more liquid assets (*LIQUIDITY*) and operating cash flows (*CFO*) are less likely to receive a going concern opinion. Clients with prior year losses (*LOSSPY*) and higher bankruptcy scores (*ZSCORE*) are more likely to receive a first time GC opinion. Clients with longer report lags (*RLAG*) are also more likely to receive a GC opinion.

Interestingly, the relation of company size (*LnAT*) to receipt of a first time going concern opinion differs from expectations in 2008, the heart of the Recession. In both 2007 and 2009, company size is negatively associated with receipt of a first time GC opinion. However, in 2008, larger companies are more likely to receive a first time GC opinion. This dramatic result suggests that in 2008 auditors viewed potentially distressed clients that were larger as more risky, possibly due to litigation concerns. This result further supports a view that auditor decision making, with respect to propensity to issue a going concern opinion, changed during the heart of the Recession.

We do not tabulate the results of the model (2) logistic regressions for the years before and after the Recession (2005, 2006, 2010, 2011). The coefficients of *PRESSURE* do not differ significantly from zero in any of the non–Recession years. This result suggests that reduced auditor independence for clients that exerted *PRESSURE* is limited to the heart of the Recession, 2008, and likely is due to the extreme conditions that existed during that period. This result is consistent with the finding in EFL (2014) who found that fee pressure was associated with decreased audit quality (i.e. client misstatements of audited financial statements) in 2008, but not in surrounding years.

4.3. Logistic regression results for H2a and H2b

In this section, we test whether the economic bonding between fee pressure clients and their auditors is magnified by expected increases in future total fees and current levels of fees for NAS. Table 5 Panel A shows the results of the interaction between *PRESSURE* and *FEEGROWTH* in model (3), which are reported individually for years 2007 through 2009 (H2a). The coefficient on the interaction term between *PRESSURE* and *FEEGROWTH* does not differ from zero in 2007 and 2009, but is negative and significant at the 0.01 level in 2008, indicating that the negative relation between fee pressure and first time going concern opinions is stronger (in that year) when the auditor expects to receive higher subsequent total fees. This result lends support to H2a for 2008. In that deep recession year, the auditor's incentive *not* to issue GC opinions to distressed

clients that are desirable enough to obtain fee concessions (*PRESSURE*) is magnified by the economic bonding motive provided by expected total fee increases (*FEEGROWTH*).[26]

The coefficient on *PRESSURE* as a stand-alone variable captures the effect of *PRESSURE* on GC decisions for clients with expected fee growth of zero. The coefficient on *PRESSURE* is insignificant for 2007, is negative and significant for 2008, and is positive and marginally significant for 2009. These results are similar to the *PRESSURE* results in Table 4. The coefficient for *FEEGROWTH* as a stand-alone variable captures the effect of expected total fee growth on GC decisions for clients exerting zero fee pressure. The coefficients are negative and significant in 2007 and 2009, which is consistent with Blay and Geiger (2013) who find that expected future revenues from clients can significantly reduce the incidence of going–concern modifications. However, the coefficient of *FEEGROWTH* is not significant in the deep recession year of 2008.[27]

We do not tabulate the results of the model (4) logistic regressions for the years before and after the Recession (2005, 2006, 2010, 2011). In the version of model (3) that includes *FEEGROWTH*, the estimated coefficients of *PRESSURE* and of *FEEGROWTH* as stand-alone variables do not differ from zero in any of the four years, except that the coefficient of *FEEGROWTH* is negative and significant in 2006. The coefficient of the interaction of *PRESSURE* with *FEEGROWTH* is not significant in 2010 and 2011, but is positive and significant in 2005 and 2006, contrary to expectation.[28]

Next we test the association of the interaction between fee pressure and current NAS fees with auditors' propensity to issue going concern opinions during the Recession (H2b). Table 5 Panel B shows the results for the going concern logistic model (3) which are reported individually for years 2007 through 2009. The coefficient on the interaction term between *PRESSURE* and *NAFEERATIO* is negative and significant at the 0.05 level for 2008, and is insignificant in 2007 and 2009. These results are similar to those for the interaction between *PRESSURE* and *FEEGROWTH* in Table 5 Panel A. This result lends support to H2b for 2008. In that recession year, the auditor's incentive *not* to issue GC opinions to distressed clients that are desirable enough to obtain fee concessions (*PRESSURE*) is magnified by the economic bonding motive provided by current NAS fees (*NAFEERATIO*). In addition, the coefficient on *PRESSURE* as a stand-alone variable is negative and significant at the 0.05 level in year 2008; but it becomes positive and significant in 2009. Both coefficients are consistent with our previous results for *PRESSURE* reported in Table 4. The estimated coefficients for *NAFEERATIO* as a stand-alone variable are negative and significant for all three years, consistent with Blay and Geiger's (2013) results for 2004–2006. As a robustness check, we include both the interaction between growth in total fees and fee pressure and the interaction between NAS fee levels and fee pressure in the same model and report our results in Table 5 Panel C. The coefficient on the interaction terms between *PRESSURE* and *FEEGROWTH* and between *PRESSURE* and *NAFEERATIO* are negative and significant at the 0.05 level for 2008.

We also do not tabulate the results of the model (4) logistic regressions for the years before and after the Recession (2005, 2006, 2010, 2011). In the version of model (3) that contains *NAFEERATIO*, the estimated coefficient of *PRESSURE* as a stand-alone variable is only negative and significant in 2006. The coefficients of *NAFEERATIO* as a stand-alone variable are negative and significant in 2005 and 2006. The coefficient of the interaction of *NAFEERATIO* with *FEEGROWTH* is not significant in 2010 or 2011, but is positive and significant in 2005 and 2006, contrary to expectation. This result is parallel to the results for the interaction of *PRESSURE* with *FEEGROWTH*.[29]

Overall, the results in Tables 4 and 5 are in consistent with the *economic bonding hypothesis*, but the *PRESSURE* effects are largely restricted to the deep Recession year of 2008. The Recession likely made auditors less willing to risk alienating clients that were desirable enough to successfully obtain fee concessions in 2008, and auditors tended to issue fewer going concern modified opinions to such clients. The negative association between *PRESSURE* and GC decisions in 2008 is magnified (more negative) when clients have higher growth in next-year total fees and have higher same-year levels of NAS fees. The negative and significant coefficients of *PRESSURE* as a stand-alone variable in 2008 (in Table 5, Panels A and B) suggest that this variable has incremental power (beyond *FEEGROWTH* and *NAFEERATIO*) to explain GC decisions. *NAFEERATIO* also has significant negative stand-alone coefficients in 2007 through 2009, as does *FEEGROWTH* in 2007 and 2009.

[26] Ai and Norton (2003) suggest it is problematic to interpret the significance and direction of coefficients on interaction terms in non–linear models. In general, the marginal effect of the interaction term in a non–linear model depends not only on the coefficient of the interaction term (b_3 in our Model (4)), but on the joint effects from other terms in the model as well (see Ai and Norton, 2003, 124 Eq. (2)). Specifically, they suggest that the interaction effect can have different signs conditional on different values of the independent variable, thus raising a question regarding the interpretation of a coefficient such as our b_3. We adopt the suggestion from Greene (2010) to employ a graphic analysis of the interaction effects of our model (4). In un-tabulated results we find that more than 99% of the marginal effects in a regression for 2008 are negative (consistent with our coefficient for b_3 in that year) and the average z statistic is −2.30, which is significant at the 0.01 level. Kolasinski and Siegel (2010) argue that Ai and Norton's (2003) critique is overstated. To reconcile these differing views, we also tried a linear probability model and obtained similar results as our logit model. Wooldridge (2005, Chap. 7) shows that OLS estimates remain unbiased, when OLS is used with dichotomous dependent variables.

[27] We also control for NAS fee level in the model. The results are similar.

[28] The years 2005 and 2006 are atypical in our sample with respect to fee growth. Mean *FEEGROWTH* is 0.134 in 2005 and is 0.096 in 2006, whereas mean *FEEGROWTH* in 2007–2011 ranges from a low of −0.056 (in 2008) to a high of 0.081 (in 2011). The significantly higher *FEEGROWTH* in 2005 and 2006 could be due to the implementation of Sarbanes-Oxley Section 404 under Auditing Standard No. 2 (AS No. 2, PCAOB, 2004). Audit fees significantly decreased after AS No. 5 was issued in 2007 (PCAOB, 2007). Mean *PRESSURE* tends to be somewhat lower in 2005 and 2006 than in other sample years, although the difference is not dramatic.

[29] As is the case for *FEEGROWTH*, the years 2005 and 2006 are atypical in our sample with respect to NAS fee levels. Mean *NASFEERATIO* is 0.139 in 2005, which is significantly higher than that in the rest of the years, and is 0.127 in 2006, whereas mean *NASFEERATIO* in 2007–2011 ranges from a low of 0.121 (in 2009) to a high of 0.129 (in 2007).

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Table 5
Logistic regressions explaining first-time going concern decisions by year: interaction effects (model 3).

Panel A: Interaction of audit fee pressure and expected total fee growth in explaining auditors' propensity to issue first-time going concern opinions

Dependent Variable = FIRSTGC

	2007		2008		2009	
	Coeff	*p*-value	Coeff	*p*-value	Coeff	*p*-value
Intercept	−9.140	0.029	−26.158	0.000	−37.430	0.000
PRESSURE	8.479	0.728	−76.314	0.003	87.025	0.060
FEEGROWTH	−1.771	0.000	0.433	0.288	−1.399	0.114
PRESSURE * FEEGROWTH	**−8.980**	**0.907**	**−125.743**	**0.005**	**200.013**	**0.209**
LnAT	−0.306	0.018	0.225	0.063	−0.391	0.074
ZSCORE	0.127	0.040	0.183	0.015	0.034	0.621
LIQUIDITY	−1.709	0.000	−1.657	0.138	−1.835	0.041
CFO	−1.356	0.007	−0.496	0.139	−1.329	0.154
LOSSPY	0.470	0.227	0.400	0.116	2.141	0.001
chgROA	0.361	0.002	−0.227	0.571	−0.556	0.166
chgDEBT	0.183	0.764	0.859	0.152	1.065	0.141
AGE	−0.349	0.009	−0.043	0.812	0.399	0.136
BIG4	−0.026	0.919	0.252	0.517	1.542	0.000
RLAG	1.850	0.050	5.333	0.000	7.378	0.000
Industry Dummies	Yes		Yes		Yes	
N of distressed firm-years	1062		1289		1185	
N with FIRSTGC = 1	60		98		41	
Likelihood Ratio	−172.23		−258.03		−111.1	
Area under ROC	0.85		0.86		0.92	
Pseudo R-square	0.25		0.26		0.38	

Panel B: Interaction of audit fee pressure and NAS fee levels in explaining auditors' propensity to issue first-time going concern opinions

Dependent Variable = FIRSTGC

	2007		2008		2009	
	Coeff	*p*-value	Coeff	*p*-value	Coeff	*p*-value
Intercept	−14.580	0.000	−28.040	0.000	−36.550	0.000
PRESSURE	−19.847	0.369	−39.226	0.029	136.244	0.022
NAFEERATIO	−2.548	0.006	−1.248	0.022	−2.685	0.000
PRESSURE * NAFEERATIO	**15.467**	**0.935**	**−208.654**	**0.022**	**−437.440**	**0.242**
LnAT	−0.228	0.029	0.233	0.035	−0.233	0.211
ZSCORE	0.159	0.008	0.198	0.001	0.088	0.095
LIQUIDITY	−0.987	0.000	−1.574	0.055	−1.528	0.020
CFO	−1.021	0.056	−0.642	0.036	−1.330	0.086
LOSSPY	0.450	0.140	0.445	0.032	2.212	0.003
chgROA	−0.208	0.199	−0.318	0.375	−0.427	0.064
chgDEBT	−0.182	0.763	0.053	0.852	0.386	0.643
AGE	−0.336	0.103	−0.104	0.379	0.424	0.013
BIG4	0.278	0.364	0.191	0.664	1.286	0.000
RLAG	3.153	0.000	5.798	0.000	7.312	0.000
Industry Dummies	Yes		Yes		Yes	
N of distressed firm-years	1234		1459		1313	
N with FIRSTGC=1	106		154		59	
Likelihood Ratio	−264.15		−341.80		−155.59	
Area under ROC	0.87		0.88		0.91	
Pseudo R-square	0.27		0.31		0.35	

Panel C: including both interaction of audit fee pressure and expected total fee growth and interaction of audit fee pressure and NAS fee levels in explaining auditors' propensity to issue first-time going concern opinions

Dependent Variable = FIRSTGC

	2007		2008		2009	
	Coeff	*p*-value	Coeff	*p*-value	Coeff	*p*-value
Intercept	−9.702	0.002	−26.037	0.000	−37.115	0.000
PRESSURE	15.752	0.570	−43.388	0.074	165.397	0.001
FEEGROWTH	−1.854	0.000	0.437	0.253	−1.824	0.093
PRESSURE * FEEGROWTH	**−4.249**	**0.948**	**−149.404**	**0.001**	**243.516**	**0.140**
NAFEERATIO	−2.926	0.020	−2.904	0.009	−3.832	0.001
PRESSURE * NAFEERATIO	**−10.033**	**0.934**	**−385.291**	**0.000**	**−653.156**	**0.016**
LnAT	−0.279	0.022	0.260	0.028	−0.321	0.181
ZSCORE	0.140	0.022	0.185	0.016	0.054	0.492
LIQUIDITY	−1.707	0.000	−1.773	0.130	−1.975	0.048

(*continued on next page*)

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Table 5 (*continued*)

Panel C: including both interaction of audit fee pressure and expected total fee growth and interaction of audit fee pressure and NAS fee levels in explaining auditors' propensity to issue first-time going concern opinions

Dependent Variable = FIRSTGC

	2007		2008		2009	
	Coeff	*p*-value	Coeff	*p*-value	Coeff	*p*-value
CFO	−1.463	0.002	−0.553	0.079	−1.546	0.136
LOSSPY	0.411	0.327	0.378	0.135	2.336	0.002
chgROA	0.388	0.000	−0.310	0.466	−0.641	0.166
chgDEBT	0.261	0.692	0.849	0.155	1.329	0.121
AGE	−0.358	0.030	−0.050	0.795	0.512	0.050
BIG4	−0.102	0.681	0.191	0.603	1.457	0.000
RLAG	2.066	0.004	5.349	0.000	7.238	0.000
Industry Dummies	Yes		Yes		Yes	
N of distressed firm-years	1062		1289		1185	
N with FIRSTGC=1	60		98		41	
Likelihood Ratio	−169.33		−252.63		−105.99	
Area under ROC	0.85		0.86		0.93	
Pseudo R-square	0.27		0.27		0.41	

Notes.
This table examines whether the association between audit fee pressure and auditors' propensity to issue first-time going concern opinions, *FIRSTGC*, varies with two proxies for compensating payments (i.e. payments that offset reduced current-year audit fees): expected audit fee growth and current-year NAS fees. The dependent variable is *FIRSTGC*. The independent variables of interest are the interactions between *PRESSURE* and *FEEGROWTH* or *NASFEERATIO*. See Table 2 for variable definitions. All continuous firm characteristics are winsorized at the 1st and 99th percentiles by fiscal year. Industry fixed effects are included. All *p*-values are two-tailed and employ robust, industry-clustered standard errors.
The key variables of interest are in bold font.

5. Additional analysis

5.1. Pooled sample results

In section 4, we estimated the GC models for individual fiscal years. We document a negative association between fee pressure and auditors' propensity to issue a first time going concern opinion only in 2008. However, prior GC studies usually employ data pooled over multiple years (Chen et al., 2013; Blay and Geiger, 2013). In this section we present pooled sample results for the H1 and H2 hypotheses while still focusing on the deep Recession year of 2008. Specifically, we define *CRISIS* as one if the fiscal year is 2008, and as zero otherwise. We test whether the effect of audit fee pressure on *FIRSTGC* during the *CRISIS* is significantly different from that in other years. We also test whether the impact of total fee growth and current NAS fees on the association between audit fee pressure and *FIRSTGC* is significantly different in the *CRISIS* year compared to other years. We estimate the following models using pooled data for years 2005 to 2011.[30]

$$FIRSTGC = b_0 + b_1 PRESSURE + b_2 CRISIS + b_3 PRESSURE * CRISIS + b_4 LnAT + b_5 ZSCORE + b_6 LIQUIDITY + b_7 CFO + b_8 LOSSPY + b_9 chgROA + b_{10} chgDEBT + b_{11} AGE + b_{12} BIG4 + b_{13} RLAG + industry\ dummies + year\ dummies + \varepsilon \quad (4)$$

$$FIRSTGC = b_0 + b_1 PRESSURE + b_2 CRISIS + b_3 FEEGROWTH(NAFEERATIO) + b_4 PRESSURE * CRISIS + b_5 PRESSURE * FEEGROWTH(NAFEERATIO) + b_6 FEEGROWTH(NAFEERATIO) * CRISIS + b_7 PRESSURE * FEEGROWTH(NAFEERATIO) * CRISIS + b_8 LnAT + b_9 ZSCORE + b_{10} LIQUIDITY + b_{11} CFO + b_{12} LOSSPY + b_{13} chgROA + b_{14} chgDEBT + b_{15} AGE + b_{16} BIG4 + b_{17} RLAG + industry\ dummies + year\ dummies + \varepsilon \quad (5)$$

The coefficient b_3 in model (4) and b_7 in model (5) are our variables of interest. We also estimate another version of model (5) using pooled data, with NAS fees (*NAFEERATIO*) replacing *FEEGROWTH*, which we designate as model (6).

Table 6 Panel A shows the results of estimating model (4) with sample years pooled from fiscal 2005 to 2011. Panel B reports the results when *FEEGROWTH* is included in model (5), while Panel C reports the results when *FEEGROWTH* is replaced by *NAFEERATIO*, i.e. model (6). Panel D reports the results when we combine models (5) and (6) to estimate the impact of total fee growth and current NAS fees on the association between audit fee pressure and *FIRSTGC* in the same model. All models have good fits and estimated coefficients of control variables generally have the expected signs, when significant, in all three results columns. We first note that the coefficients of *CRISIS* as a stand-alone variate are positive and

[30] We cluster standard errors by firm and year in models (5), (6) and (7) (Petersen 2009; Thompson, 2011; Gow et al., 2010).

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Table 6
Logistic regressions explaining first-time going concern decisions using data pooled over years 2005–2011 (models 5, 6, 7).

Dependent Variable = FIRSTGC								
	Panel A		Panel B		Panel C		Panel D	
Variables	Coeff	*p*-value	Coeff	*p*-value	Coeff	*p*-value	Coeff	*p*-value
Intercept	−11.669	0.000	−9.697	0.000	−11.298	0.000	−9.118	0.000
PRESSURE	3.605	0.778	4.990	0.644	−1.434	0.934	3.968	0.820
CRISIS	0.553	0.000	0.378	0.000	0.414	0.000	0.286	0.000
PRESSURE * CRISIS	**−33.492**	**0.009**	**−44.651**	**0.000**	**−3.886**	**0.836**	**−11.067**	**0.536**
FEEGROWTH			−0.460	0.103			−0.551	0.057
*PRESSURE * FEEGROWTH*			59.973	0.000			60.632	0.000
*FEEGROWTH * CRISIS*			0.264	0.258			0.301	0.224
PRESSURE * FEEGROWTH * CRISIS			**−168.920**	**0.000**			**−195.415**	**0.000**
NAFEERATIO					−1.606	0.000	−2.537	0.000
*NAFEERATIO * CRISIS*					1.053	0.001	0.247	0.219
*NAFEERATIO * PRESSURE*					87.473	0.428	64.168	0.562
NAFEERATIO * PRESSURE * CRISIS					**−278.819**	**0.027**	**−401.987**	**0.005**
LnAT	−0.175	0.019	−0.193	0.028	−0.163	0.024	−0.171	0.049
ZSCORE	0.137	0.000	0.123	0.001	0.138	0.000	0.124	0.001
LIQUIDITY	−1.868	0.000	−2.124	0.000	−1.958	0.000	−2.240	0.000
CFO	−1.320	0.000	−1.311	0.002	−1.378	0.000	−1.417	0.001
LOSSPY	0.616	0.000	0.635	0.001	0.616	0.000	0.632	0.002
chgROA	−0.241	0.000	−0.237	0.095	−0.241	0.000	−0.265	0.083
chgDEBT	0.045	0.854	0.207	0.562	0.090	0.739	0.258	0.503
AGE	−0.100	0.147	−0.026	0.790	−0.107	0.131	−0.033	0.738
BIG4	0.442	0.000	0.459	0.001	0.411	0.000	0.396	0.002
RLAG	2.256	0.001	1.765	0.001	2.222	0.001	1.707	0.002
Industry Dummies	Yes		Yes		Yes		Yes	
Year Dummies	Yes		Yes		Yes		Yes	
N of distressed firm-years	8581		7562		8581		7562	
N with FIRSTGC = 1	588		391		588		391	
Likelihood Ratio	−1622.76		−1195.8		−1612.96		−1186.95	
Area under ROC	0.87		0.86		0.87		0.86	
Pseudo R-square	0.24		0.22		0.25		0.23	

Notes.
This table re-examines the results for 2008 reported in Tables 4 and 6 using the pooled full sample for years 2005 to 2011. See Table 2 for variable definitions. All continuous variables are winsorized at the 1st and 99th percentiles by fiscal year. Industry and year fixed effects are included. All *p*-values are two-tailed and employ robust, firm- and year-clustered standard errors.
The key variables of interest are in bold font.

significant in all three models as might be expected. The Recession year of 2008 apparently was characterized by auditor perceptions of increased risk not captured by the test and control variables.

Our first test variable, the interaction between *PRESSURE* and *CRISIS* is negative and significant in Panel A, suggesting that auditors are significantly less likely to issue first-time going concern opinions to audit fee pressure clients in 2008, the heart of the Recession, compared to other years. The coefficients of our other two test variables, *PRESSURE* ∗ *FEEGROWTH* ∗ *CRISIS* (and *PRESSURE* ∗ *NAFEERATIO* ∗ *CRISIS*) are also significantly negative in Panels B to D, which suggest that the impact of audit fee growth (current NAS fees) on the negative association between *PRESSURE* and *FIRSTGC* is significantly greater in 2008. Thus, our pooled sample results further support the argument that the unique economic situation in 2008 likely changed auditors' behaviors.

5.2. Alternative measures of fee pressure

Our main measure of fee pressure is derived based on EFL (2014), which essentially estimates log of audit fees by client yearly asset quintiles. In this section, we provide and discuss several alternative measures of fee pressure. First, we have estimated audit fee models by yearly size quintiles separately for Big N clients versus non–Big N clients.[31] Un-tabulated results for Tables 4–6 indicate that our results are robust to this alternative approach. However, one potential problem with this procedure is that we pool very large firms with very small firms in the largest size quintile for non–Big N clients. For example, un-tabulated univariate analysis reveals that the mean of firm size for firms in the largest size quintile of non–Big N firms is $652 million but the minimum firm size and maximum firm size are $88.46 million and $ 20896.79 million. This heteroscedasticity could lead to extreme abnormal fees for certain firms.

[31] We thank an anonymous reviewer for suggesting this method.

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We also have estimated yearly quintile/tercile models separately for Big N clients versus non–Big N clients, using the same size quintile/tercile cutoffs. Un-tabulated results indicate that our results are robust to these two approaches. However, one potential problem with this procedure is that we have very few observations for the largest size quintile/tercile among the non–Big N clients. For example, in fiscal year 2011, only 8 observations out of 584 observations in the largest size quintile and only 20 observations out of 974 observations in the largest size tercile are audited by non–Big N auditors. However, our audit fee model contains 19 explanatory variables and 10 industry dummy variables. When the model is not full rank, least-squares solutions for the parameters are not unique and therefore, some coefficient estimates can be misleading. Last, we also tried to estimate audit fee models by year separately for Big N clients versus non–Big N clients. Un-tabulated results indicate our results for Tables 4–6 are robust to this approach as well. We argue that the Big N fee premium does not affect our results presented because we already hold client firm size homogenous by estimating the audit fee model within each size group, and controlling for auditor class via a Big N variable.

5.3. Alternative explanation for the effect of fee pressure on the GC decision

We document that when clients successfully obtained fee concessions from their auditors in 2008, they had a lower likelihood of receiving auditors' going concern opinions. Thus, it appears that economic bonding between fee pressure clients and auditors impaired auditor independence in that year. An alternative explanation is that clients successfully exerting fee pressure on auditors are financially more viable, and therefore should be less likely to receive GC opinions. However, the force of this argument is weakened by the fact that our fee pressure metric is derived from a fee model that includes all standard client risk factors. In addition, we control for bankruptcy risk in all of our GC decision models. Further, we do not observe similar main effects and interaction effects in years other than 2008. To further invalidate this alternative explanation, we investigate the association between *PRESSURE* and Type II errors. Type II errors occur when an auditor does not issue a GC opinion to a client that subsequently fails.

The existence of Type II error should be explained by variables that affect the likelihood that an auditor will issue a GC modified opinion, but that are *not* associated with likelihood of subsequent client failure. If a client exerting fee *PRESSURE* is financially healthier than other potentially distressed clients, then an auditor is less likely to issue a GC opinion to that client, other things equal. Further, *PRESSURE* should be associated with reduced likelihood of subsequent client failure. In that scenario there should be no association between *PRESSURE* and Type II error occurrence. However, auditors might fail to issue GC opinions when warranted due to economic bonding, rather than due to better client health. If a client exerting fee *PRESSURE* is *not* financially healthier than other potentially distressed clients, but an auditor is *less* likely to issue a GC opinion to that client, due to economic bonding, then there should be a positive association between *PRESSURE* and Type II error occurrence.

We employ a sub-sample of bankrupt clients to investigate the association between *PRESSURE* and Type II error occurrence. To increase the power of tests, given the small sample of bankrupt firms, we pool data across our sample years 2005 to 2011. We begin with our sample of 8581 potentially distressed client firms. We then identify 134 sample firms that filed for bankruptcy within one year after receiving an audit report. We collect bankruptcy data from the Audit Analytics bankruptcy notification database. Of the 134 bankrupt firms, 55 (or 41%) received "clean" audit reports in the year prior to bankruptcy (i.e. received reports not modified for GC). This proportion of Type II errors is roughly comparable with other studies using Audit Analytics as the data source to identify bankrupt firms.[32] We estimate a logistic regression using occurrence or non–occurrence of type II error as dependent variable (*TYPE2* = 1, 0), and using *PRESSURE* as test variable. We employ the same set of control variables as in model (1) Table 7. reports a significantly positive association between fee pressure and Type II errors, which is consistent with an economic bonding scenario, and is Inconsistent with *PRESSURE* serving as a proxy for client health not otherwise represented in the model.[33] This result provides further evidence consistent with reduced auditor independence for clients exerting fee pressure on their auditors.

5.4. Big 4 versus Non–Big 4 auditors

In this section, we provide additional analysis on the relation between audit fee pressure and auditors' going concern opinions for Big 4 versus non–Big 4 auditors. Prior literature documents that audit quality is not homogenous across audit firms (DeFond and Zhang, 2014). Because Big 4 auditors are expected to have greater competency and stronger reputation incentives to provide high audit quality, Big 4 auditors may be less willing to succumb to management pressure for clean opinions. We estimate models (2) and (3) separately for Big 4 auditor clients and non–Big 4 auditor clients using the fiscal 2008 sample.[34] Un-tabulated results indicate that the estimated coefficient on *PRESSURE* is negative and statistically significant

[32] For example, Myers et al. (2014) identify 347 bankrupt firm-year observations from 2000 to 2006. Out of these observations, 112 (32%) exhibited Type II GC reporting error.

[33] We also estimate an alternative model of Type II error occurrence that includes *CRISIS* and *CRISIS* ∗ *PRESSURE*. We find that *CRISIS* is negatively associated with TYPE II error indicating reduced likelihood of Type II error is associated with 2008 audits, other things equal. We don't find a significant coefficient on the interaction between *PRESSURE* and *CRISIS*, suggesting that Type II error is no more likely to occur, for audits exhibiting pressure, in 2008 versus other years examined.

[34] We focus on fiscal 2008 because we observe our main results only in fiscal 2008.

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Table 7
Logistic regressions explaining Type II errors using data pooled over years 2005–2011.

Dependent Variable = TYPE2 errors		
	2005–2011	
	Coeff	*p*-value
Intercept	17.325	0.001
PRESSURE	**158.529**	**0.047**
LnAT	−0.205	0.312
ZSCORE	−0.179	0.036
LIQUIDITY	2.204	0.201
CFO	3.385	0.011
LOSSPY	1.491	0.007
chgROA	0.284	0.678
chgDEBT	1.461	0.432
AGE	0.085	0.782
BIG4	−0.790	0.211
RLAG	−3.863	0.001
N of bankrupt firms	134	
N with TYPE2 GC errors = 1	55	
Likelihood Ratio	−68.61	
Area under ROC	0.83	
Pseudo R-square	0.244	

Notes.
This table contains logistic regression results for the relation between audit fee pressure and auditors' propensity to make Type II errors with respect to GC decisions for client firms that subsequently enter bankruptcy in the next year. The independent variable of interest is *PRESSURE*. See Table 2 for variable definitions. All continuous firm characteristics are winsorized at the 1st and 99th percentiles by fiscal year. All *p*-values are two-tailed and employ white heteroscedasticity adjust robust standard errors.
The key variables of interest are in bold font.

($p < 0.05$) for clients of both Big 4 auditor and Non–Big 4 auditors. Even though the absolute magnitude is smaller for Big 4 audit clients, the difference in the coefficient estimates for *PRESSURE* is not statistically significant between the two groups (p-values = 0.35). However, the interaction effects between *PRESSURE* and *FEEGROWTH (NAFEERATIO)* only exist in the subsample where client auditors are non–Big 4 auditors. Taken as a whole, we find that the hypothesized relation between audit fee pressure and auditors' propensity to issue going concern opinion holds for both Big 4 auditor clients and non–Big 4 auditor clients in 2008. But we do find evidence that non–Big 4 auditors are more likely to respond to the additional economic bonding motives, provided by expected audit fee increases or higher current NAS fees, for fee pressure clients in 2008.

6. Conclusion

Prior studies of auditor independence provide mixed evidence on whether independence is impaired by large audit fees and by large non–audit fees. Some studies find no association (Defond et al., 2002) or that auditor willingness to issue GC opinions is, if anything, greater for more clients paying higher fees (Geiger and Rama, 2003). Other studies find the opposite result (Blay and Geiger, 2013). Studies of the effect of client fees on auditor independence have not investigated whether the effect is mediated by changes in macro conditions such as economic recessions. This study extends prior literature by considering auditor independence with respect to fee pressure in the context of a severe macroeconomic change.

We investigate whether auditors' independence was compromised due to client pressure during the Recession of December 2007 through June 2009, especially during the deep Recession year of 2008. Our measure of independence is the auditor's willingness to issue first-time going concern modified opinions (GCs) to potentially distressed clients. Our proxy for client ability to exert pressure on the auditor's GC decision is the client's ability to exert pressure on the auditor's fee in the same year. Controlling for client financial condition, we find that auditors are less likely to issue first-time GC opinions to clients that exert fee pressure on the auditors in 2008. We find no decrease in auditors' propensity to issue GC decisions to clients exerting pressure in the years just before and after 2008. Thus, the reduction in auditor independence was limited to the heart of the Recession. We interpret these results as indicating that clients desirable enough to obtain fee concessions in the heart of the Recession also were able to obtain auditor concessions with regard to GC decisions. We argue that these results are most compatible with an economic bonding scenario in which auditors attempted to avoid alienating clients having strong bargaining power during the Recession.

We further investigate whether compensating payments (expected total fee increases and current NAS fees) from fee pressure clients strengthen the negative association between fee pressure and auditors' GC opinions. Our primary finding is that clients able to exert fee pressure in 2008 are even less likely to receive a GC modified opinion in that year if they provide compensating payments (i.e. payments offsetting their reduced audit fees) in the form of expected future audit fee increases or current NAS fees.

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In summary, the results suggest that auditors gave favored clients a "break" with respect to first-time GC modified opinions in the worst year of the Recession, 2008. This arguably was precisely the point in time when auditors should have been most concerned about possible future client insolvency, and the point in time at which investors and other users might have found a GC warning to be most useful. The effect of client fee pressure on GC decisions appears to have been limited almost entirely to the deep Recession year of 2008. The strength of the Recession would have been unprecedented in the work experience of auditors who were partners in 2008. Auditors' independence with respect to clients exerting fee pressure appears to have increased as their experience of the Recession increased.

Data availability

All data used in this study are publicly available from the sources identified in the text.

Appendix A. Audit fee model (1) estimated by size (total assets) quintile using 2007 audit fee data

Dependent Variable = *LN_AUDITFEE*									
	Quintile 1			Quintile 2			Quintile 3		
	Coeff	*t*-stat	*p*-value	Coeff	*t*-stat	*p*-value	Coeff	*t*-stat	*p*-value
Intercept	9.096	17.72	0.001	9.494	14.90	0.001	10.679	14.96	0.001
LnAT	0.482	18.00	0.001	0.493	10.01	0.001	0.331	6.39	0.001
LOSS	0.165	3.24	0.001	0.098	1.83	0.068	0.129	2.35	0.019
CRATIO	−0.044	−6.16	0.001	−0.034	−4.41	0.001	−0.039	−3.62	0.001
ZSCORE	−0.001	−0.12	0.907	−0.010	−0.68	0.498	0.008	0.60	0.551
CFO	−0.253	−3.95	0.001	−0.181	−1.23	0.220	−0.065	−0.29	0.775
ARIN	0.133	1.35	0.179	0.020	0.15	0.883	0.494	3.66	0.001
SEG	0.123	3.27	0.001	0.153	4.38	0.001	0.152	4.54	0.001
FOREIGN	0.060	0.87	0.386	0.131	2.27	0.024	0.167	3.16	0.002
SQEMPLOY	0.162	1.41	0.160	0.050	1.04	0.297	0.079	2.87	0.004
RLAG	0.262	2.30	0.022	0.157	1.20	0.231	0.088	0.66	0.512
GC	−0.025	−0.42	0.674	0.245	1.64	0.102	−0.141	−0.55	0.580
ACCELERATE	0.224	3.70	0.001	0.286	4.36	0.001	0.281	2.55	0.011
ICMW	0.139	0.92	0.356	0.319	3.34	0.001	0.347	4.20	0.001
RESTATE	0.073	1.16	0.248	0.041	0.58	0.565	0.268	4.04	0.001
BHRET	0.004	0.17	0.861	−0.022	−0.64	0.524	−0.029	−0.68	0.494
IOS	−0.043	−0.22	0.829	0.004	0.02	0.984	−0.356	−1.60	0.109
BIG4	0.591	9.25	0.001	0.481	9.63	0.001	0.281	5.33	0.001
AUDGCH	−0.029	−0.51	0.608	−0.212	−2.79	0.005	−0.277	−2.98	0.003
ACOMP	−0.051	−2.65	0.008	−0.081	−3.06	0.002	−0.098	−4.29	0.001
Industry dummies?	Yes			Yes			Yes		
N	682			682			682		
Adj R^2	0.658			0.498			0.454		
F Value	46.2	***		24.28	***		20.52	***	

Dependent Variable = *LN_AUDITFEE*						
	Quintile 4			Quintile 5		
	Coeff	*t*-stat	*p*-value	Coeff	*t*-stat	*p*-value
Intercept	8.601	13.35	0.001	9.027	14.20	0.001
LnAT	0.419	9.19	0.001	0.474	17.52	0.001
LOSS	0.013	0.21	0.830	0.145	2.19	0.029
CRATIO	−0.033	−2.80	0.005	−0.011	−0.56	0.579
ZSCORE	0.008	0.68	0.495	0.006	0.32	0.747
CFO	−0.771	−2.65	0.008	−1.005	−2.91	0.004
ARIN	0.777	5.28	0.001	1.101	6.51	0.001
SEG	0.167	5.73	0.001	0.222	8.38	0.001
FOREIGN	0.139	2.88	0.004	0.156	3.61	0.001
SQEMPLOY	0.040	2.62	0.009	0.047	4.87	0.001

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RLAG	0.418	3.51	0.001	0.123	0.94	0.348
GC	0.397	1.34	0.182	−0.131	−0.40	0.688
ACCELERATE	0.563	5.69	0.001	0.461	6.42	0.001
ICMW	0.363	4.34	0.001	0.303	2.92	0.004
RESTATE	−0.025	−0.35	0.730	0.055	0.77	0.444
BHRET	0.055	1.54	0.124	0.051	1.09	0.276
IOS	−0.174	−0.93	0.353	0.224	1.20	0.232
BIG4	0.213	2.82	0.005	0.234	1.69	0.092
AUDGCH	0.005	0.04	0.969	−0.282	−2.40	0.017
ACOMP	−0.047	−2.24	0.026	−0.046	−2.21	0.028
Industry dummies?	Yes			Yes		
N	682			682		
Adj R^2	0.467			0.727		
F Value	21.57	***		63.59	***	

Notes.
See Table 2 for variable definitions.
All p-value are two tailed.
*** indicates significance at the 0.01 level.

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