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Do Non-Audit Fees Impair Auditor Independence? Using Goodwill Accounting to Help Reconcile the Debate

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DEDICATION

I dedicate this dissertation to my wife, April, and my two children, Austyn and Haley. You three were the driving force behind my efforts. This journey would not have been possible, nor complete, without all of your love and support throughout the entire process.

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ABSTRACT

Prior literature's inability to document an empirical relation between non-audit service fees and compromised auditor independence contradicts the significant and long-standing concerns expressed by regulators and the investing community. The purpose of this paper is to reconcile the lack of findings in prior research with regulators' and investors' concerns about non-audit services. Using a new measure – goodwill impairments – that alleviates many of the potential limitations that could have prevented prior research from documenting evidence to support the proposed relation between non-audit services and auditor independence, I find that the level of non-audit fees of a client is negatively associated with the likelihood of recording a goodwill impairment in settings where the market indicates goodwill may be impaired. Further examinations of these findings suggest that the lack of results in prior literature could be related to limitations in the settings being tested in those papers.

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I. INTRODUCTION

Independence is the foundation of the benefits that investors derive from external auditors. Any weakening of this independence reduces the value of information provided by the auditor to the capital markets. The potential for diminished independence in the auditor-client relationship, specifically in the presence of significant non-audit service fees, has long been a concern of regulators and other users of financial statements.[1] By the early 2000's, concerns had elevated to the point that the U.S. Securities and Exchange Commission (SEC) took significant steps to combat potential independence fears by implementing multiple restrictions on the types of non-audit services the auditor can provide to their audit clients. These restrictions include services such as bookkeeping, financial information systems design, and appraisal or valuation services.[2] The SEC also ensured audit committee involvement in the purchase of non-audit services by requiring the committee to pre-approve those additional services (SEC 2002b). Although regulators have taken some action in an attempt to ensure auditors remain independent, research has generally found little consistent evidence to confirm the existence of a detrimental impact of non-audit services on auditor independence (Blay and Geiger 2013; DeFond et al. 2002; Geiger and Rama 2003; Li 2009). This lack of evidence also contradicts a related stream of literature that indicates investors are also concerned about companies' purchases of non-audit services from their external auditor (Higgs and Skantz 2006; Khurana and Raman 2006; Krishnan et al. 2005). The inconsistency between these two streams of literature seems to go

[1] Throughout the paper, any discussion of non-audit services and/or the related fees for those services refers to additional non-audit services purchased from the company's current external auditor. The fees are as classified by Audit Analytics and follow both classification guidelines from the SEC and prior literature in this area.

[2] Although several non-audit services were restricted, an extensive list of permissible non-audit services remains. This list includes services such as benefit plan audits, assistance related to mergers and acquisitions, attestation services, accounting consultations, tax compliance, tax planning, tax advice, and operational audits.

against conventional markets wisdom. Why are investors concerned about something that seems to have little or no bearing on their investments?

There are two possible explanations for prior research's failure to find consistent evidence that non-audit service fees impair auditor independence. It is certainly possible that the lack of results is an accurate reflection of the fact that non-audit fees do not actually impair independence. However, it is also possible that certain limitations in the approaches used in these prior studies prevented them from finding evidence of the relation between non-audit fees and independence, even though such a relation exists. The purpose of this paper is to improve our ability to interpret the reasons for prior research's lack of evidence by employing a new measure – goodwill impairments – that is not subject to many of the limitations of prior research.

A primary issue found in prior literature is that it is difficult to use financial statement outputs to infer independence compromises. The problem arises because one must be able to determine what the measure 'would have been' if independence were not compromised in order to determine if it changed in response to an independence compromise. Several measures used in prior research on non-audit fees, such as restatements and discretionary accruals, suffer from this sample construction issue. A primary benefit to examining goodwill impairments is that capital markets can be used to create an appropriate sample of companies with a high probability of having their goodwill impaired, as a market-to-book ratio less than one suggests that something on the books is overvalued (Beatty and Weber 2006; Churyk 2005; Harrington et al. 2012). While going concerns are often used in an attempt to alleviate the aforementioned 'counterfactual' observations concern (i.e. researchers create a sample of distressed companies), they still suffer some from this issue and several others. A primary benefit that impairments offer over going concerns is that impairments occur across a broad spectrum of the corporate

population. Going concerns, on the other hand, are limited in their occurrences, which could result in a lack of power in testing. Additionally, the use of going concerns introduces several potential biases against finding any results. One concern is that auditors may simply be unwilling to weaken their independence for a company in which they have substantial concerns about future viability. Furthermore, going concern reporting can have strong legal liability implications. Even if auditors are not concerned about future viability, they may be concerned about litigation arising if a going concern is not properly issued. Unlike going concerns, goodwill impairments occur over a wide range of companies and settings and should be generally less susceptible to these potential biases.

Prior to Statement of Financial Accounting Standards 142 (SFAS 142), goodwill accounting was fairly straightforward. It required little involvement from the auditor and, consequently, was relatively useless as a testing measure for audit related questions. The passage of SFAS 142, however, dramatically changed the process of accounting for goodwill. It brought about the end of the goodwill amortization era and the beginning of annual impairment testing. The introduction of ongoing impairment monitoring significantly changed the role of the auditor relating to goodwill. The auditor must now devote significant time to the testing of this balance, ensuring that management has properly assessed and, if necessary, written down goodwill. Significant auditor involvement in this area requiring subjective judgments could present the opportunity for an auditor to be influenced by their financial ties to a client. The combination of subjective judgments, competing auditor-client incentives, and significant auditor consequences, along with the potential alleviation of prior research limitations, suggests goodwill impairments may provide a better setting for testing the impact of non-audit fees on auditor independence.

To test for the weakening of auditor independence in the presence of non-audit fees, I employ a sample of 3,615 firms with a material level of goodwill and a market-to-book ratio less than one.[3] Having a material level of goodwill ensures that there is the potential for a material goodwill impairment. The market-to-book threshold provides a situation in which the market has signaled that something on the books is over-valued, creating a setting with a more appropriate group of observations for testing auditor independence. Using this sample, I examine whether the existing auditor's propensity to require an impairment write-down of goodwill is associated with the level of non-audit services provided to that audit client. The findings of this analysis suggest that the level of non-audit fees of a client reduces the *likelihood* of impairment in settings where the market indicates goodwill may be impaired. Further examinations of these findings suggest that the lack of results in prior literature could be related to limitations in the setting being tested.

Additional analyses provide further support for the finding of a negative relation between non-audit fees and goodwill impairments. The first additional test measures the impact that non-audit fees have on the *amount* of a goodwill impairment taken. This analysis offer insights into whether clients that have a larger influence on their auditor through a higher level of non-audit fees may receive preferential treatment in the relative amount of impairment. The results of these tests suggest that clients who pay higher amounts of non-audit fees do impair lower amounts relative to other clients. A second additional analysis measures whether non-audit fees have an impact on the *timeliness* of goodwill impairments. This analysis provides evidence as to whether

[3] Materiality is defined as 0.5 percent of revenues. I employ this materiality threshold to focus on only those impairment transactions most likely to be of consequence to a company. This cut-off is in line with survey responses from eight of the nine largest U.S. audit firms: BDO USA, LLP; Crowe Horwath LLP; Deloitte & Touche LLP; Ernst & Young LLP; Grant Thornton LLP; KPMG LLP; McGladrey LLP; and PricewaterhouseCoopers LLP (Eilifsen and Messier Jr. 2013). I test the sensitivity of this threshold in the additional analyses and robustness section of the paper.

clients who buy greater amounts of non-audit services are allowed a delay in recording an impairment. Findings indicate that these clients do in fact take longer to impair their goodwill. Taken together with the results from the main analysis, these findings suggest that non-audit service fees have a significant and negative relation with goodwill impairments.

This paper provides a significant contribution to the existing independence literature by helping to reconcile the concerns of investors and regulations with the lack of findings in prior independence literature. Specifically, I employ a new measure to alleviate several possible research limitations occurring in prior research. Differing from most prior studies, the results using this measure suggest that auditors receiving higher levels of non-audit fees may behave in a less independent manner. This reduction in independence is evidenced through the significant and negative relation between non-audit fees and the *likelihood*, *amount*, and *timeliness* of goodwill impairments. Further, analyses provide some evidence that the lack of results found in prior studies may have been due to limitations in the sample of data being employed. Taken together, these findings offer some reconciliation between the documented investor concerns and the lack of evidence indicating any actual impairment of independence and suggest that the understanding of that relation may be less complete than previously thought.

The remainder of the paper is organized as follows. The next section provides background information and hypothesis development. The proposed research design and sample selection process are outlined in Section III. Results are discussed in Section IV and Section V considers the potential sample limitations of prior research. Section VI presents several additional analyses and robustness checks. Concluding remarks are presented in Section VI.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

As discussed by the Securities and Exchange Commission (SEC), the purpose of an audit is to provide the public with “additional assurance — beyond managements' own assertions — that a company's financial statements can be relied upon” (SEC 2002a). During this discussion, they also cite the following statement from the U.S. Supreme Court case of U.S. v. Arthur Young: "The SEC requires the filing of audited financial statements in order to obviate the fear of loss from reliance on inaccurate information, thereby encouraging public investment in the Nation's industries." The independence that exists between auditors and their clients is paramount as it has important implications for investors, banks and financial institutions, and other parties that may transact with a company. If an auditor’s independence were to be compromised, it could have sizeable effects on financial decisions and capital allocation within the market. Echoing this sentiment in a statement to the Senate Subcommittee on Securities, Insurance and Investment, the former Chief Accountant of the SEC, Lynn Turner, stated:

> “[Auditors] have an extremely important role as a gatekeeper to the capital markets both in the United States as well as abroad. Independent audits provide investors with reasonable assurance – that is high but not absolute assurance – the financial statements are correct and complete within the boundaries of materiality. It is the objectivity – the independence – of the auditor that creates the value of an audit. Without that independence and objectivity, an audit has no value. As the increasing complexity of business transactions, products and structures result in more subjective accounting standards, they also continue to create the need for judgment on the part of auditors. Subjective, very judgmental decisions by the auditor also greatly enhance the need for objectivity and professional skepticism on the part of auditors.” (Turner 2011)

While this discussion highlights some of the reasons why auditor independence is extremely important, it is also necessary to understand what may impair this independence. DeAngelo (1981) defines auditor independence as “the conditional probability of reporting a discovered breach” in the clients accounting system and suggests that it is one of the two critical

components of audit quality. She argues that the "incumbent auditors have some incentive to lower quality opportunistically in order to retain the client in future periods. This incentive occurs because clients can impose real costs on auditors by termination (loss of the wealth equivalent of the client-specific quasi-rent stream). Therefore clients can potentially extract accounting concessions from incumbent auditors by a credible threat of termination." The incentive to compromise independence could be particularly strong for clients with a large amount of highly profitable non-audit service fees.

Furthering the concerns expressed by DeAngelo (1981) is the long-standing concern that auditors collecting fees directly from clients advances the potential for independence deviations. These concerns, among others, led the SEC to direct companies to disclose the amount and types of fees paid to their auditor – a disclosure process that went into effect on February 5, 2001 (SEC 2001). Beyond fee disclosure, the SEC also introduced requirements as part of the Sarbanes-Oxley Act of 2002 (SOX) that limited the types of non-audit services that could be performed and took action to ensure that the audit committee would be involved in the process of purchasing any non-audit services (SEC 2002b).[4]

In response to regulators' concerns and the related changes introduced, several academics have examined the relation between non-audit fees and auditor independence. Studies in this area have included investor responses as well as direct attempts at finding instances of independence

[4] These requirements prohibit an auditor from "contemporaneously" providing a public company auditing client with the following specific types of consulting or other non-audit services: bookkeeping or other services related to the accounting records or financial statements of the audit client; financial information systems design and implementation; appraisal or valuation services, fairness opinions, or contribution-in-kind reports; actuarial services; internal audit outsourcing services; management functions or human resources; broker or dealer, investment adviser, or investment banking services; legal services and expert services unrelated to the audit; any other service that the Public Company Accounting Oversight Board determines, by regulation, is impermissible.

concerns using proxies for failed audits.[5] Prior literature investigating investor response has documented several instances of concern about non-audit fees. Testing investor perception, Krishnan et al. (2005) investigate the association between fee-based measures of non-audit service purchases and earnings response coefficients (ERCs). They find that the non-audit fee ratio and the level of non-audit fees were negatively associated with ERCs. Higgs and Skantz (2006) also use ERCs to assess investor perception of fees. For audit fees, the authors find evidence consistent with the market interpreting abnormally high audit fees as a signal of high earnings quality. When analyzing non-audit fees, however, the authors find evidence that abnormally high non-audit fees impair perceived auditor independence. Further testing investor perception of non-audit fees, Khurana and Raman (2006) employ the client-specific ex ante cost of equity capital as a proxy for investor perceptions of financial reporting credibility. They find that the higher the non-audit fees paid to the auditor, the greater the implied threat to auditor independence and the lower the financial reporting credibility of a Big 5 audit.[6] Taken together, these results provide evidence that investors perceive non-audit fees as a detriment to auditor independence.

While the concerns expressed by investors suggest non-audit fees are problematic, studies have failed to find much consistent evidence of auditors actually impairing their independence

[5] Proxies commonly include issuance of a going concern, restatements, and discretionary accruals. Measures such as restatements and discretionary accruals, however, generally lack a definable group of counter factual observations in which to properly test the independence portion of overall audit quality. As a result, these other measures have generally provided little consistent support for the idea that auditors impair their independence (Frankel et al. 2002; Jong-Hag et al. 2010; Kinney Jr et al. 2004; Krishnan et al. 2011; Paterson and Valencia 2011; Reynolds et al. 2004).

[6] Other parties have also expressed concerns. Schmidt (2012) finds that when plaintiff attorneys argue that auditor independence was impaired due to dependence on non-audit fees, restatement-related audit litigation is more likely to result in an auditor settlement and a larger amount of settlement. She concludes that audit litigants act as if they believe non-audit fees will strengthen the case against the auditor.

(Callaghan et al. 2009; DeFond et al. 2002; Geiger and Rama 2003; Li 2009).[7] This general lack of evidence was highlighted by Francis (2006) when he commented on the overall findings from the non-audit services (NAS) line of research, stating that there is "a growing body of empirical evidence that questions whether there is any logical rationale for restricting the scope of the services that auditors provide to their audit clients. In reviewing the NAS research literature over the past 40 years, one has to conclude that there is no 'smoking gun' evidence linking the provision of non-audit services with audit failures." More recent findings from Blay and Geiger (2013), however, suggest that some apprehension may be warranted. Studying behavior in the post-SOX era, they find some evidence that a higher level of concurrent non-audit fees is associated with a lower propensity to issue a going concern modification. Blay and Geiger (2013) note, however, that their "findings related to going concern decisions and NAS fees in the United States are sensitive to both the time period examined and the selection of appropriate control samples of distressed non-GCM firms."

To date, going concerns have generally been thought to provide the best opportunity for gaining insight on auditor independence. They offer a significant benefit from the perspective that the going concern decision process is both under the control of the auditor and unobservable to the public (Blay and Geiger 2013; DeFond et al. 2002; Reynolds and Francis 2000). While that benefit is certainly of value, going concern modifications also have several limitations, especially when compared with goodwill impairments. Testing independence using the propensity to properly issue a going concern requires construction of a sample of companies that "should have" received a going concern. This requires assumptions to be made about how to

[7] While little consistent evidence has been obtained from studies in the United States, findings from other countries have provided some support for the idea that non-audit fees impair auditor independence (Basioudis et al. 2008; Firth 2002; Sharma and Sidhu 2001).

properly define a financially distressed company. As highlighted in the findings of Blay and Geiger (2013), these assumptions can lead to significant changes in results. By comparison, the capital markets can help create a sample of likely goodwill impairments by using instances when book value exceeds market value (Beatty and Weber 2006; Churyk 2005; Harrington et al. 2012).[8] Additionally, going concerns modifications are received by only a small number of companies, greatly reducing the power of any tests examining them. By definition, going concerns are also constrained to the most distressed companies, companies that also tend to be small in nature. A primary benefit of employing goodwill impairments to measure independence is that impairments occur much more frequently and do so across a much broader spectrum of the corporate population. Furthermore, going concerns are also given in situations where the auditor has substantial doubt about the company's ability to continue for the next year. It is unclear why an auditor would compromise their independence for a client that they believe has a highly questionable future viability. While still a negative signal, goodwill impairment is not indicative of impending failure of a company. Finally, going concerns have been shown to generate potential legal liability (Carcello and Palmrose 1994; Kaplan and Williams 2013; Lys and Watts 1994). This factor likely makes going concerns a highly sensitive area to auditors, an attribute that may reduce the likelihood of a deviation in independence. Unlike going concerns, goodwill impairments are not known to have an association with auditor related litigation.[9]

[8] Generally speaking, if a company has something on their books that is over-valued and also has a material level of goodwill, a goodwill impairment is a very likely first step to correcting the valuation difference. I employ this threshold in an attempt to narrow down likely impairers and am not suggesting that all companies that do not impair are operating outside of GAAP.

[9] In addition, goodwill impairments, unlike going concerns, are not an all or nothing proposition. They offer an opportunity to assess magnitude effects in addition to the prior studied issue/no issue situations. They also offer an opportunity to measure a timing effect of when a goodwill impairment occurs. These additional characteristics are further explored in additional analyses.

While the prior discussion outlines some of the potential research benefits of using goodwill impairments in testing auditor independence, it is critically important that goodwill impairments also possess the necessary market and auditor consequences to have merit as a test measure. Several papers have documented negative market consequence associated with recording a goodwill impairment. Churyk (2005) reports that impairments are value relevant and are impounded into stock prices by investors. Further, Bens et al. (2011) provide evidence that unexpected impairments are associated with a negative investor reaction. Additionally, AbuGhazaleh et al. (2012) find a significantly negative relation between goodwill write-offs and the market value of firms in the United Kingdom suggesting that investors incorporate these losses into their assessment of firm value. Finally, Li et al. (2011) find that after a firm announces an impairment loss, analysts, as well as investors, revise their expectations of future profitability.

In addition to these market consequences, many academics and practitioners believe that, due to the judgment required, goodwill impairments are "likely to be manipulated" and used to "manage financial reports opportunistically" (Ramanna and Watts 2012; Watts 2003). Prior literature has documented instances of this occurring by highlighting how management uses impairments to manage earnings. Beatty and Weber (2006) find that firms are less apt to write down goodwill when the impairment may cause a debt covenant violation or a potential issue with exchange listing requirements. They also find that firms with earnings-based bonus plans and companies with CEOs that have been in the position for a relatively long period of time are less likely to record a goodwill impairment. In addition, Ramanna and Watts (2012) find some evidence that managers are influenced by concerns related to debt covenant violations, executive compensation, and CEO reputation which can lead them to avoid goodwill write-offs even when

there are market indications that their company's goodwill is impaired. Exploring the underlying motivations managers have to delay goodwill write-offs, Muller et al. (2012) find that managers use the time for their personal gain by selling shares in the two years prior to the announcement of a goodwill write-off. These management actions highlight the importance of auditor independence when testing goodwill for potential impairment. Higher levels of independence should result in clearer auditor judgment and a related lower risk of goodwill being manipulated by management.

From an audit perspective, the often-conflicting goals of managers and auditors suggest that the goodwill impairment process can be one of tension in the auditor-client relationship. A potential result of this tension is highlighted by Ayres et al. (2014), who document an increase in auditor switching after a goodwill impairment has occurred. The presence of these significant consequences suggests that auditor incentives in the goodwill impairment process could become mixed. The previously highlighted benefits of examining goodwill impairments over other measures, along with these substantial consequences to the auditor, suggest that goodwill impairments are an ideal setting for testing auditor independence. By using goodwill impairments to help alleviate the potential limitations of prior research, I evaluate the relation between non-audit fees and auditor independence and test the following hypothesis (stated in null form):

H1: There is no relation between the level of non-audit fees paid by a client and impairment to that client's goodwill.

III. RESEARCH METHODOLOGY AND SAMPLE SELECTION

3.1 Research Methodology

To test H1, I assess the effect of non-audit fees on the likelihood of goodwill impairment by performing estimations of the following logistic regression model:

$$IMP_{it} = \beta_0 + \beta_1 LN\_NONAUDIT_{it} + \beta_x CONTROLS_{it} + IND\_FE + YEAR\_FE + \varepsilon_{it} \quad (1)$$

where *i* denotes firm, *t* denotes year, and:

IMP	= 1 if firm recorded a material goodwill impairment (defined as greater than 0.5 percent of revenue) during the fiscal year, 0 otherwise.
LN_NONAUDIT	= natural log of the sum of non-audit fees paid to current fiscal year auditor.
CONTROLS	= vector of control variables.
IND_FE	= industry fixed effects.
YEAR_FE	= year fixed effects.
ε	= error term.

The dependent variable *IMP* is an indicator variable equal to 1 if the company recorded a material goodwill impairment during the fiscal year and 0 otherwise. Consistent with prior research, the variable of interest in this model is the natural log of non-audit fees (*LN_NONAUDIT*) (Blay and Geiger 2013; DeFond et al. 2002; Geiger and Rama 2003; Li 2009). As described in Section II, H1 tests whether the level of non-audit fees is associated with the likelihood of impairment. An insignificant coefficient on the variables of interest would suggest a lack of association between non-audit fees and the probability of a goodwill impairment. A negative and significant coefficient would indicate that higher levels of non-audit fees are associated with a reduced likelihood of receiving a goodwill impairment, while a positive and significant coefficient would suggest that the additional exposure garnered through non-audit

services is actually associated with an increase in the likelihood that an auditor requires a goodwill impairment.

Several control variables from prior literature are also included in this multivariate analysis. I include *LN_AUDITFEES* to control for the level of audit fees paid by the client (Blay and Geiger 2013; DeFond et al. 2002; Geiger and Rama 2003; Li 2009). *LN_MKVALT* is the natural log of the company's market value of equity and is included to control for client size. Following Beatty and Weber (2006), I include the percentage that a company's market value of assets is below book value of assets (*IMP_PCT*) to control for market perceptions of a client's valuation. In addition to these current period market valuation factors, I also control for the company's market return over the current year (*ANN_RETURN*) and the standard deviation of that return (*STDEV*). *GDWL_PCT* is the pre-impairment percentage of a firm's assets that are composed of goodwill (Ramanna and Watts 2012). *LEVERAGE* is the ratio of total short- and long-term interest bearing debt to pre-impairment company book value. To control for the fact the goodwill impairments occur on a segment-by-segment basis, and the related change in potential impairment that occurs with an increasing number of segments, I also control for the natural log of the total number of operating segments of the firm (Francis and Yu 2009).[10] Several other firm performance characteristics are also included. *LOSS* is an indicator variable that is equal to one if the firm incurred a pre-impairment loss for the fiscal year ended (Hayn and Hughes 2006). *ROA* is the company's pre-impairment net income divided by the average total assets for the year (Gu and Lev 2011). *EBITDA_CHANGE* is the change in a company's EBITDA from time t-1 to time t divided by the total firm market value of equity. *GW_ACQ* is an

[10] Because goodwill is tested on a segment-by-by-segment basis, multiple segments within a firm could add noise to the model. To eliminate this noise, I reperform analyses on the 2,051 observations with only one reporting segment. Results remain unchanged.

indicator variable included for observations in which the company performed an acquisition that increased goodwill during the current year ended (AbuGhazaleh et al. 2011). Furthermore, I control for the type of auditor engaged by the firm as those that employ a Big N auditor (*BIGN*) may receive audits of a higher quality and are subsequently more likely to properly impair goodwill. In addition to these company specific controls, I also control for any industry (*IND_FE*) or year (*YEAR_FE*) specific characteristics. Industries are classified using two-digit Standard Industrial Classification (SIC) code. All standard errors are robust and clustered at the company level.

3.2 Sample Selection

Table 1 presents the sample construction. I first obtain financial data from Compustat for all companies with fiscal years beginning on or after July 1, 2003 and ending by May 31, 2012 (Compustat fiscal years 2004 through 2011). Although SFAS 142 went into effect for fiscal years beginning on or after December 15, 2001, the later beginning date allows for testing relations after a 'settling in' of the significant regulatory changes implemented during the early part of the decade.[11] The amount of audit fees and the amount of non-audit fees are variables obtained from Audit Analytics, while stock returns data is collected from the Center for Research in Security Prices (CRSP). To limit situations in which the impairment decision is likely inconsequential or does not involve auditor scrutiny, only firms with material (larger than 0.5 percent of revenues) amounts of pre-impairment goodwill are retained within the sample. Additionally, the sample is limited to companies with a market value that is materially less than

[11] To test the sensitivity of results to this time period cutoff, I reperform analyses using all observations since the implementation of SFAS 142. Results remain unchanged.

book value (a market-to-book ratio materially less than one).[12] This constraint further limits the sample to instances where the market has indicated some type of impairment is likely warranted (Beatty and Weber 2006; Churyk 2005; Harrington et al. 2012), a setting more proper for testing auditor independence. To be included in the analysis, the observations must contain all requisite financial data from Compustat, all fee related data from Audit Analytics, and stock return data from CRSP.

<Insert Table 1 Here>

[12] I require that market value that is materially less than book value to ensure a company has the ability to record a material goodwill impairment without having to surpass a market-to-book ratio equal to one. To ensure results are not sensitive to this cutoff, I reperform analyses on a sample that includes the 82 observations that have a market-to-boo ratio less than, but not materially less than, one and find results that are unchanged.

IV. RESULTS

4.1 Descriptive Statistics

Panel A of Table 2 presents the descriptive statistics for the full sample of 3,615 firm-year observations. Approximately 35 percent of the companies in the sample have a material impairment. On average, companies in the sample pay non-audit fees of $477,000 to their current auditor.[13] These same companies also pay an average of $2,078,000 in audit fees annually for an average of approximately $2.56 million in total fees annually. From an audit related perspective, about 56 percent of the companies in the sample have a Big N auditor. As expected from the sample construction, companies have an average market value of assets that is 13 percent less than book value of assets (*IMP_PCT*).[14] On average, companies in the sample exhibit a negative change in earnings as well as a negative return on assets.[15]

<Insert Table 2 Here>

Panel B of Table 2 presents a comparison of means between the subsample of companies having a goodwill impairment and the subsample of companies that did not have a goodwill impairment. The first two columns present the observation counts and variable means for the impairment sample. The third and forth columns present the observation counts and variable means for the non-impairment sample. From a descriptive standpoint, there is no statistical difference between the two subsamples in terms of non-audit fees, audit fees, or total fees. Stock

[13] 422 observations have zero fees for non-audit services. To test the sensitivity of my results to these observations, I reperform analyses excluding these observations and find that results remain unchanged.

[14] Some control variables (e.g. *ANN_RETURN* having a mean value of negative 27.9 percent and a median value of negative 35.5 percent) may seem somewhat abnormal in their magnitude, however similar to the market value of assets to book value of assets variable, these values are reasonable based on the sample construction threshold that requires observations to have a market-to-book less than one.

[15] Descriptive statistics and other results are presented unwinsorized throughout. To test the sensitivity of this decision, I also reperform all analyses with all continuous control variables winsorized at the 1st and 99th percentiles. Results remain similar throughout.

returns are lower and the standard deviation of those returns is higher for the subsample of companies that had an impairment. Companies within the impairment subsample are smaller in size. Furthermore, the two subsamples are similar in terms of number of business segments.[16]

4.2 Multivariate Analysis

Table 3 presents the results of the estimations of model (1). This table employs *IMP* as the dependent variable and is the main test for H1. The negative and significant coefficient on *LN_NONAUDIT* ($p < 0.01$) indicates that non-audit fees are inversely related to a company's likelihood of receiving a goodwill impairment. In contrast to the finding for non-audit fees, there is a positive and significant relation between audit fees and goodwill impairments ($p < 0.01$). This result is similar to the findings of Jarva (2012), who finds that companies that write-off goodwill pay higher audit fees.[17] These results indicate that the null hypothesis presented in H1 can be rejected.

<Insert Table 3 Here>

The coefficients on the control variables generally load as expected and are consistent with prior research. The positive and significant coefficient on *BIGN* indicates that companies with a Big N auditor are more likely to impair goodwill than those without a Big N auditor.

[16] The difference in some characteristics between the two subsamples suggests that any results could potentially be driven by differences in observable characteristics between the groups. I employ a propensity score matching technique that matches all goodwill impairment companies with the most similar company that did not receive a goodwill impairment to help alleviate any concerns that these differences may be driving results. See robustness for further discussion.

[17] Although the opposing findings for non-audit fees and audit fees may at first seem contradictory, these results are consistent with traditional investor fee arguments noted by the AICPA (2004) and the findings of Higgs and Skantz (2006) which, taken together, suggest that investors value high audit fees because they are related to either (1) an audit of a higher quality or (2) an audit that requires more work, and are concerned with non-audit fees because the related additional work is seen as very profitable for the auditor, making it a highly desirable annuity. In this way, a "dollar is not necessarily a dollar" given the source it is derived from may differ significantly in profitability. The results of these analyses are consistent with each of these fee contentions.

Other control variables generally follow expectations and prior literature. As suggested by Beatty and Weber (2006), there is a positive relation between how far the market value of assets is below book value of assets (*IMP_PCT*) and the likelihood of impairment. The likelihood of impairment also increases for companies with a loss (Hayn and Hughes 2006), for companies with a larger standard deviation of stock price over the preceding year (Beatty and Weber 2006), for more highly levered companies, and companies with a higher percentage of their total assets represented by goodwill. Consistent with Gu and Lev (2011), the likelihood of impairment appears to decrease as *ROA* increases. Interestingly, and somewhat in contrast to expectations, the findings indicate that companies with an increase in earnings are more likely to impair. This result could be due to a higher willingness to impair for those companies that have experienced other positive news.

V. CONSIDERATIONS OF PRIOR SAMPLE LIMITATIONS

A primary assertion of this study is that prior research employing going concerns has potentially suffered from sample limitations that may affect the ability to draw inferences. To test the validity of this assertion, I use goodwill impairments to assess the potential impact that these sample limitations may have had on prior research's ability to document any effects of non-audit fees on auditor independence. Specifically, I employ the goodwill impairment setting and separately evaluate 1) the effects of limited power, 2) the potential of bias due to concerns over future viability, and 3) the potential of bias due to litigation risk.[18]

5.1 Potential Limitation from Sample Power

Tests employing going concerns are generally limited to between 100 and 180 first-time going concern opinions, along with another 1,000 to 1,500 "distressed" counterfactuals (Blay and Geiger 2013; DeFond et al. 2002; Geiger and Rama 2003; Li 2009). The small number of going concerns may limit the ability to detect an association with non-audit fees. To construct a sample of goodwill impairments that is similar in power, I use the 1,270 observations that recorded a goodwill impairment and randomly group them into deciles of 127 observations. I then use the 1,172 non-impairment observations below the median market value of assets to book value of assets to construct a counterfactual sample of those firms that were "most likely" in need of an impairment to their goodwill. I then perform estimations of model (1) on ten subsamples, each one consisting of one of the randomly generated deciles and the counterfactual

[18] Because there is no way to capture the effect size of going concerns used in prior research and compare it to the effect size of goodwill impairments in this setting, the ability to draw inferences from this section is limited by the extent that the effect sizes differ. Additionally, while different proxies are used to examine each potential bias individually, I cannot completely rule out the possibility that these proxies are capturing the effect of more than one of the potential biases examined.

group.[19] The results from these regressions are presented in Table 4. As shown, the significant reduction in power of the impairment group had a substantial effect on the inferences that can be drawn. More specifically, only two of the ten subsamples have a significant coefficient ($p < 0.05$ and $p < 0.10$). These findings suggest that the lack of power found in the previous non-audit fees literature could be playing a significant role in the ability of researchers to document a negative association between non-audit fees and auditor independence.

<Insert Table 4 Here>

5.2 Potential Limitations from Sample Bias

5.2.1 Bias from Concerns of Future Viability

To consider the possibility that auditors may just be particularly unwilling to weaken their independence for those companies they believe have no long-term viability, I reperform earlier analyses and include an indicator variable capturing whether or not the auditor issued a going concern (*GC*). I use the going concern variable as it provides the most direct and observable insight into auditor's beliefs about a company's future viability. I also include an interaction between *GC* and *LN_NONAUDIT*. Results from this analysis are presented in Table 5. As shown, there is a negative and significant coefficient on the standalone variable *LN_NONAUDIT* ($p < 0.01$). This indicates a strong result for those clients not receiving a going concern modification. The insignificant linear combination suggests that there is no such relation with non-audit fees for those companies that do receive a going concern. Furthermore, the coefficient on this linear combination is positive, suggesting these observations are not close to

[19] Although industry fixed effects are included in all other analyses, I omit them from these smaller sample size regressions. This limits the loss of data caused by a lack of variation in the dependent variable within each industry (variation is required for estimation of a logit model). Results are similar to those presented if industry fixed effects are included.

being negative and significant like their counterparts that received a clean opinion. It is also noteworthy that the interaction variable, which tests the difference between the two subsamples, is both positive and approaching significance (p = 0.14 two-tail). Although the presence of going concern modifications is small (just over four percent of the sample received one), these results provide some evidence that auditors may not weaken independence for those clients that they believe to have the most questionable future viability.

<Insert Table 5 Here>

5.2.2 Bias from the Risk of Litigation

An additional source of potential bias is the possibility that auditors are less willing to impair their independence when the circumstances involve a higher risk of litigation. To examine this possibility, I reperform earlier analyses and include a dichotomous variable indicating whether or not the company belonged to an industry with high litigation risk (*LITIGATION*). I follow Francis et al. (1994) to determine those industries that are highly litigious.[20,21] Similar to the previous analysis considering sample bias from future viability, *LITIGATION* is also interacted with *LN_NONAUDIT*. Results from this analysis are presented in Table 6. The negative and significant coefficient on the standalone variable of interest *LN_NONAUDIT* (p < 0.01), indicates a strong negative relation between non-audit fees and goodwill impairment for those clients in non-litigious industries. The insignificant linear combination suggests that those companies that are in a litigious industry do not exhibit this same relation. Furthermore, the interaction between the litigation indicator and non-audit fees, which tests the difference between

[20] Industries considered highly litigious are: biotechnology (SIC codes 2833-2836 and 8731-8734), computers (SIC codes 3570-3577 and 7370-7374), electronics (SIC codes 3600-3674), or retailing (SIC codes 5200-5961).

[21] Because a going concern modification can also be considered a sign of litigation risk, I reperform the analyses in this section by considering litigation risk as any company that either has received a going concern modification or is in a litigious industry as risky. Results from analyses using this specification remain unchanged.

the two subsamples is positive and significant ($p < 0.05$). This result provides some evidence that auditors are less likely to reduce their independence for those clients that they believe are a higher litigation risk.

<Insert Table 6 Here>

VI. ADDITIONAL ANALYSES AND ROBUSTNESS

6.1 Non-Audit Fees and the Amount of Impairment

One limitation when testing the relation between non-audit fees and auditor independence with going concern modifications is that a going concern opinion is dichotomous in nature. In addition to the ability to similarly test an effect on likelihood, however, goodwill impairments also offer an opportunity to assess magnitude effects as the impairment amount can range anywhere between zero and the full amount of goodwill on the books. If non-audit fees impair independence, as suggested by the results of the main analysis, clients paying higher amounts of those types of fees may also impair an amount lower than they would in a completely independent situation. The dependent variable is *IMP_AMT*, which is a continuous variable equal to the amount of a company's goodwill impairment scaled by its pre-impairment total goodwill (a measure obtained from Beatty and Weber (2006)). Because the amount of impairment is often zero, or non-impairment, I use a tobit regression model to perform this analysis. All control variables are the same as those used in the main analysis. A negative and significant coefficient on the variables of interest (*LN_NONAUDIT*) would provide evidence that higher non-audit fees are associated with a lower amount of impairment.

<Insert Table 7 Here>

Table 7 presents the results of the estimations of the tobit model. The negative and significant coefficient on *LN_NONAUDIT* ($p < 0.01$) suggests that the amount of impairment declines as the level of non-audit fees rises. This result indicates an inverse relation between the level of non-audit fees and the amount of goodwill impairment and provides additional support for the findings in the main analysis.

6.2 Non-Audit Fees and the Time Until Impairment

In addition to demonstrating likelihood and amount characteristics, Hayn and Hughes (2006) find that goodwill impairments are also subject to timing decisions by companies. This timing aspect introduces an additional avenue for testing the impact of non-audit fees on goodwill impairment decisions. Auditors that are fully independent should, on average, require that their clients impair goodwill at the proper time. If non-audit fees have a negative impact on auditor independence, however, the length of time it takes to actually record an impairment would be longer. I further analyze the potential impact of non-audit fees on goodwill impairment decisions by using duration, or survival, analysis to examine the length of time before a write-off occurs.[22,23] The variable of interest in this analysis remain the same as in tests of H1, although the direction of the coefficient has the opposite meaning. A positive and significant coefficient on the variable *LN_NONAUDIT* would provide evidence that higher levels of non-audit fees are associated with a longer lag in time until impairment and would provide evidence of a negative effect of non-audit fees on properly impairing goodwill. For this analysis, a company joins the analysis the first-time its market-to-book ratio falls below one and remains in the sample until its market-to-book is no longer less than one or impairment occurs.[24] Observations that occur after a company initially exits the sample, either through an improvement in market-to-book ratio or by

[22] See Beatty et al. (2002), Gurley-Calvez and Bruce (2008), and Tse and Tucker (2010) for examples of this type of analysis in accounting literature.

[23] Duration analysis estimates the probability that a firm impairs its goodwill given that it remains in the sample and has not previously recorded a goodwill impairment during its tenure in the sample. In this setting, tests of the data suggest that the appropriate duration model is a parametric model (i.e. changes in covariates affect the time until an event) with a log-logistic functional form.

[24] When testing duration, it is important to ensure observations are measured from the first point they are subject to treatment. The concern is that any "left-censoring" in the data could bias the results of the duration analysis. Because there is available data since the point SFAS 142 went into effect (for fiscal years beginning on or after December 15, 2001), I can be certain that I observe the first date each company enters the sample threshold.

recording some impairment, are not included. Control variables remain the same as those included in model (1).

<Insert Table 8 Here>

Table 8 presents the results of the duration analysis. The positive and significant coefficient on *LN_NONAUDIT* ($p < 0.10$) indicates that a higher level of non-audit fees is associated with a longer period of time until a company actually records a goodwill impairment. This result suggests that higher levels of non-audit fees are associated with clients that take longer to impair goodwill, again providing further support for the earlier findings.

6.3 Goodwill Impairment Accuracy and Non-Audit Fees

Although valuation services are specifically prohibited under current auditor independence standards, it could be argued that the expanded relationship created by a higher level of non-audit service work may actually have some spillover effects and improve an auditor's understanding of a client's goodwill environment (Simunic 1984). If this is the case, an improved understanding should result in the auditor making a more accurate assessment of goodwill and therefore making a better impairment decision. To consider the possibility that non-audit fees actually improve goodwill impairment accuracy, I employ the residuals obtained from running model (1) and determine the absolute value of the difference between actual impairment outcome – the zero or one dichotomous variable – and the predicted probability from the logit regression. To test the relation between non-audit fees and this absolute error, I dichotomize non-audit fees at the median and perform a univariate comparison of the absolute error between the subsample of companies with non-audit fees above the median and those with non-audit fees below the median. In untabulated results, I find that the average absolute error for the 1,807

companies with non-audit fees below the median is significantly less than the average error for the 1,808 companies with non-audit fees above the median ($p < 0.10$).[25] These result suggests that goodwill impairment accuracy is actually worse for those companies that have a higher level of non-audit fees, helping to rule out the possibility that the observed negative relation between non-audit fees and goodwill impairments is actually the result of non-audit services improving impairment accuracy.

6.4 Client Importance and the Effect of Non-Audit Fees

Earlier analyses document an average negative effect of non-audit fees on auditor independence. It is possible, however, that the reduction in independence only occurs for those clients that are most important to the auditor. I explore this possibility by considering two proxies for client importance. First, I compare the effects of non-audit fees for those companies above the median market value of equity for the sample to those below the median. Second, I compare the effects of non-audit fees for those clients above the median level of office influence, defined as total company fees as a percentage of total office fees, to those below the median level of office influence.[26] I expect that non-audit fees for those companies that are larger and/or more influential to their respective audit office to have the most impact on reducing auditor independence. Consistent with this expectation, untabulated results from each of these analyses exhibit negative and significant interaction between *LN_NONAUDIT* and the measure of client importance ($p < 0.01$ and $p < 0.05$, respectively). Further, the significant negative linear

[25] To further test accuracy, I develop a prediction model using an 'out-of-sample' testing technique to ensure that absolute error is not mechanically related to the prediction itself. This technique is implemented by running equation (1) on a randomly drawn quarter of the original sample, and then using the predictions obtained from this regression to compute the absolute impairment errors for the remaining 75 percent of the sample. Results from this technique continue to show that companies with non-audit fees above the median have a statistically worse accuracy than those below the median ($p < 0.05$).

[26] Because total office fees also include the non-audit fees considered throughout this paper, I also reperform analyses after calculating office influence based only on audit fees. Results are unchanged.

combinations in each regression (both $p < 0.01$) indicate that the negative effect for important clients alone is significantly different than zero, while the coefficients on *LN_NONAUDIT* suggest no negative effects for those clients that could be considered less important. Taken together, these findings suggest that the most important clients may be driving the negative effects that non-audit fees have on auditor independence.

6.5 Additional Robustness

6.5.1Propensity Score Matching

Several papers have noted that functional form misspecification (non-linearity) between the dependent variable, the independent variable of interest, and/or the control variables can cause potential bias in the estimated coefficients (Armstrong et al. 2012; Lawrence et al. 2011). These studies use a propensity score matching process introduced by Rosenbaum and Rubin (1983) to adjust for any functional form misspecification that may be present. Following these studies, I also perform the estimations of model (1) on a propensity score matched subsample.[27] The matching process uses a logit model to develop scores measuring the 'propensity' of a company for having an impairment based on the observable client characteristics, other than the variable of interest.[28] This matching allows comparison of a sample of companies that have a goodwill impairment to companies that do not have a goodwill impairment but are similar in all other observable characteristics. Untabulated results from analyses using the propensity-matched

[27] I employ the propensity matching procedure in a manner similar to Francis et al. (2012), where the dependent variable in the match is the same as the dependent variable in the main model. This process ensures that companies in the matched subsamples are similar on all observable characteristics, while still *allowing* for variation in the variable of interest (*LN_NONAUDIT*). Matching occurs without replacement and within a maximum caliper distance of three percent.

[28] Because the matching process allows for companies to be matched based on observable characteristics, all companies with a material level of goodwill, not just those with a market-to-book less than one, could be used as a starting point for the propensity score match. When all companies with material goodwill are used in the matching process, inferences remain unchanged.

samples remain highly significant, further suggesting that non-audit fees have a negative relation with the likelihood of having a material goodwill impairment. These findings suggest that the initial results regarding the relation between non-audit fees and goodwill impairments are likely not the product of functional form misspecification due to differences in observable characteristics between the subsamples of companies that impair and those that do not.

6.5.2 Materiality of Impairment

Throughout this study, I define *IMP* as a material impairment in order to reduce potential statistical noise that may be introduced by immaterial goodwill write-offs. To ensure that my results are not influenced by this decision, I perform two additional analyses. First, I eliminate the materiality requirement and include all impairments. Second, I exclude the observations with an immaterial impairment completely and analyze only those observations with a material impairment or no impairment. In untabulated tests, I find that both results remain unchanged from earlier findings. This indicates that the results do not appear to be driven by the decision to examine material goodwill impairments.

VII. CONCLUSION

This study employs goodwill impairments to examine auditor independence. More specifically, goodwill impairments are used to measure the effects of non-audit fees on an auditor's independence from a client. Prior studies in this area have potentially suffered from research limitations and goodwill impairments offer several benefits to address these limitations. Capital markets can be used to create an appropriate sample of companies with a high probability of having their goodwill impaired, establishing an appropriate counterfactual sample. Furthermore, goodwill impairments are not nearly as limited in the number of occurrences (lack of power) or in the types of companies potentially affected (sample bias). In addition to addressing these limitations, goodwill impairments also provide an interesting setting as they offer the potential to assess how non-audit fees affect magnitude and timing decisions.

Using a sample of companies with material goodwill and a market-indicated impairment, I examine whether non-audit fees play a statistically significant role in the likelihood that a goodwill impairment is recorded. If auditors are behaving less independently, it will result in a significant lowering of the likelihood that a company receives a goodwill impairment. Consistent with this possibility, results indicate a negative relation between non-audit fees and the likelihood of receiving a goodwill impairment. Additional tests suggest that higher levels of non-audit fees are also associated with lower impairment amounts and a longer time lag until impairment occurs. Taken together, the results of these analyses suggest that clients that pay higher amounts of non-audit fees may be receiving preferential treatment regarding the impairment of their goodwill. Further, analyses suggest that the lack of results in prior non-audit fees literature may be due to the aforementioned sample limitations (i.e. lack of power and/or sample bias).

The results of this paper provide valuable insights to regulators and investors in a setting other than going concern modifications and help to reconcile the seemingly arbitrary concerns continually expressed by regulators and investors about potential negative consequences of non-audit service fees with the lack of results documented in prior research. These findings suggest that the understanding of the relation between non-audit fees and auditor independence may be less complete than previously thought and indicate a need for continued research into this area.

It is important to note that this research is subject to potential limitations. As with most research, any inferences from this study are subject to the ability of recording a goodwill impairment to capture the construct of auditor independence. Additionally, it is important that caution be taken when inferring causality. Any causal results are limited by each model's ability to properly capture those effects.

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APPENDICES

Appendix A: Tables

Table 1: Sample Selection

Table 1 outlines the selection process for both the full sample used in the likelihood and amount analyses and the reduced sampled employed in the duration analysis.

	Observations with required data
Sample for Likelihood and Amount Analyses:	
Number of observations with all required Compustat data (fiscal years 2004 through 2011)	32,399
Less:	
Observations without necessary stock price information in CRSP	(5,161)
Observations without necessary fee data in Audit Analytics	(4,477)
Observations without a material level of goodwill	(906)
Observations without a market value that is less than book value	(18,150)
Observations without a market value that is materially less than book value	(82)
Observations within industries that have no variation in impairment outcome (variation is necessary to perform logit model analysis)	(8)
Total observations meeting full sample criteria	3,615
Sample for Duration Analyses:	
Total observations meeting full sample criteria (from above)	3,615
Less:	
Observations that occur after a company first exits the sample (i.e., either impairs goodwill or market-to-book improves)	(1,212)
Total observations meeting duration analysis criteria	2,410

Table 2: Descriptive Statistics

Panel A of Table 2 presents the descriptive statistics for the full sample of 3,615 firm-year observations. Panel B of Table 2 provides the descriptive statistics for the two subsamples of interest: *IMP*=0 (no material goodwill impairment present) and *IMP*=1 (material goodwill impairment present). The last column of Panel B presents the two-tailed t-statistics of the difference between the two subsamples. All variables are defined in Appendix 1. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests).

Panel A: Full Sample

Variable	N	Mean	Standard Deviation	p(25)	Median	p(75)
IMP	3,615	0.351	0.477	0.000	0.000	1.000
NONAUDIT_FEES	3,615	0.477	2.412	0.020	0.076	0.234
AUDIT_FEES	3,615	2.078	7.072	0.258	0.679	1.600
TOTAL_FEES	3,615	2.556	9.155	0.323	0.773	1.898
BIGN	3,615	0.559	0.497	0.000	1.000	1.000
MKVALT	3,615	1,235.075	7,069.408	31.500	99.008	392.280
IMP_PCT	3,615	0.130	0.133	0.032	0.077	0.192
GDWL_PCT	3,615	0.153	0.181	0.020	0.074	0.236
LOSS	3,615	0.399	0.490	0.000	0.000	1.000
LEVERAGE	3,615	1.136	2.719	0.169	0.557	1.280
ROA	3,615	-0.020	0.194	-0.029	0.005	0.035
GW_ACQ	3,615	0.472	0.499	0.000	0.000	1.000
EBITDA_CHANGE	3,615	-13.787	630.090	-0.163	-0.020	0.046
SEGMENTS	3,615	2.249	1.738	1.000	1.000	3.000
ANN_RETURN	3,615	-0.279	0.829	-0.606	-0.355	-0.072
STDEV	3,615	0.167	0.485	0.094	0.139	0.199

Panel B: Comparison of Impairment and Non-Impairment Companies

	IMP = 0		IMP = 1				
Variable	N	Mean	N	Mean	Difference	t-statistic	
NONAUDIT_FEES	2,345	0.495	1,270	0.444	0.051	0.656	
AUDIT_FEES	2,345	2.049	1,270	2.133	(0.084)	-0.336	
TOTAL_FEES	2,345	2.543	1,270	2.578	(0.035)	-0.108	
BIGN	2,345	0.527	1,270	0.617	(0.090)	-5.301	***
MKVALT	2,345	1,425.329	1,270	883.780	541.549	2.459	**
IMP_PCT	2,345	0.099	1,270	0.188	(0.089)	-18.503	***
GDWL_PCT	2,345	0.120	1,270	0.215	(0.095)	18.323	***
LOSS	2,345	0.273	1,270	0.631	(0.358)	-21.818	***
LEVERAGE	2,345	1.085	1,270	1.230	(0.145)	-1.342	
ROA	2,345	0.008	1,270	-0.071	0.079	9.501	***
GW_ACQ	2,345	0.449	1,270	0.513	(0.064)	-3.700	***
EBITDA_CHANGE	2,345	-21.053	1,270	-0.372	(20.681)	-1.280	
SEGMENTS	2,345	2.233	1,270	2.279	(0.046)	-0.754	
ANN_RETURN	2,345	-0.184	1,270	-0.455	0.271	7.785	***
STDEV	2,345	0.140	1,270	0.215	(0.075)	-3.284	***

Table 3: Impairment Likelihood Analysis

Table 3 presents the results of the estimation of model (1) on the full sample of observations having a market-to-book less than one. The dependent variable is *IMP*. The variable of interest is the natural log of non-audit fees (*LN_NONAUDIT*). All variables are defined in Appendix 1. Industry and year specific intercepts are not included for brevity. Cluster (company) robust z-statistics are presented in parentheses below the coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests).

	(1)
VARIABLES	IMP
LN_NONAUDIT	***-0.544******
	(-2.910)
LN_AUDITFEES	0.849***
	(4.614)
BIGN	0.365***
	(2.963)
LN_MKVALT	-0.0745
	(-1.297)
IMP_PCT	4.033***
	(7.957)
GDWL_PCT	2.768***
	(7.934)
LOSS	1.107***
	(8.370)
LEVERAGE	0.0469*
	(1.861)
ROA	-1.483**
	(-2.499)
GW_ACQ	0.179**
	(1.978)
EBITDA_CHANGE	0.001***
	(2.680)
LN_SEGMENTS	0.0475
	(0.617)
ANN_RETURN	-0.254
	(-0.604)
STDEV	1.726***
	(2.630)
Industry and Year Fixed Effects	Included
Observations	3,615
Pseudo R-squared	0.254

Table 4: Limited Sample Power Analysis

Table 4 presents the results of the limited sample power analysis. The dependent variable in each logit regression is *IMP*. The natural log of non-audit fees is the variable of interest in all regressions. All variables are defined in Appendix 1. Year specific intercepts are not included for brevity. Cluster (company) robust z-statistics are presented in parentheses below the coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests).

VARIABLES	(1) IMP	(2) IMP	(3) IMP	(4) IMP	(5) IMP
LN_NONAUDIT	***-0.179***	***-0.225***	***-0.158***	***-0.369***	***-0.241***
	(-0.463)	***(-0.519)***	***(-0.435)***	***(-0.899)***	***(-0.733)***
LN_FEES	0.0944	-0.188	0.259	0.179	0.0852
	(0.308)	(-0.558)	(0.836)	(0.553)	(0.282)
Additional Controls	Included	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included	Included
Observations	1,299	1,299	1,299	1,299	1,299

VARIABLES	(6) IMP	(7) IMP	(8) IMP	(9) IMP	(10) IMP
LN_NONAUDIT	***-0.943****	***-0.221***	***-0.329***	***-0.732****	***-0.746***
	(-2.237)	***(-0.573)***	***(-0.912)***	***(-1.723)***	***(-1.565)***
LN_FEES	0.336	0.107	0.264	0.377	-0.264
	(1.016)	(0.323)	(0.827)	(1.155)	(-0.811)
Additional Controls	Included	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included	Included
Observations	1,299	1,299	1,299	1,299	1,299

Table 5: Analysis of Potential of Sample Bias (Subsequent Viability)

Table 5 presents the results of the analysis examining the potential of sample bias due to auditor concerns of subsequent viability. Subsequent viability is proxied for by including an indicator for those clients that received a going concern modification (*GC*). The dependent variable in this logit regression is *IMP*. All variables are defined in Appendix 1. Industry and year specific intercepts are not included for brevity. Cluster (company) robust z-statistics are presented in parentheses in column 2. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests).

VARIABLES	(1) Coefficient	(2) Z-statistic	(3) Significance
LN_NONAUDIT	***-0.557***	***(-2.996)***	*****
LN_NAS_x_GC	***2.161***	***(1.458)***	
GC	0.045	(0.155)	
LN_FEES	0.837	(4.655)	***
BIGN	0.359	(2.911)	***
LN_MKVALT	-0.069	(-1.227)	
MAT_IMPAIR_PERCENT	4.063	(7.981)	***
GDWL_PCT	2.756	(7.900)	***
LOSS	1.100	(8.353)	***
LEVERAGE	0.045	(1.879)	*
ROA	-1.467	(-2.508)	**
GW_ACQ	0.179	(1.977)	**
EBITDA_CHANGE	0.001	(2.660)	***
LN_SEGMENTS	0.050	(0.652)	
ANN_RETURN	-0.236	(-0.573)	
STDEV	1.624	(2.495)	**
Industry and Year Fixed Effects		Included	
Observations		3,615	
Linear Combinations			
LN_NONAUDIT + LN_NAS_x_GC	***1.6034***	***1.08***	

Table 6: Analysis of Potential of Sample Bias (Litigation Risk)

Table 6 presents the results of the analyses examining the potential of sample bias due to auditor concerns of litigation risk. Litigation risk is proxied for by including an indicator for those clients that are in a litigious industry (*LITIGATION*). The dependent variable in this logit regression is *IMP*. All variables are defined in Appendix 1. Year specific intercepts are not included for brevity. Cluster (company) robust z-statistics are presented in parentheses in column 2. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests).

VARIABLES	(1) Coefficient	(2) Z-statistic	(3) Significance
LN_NONAUDIT	-0.453	(-2.584)	***
LN_NAS_x_LITIGATION	0.671	(2.119)	**
LITIGATION	-0.198	(-1.490)	
LN_FEES	0.546	(3.689)	***
BIGN	0.243	(2.104)	**
LN_MKVALT	0.014	(0.285)	
MAT_IMPAIR_PERCENT	3.604	(7.787)	***
GDWL_PCT	1.870	(7.310)	***
LOSS	1.115	(8.807)	***
LEVERAGE	0.070	(1.627)	
ROA	-1.179	(-2.167)	**
GW_ACQ	0.149	(1.690)	*
EBITDA_CHANGE	0.001	(2.044)	**
LN_SEGMENTS	-0.109	(-1.617)	
ANN_RETURN	-0.381	(-0.784)	
STDEV	1.890	(3.116)	***
Industry and Year Fixed Effects		Included	
Observations		3,615	
Linear Combinations			
LN_NAS + LN_NAS_x_LITIGATION	***0.2177***	***0.69***	

Table 7: Impairment Amount Analysis

Table 7 presents the results of the tobit analysis on the full sample of observations. The dependent variable is the continuous variable *IMP_AMT*. All variables are defined in Appendix 1. Industry and year specific intercepts are not included for brevity. Cluster (company) robust t-statistics are presented in parentheses below the coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests).

	(1)
VARIABLES	IMP_AMT
LN_NONAUDIT	***-0.184******
	(-3.426)
LN_AUDITFEES	0.279***
	(6.281)
BIGN	0.153***
	(4.356)
LN_MKVALT	-0.0491***
	(-3.750)
IMP_PCT	1.315***
	(10.91)
GDWL_PCT	0.364***
	(4.184)
LOSS	0.468***
	(14.17)
LEVERAGE	0.0159***
	(3.184)
ROA	-0.217*
	(-1.937)
GW_ACQ	0.0409
	(1.523)
EBITDA_CHANGE	0.000422***
	(4.245)
LN_SEGMENTS	-0.0329
	(-1.492)
ANN_RETURN	-0.0401
	(-1.072)
STDEV	-0.0555
	(-1.608)
Industry and Year Fixed Effects	Included
Observations	3,615

Table 8: Impairment Timing Analysis

Table 8 presents the results of the duration analysis. The dependent variable is time until failure (when IMP = 1) occurs. All variables are defined in Appendix 1. Industry and year specific intercepts are not included for brevity. Cluster (company) robust z-statistics are presented in parentheses below the coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests).

	(1)
VARIABLES	TIME
LN_NONAUDIT	***0.0798****
	(1.917)
LN_AUDITFEES	-0.0773**
	(-2.250)
BIGN	0.00206
	(0.0640)
LN_MKVALT	-0.0505***
	(-4.604)
IMP_PCT	-0.00127
	(-0.0126)
GDWL_PCT	-0.211***
	(-2.974)
LOSS	-0.146***
	(-4.797)
LEVERAGE	0.00271
	(0.680)
ROA	-0.0210
	(-0.343)
GW_ACQ	-0.0819***
	(-3.423)
EBITDA_CHANGE	-0.000149**
	(-2.440)
LN_SEGMENTS	-0.00360
	(-0.190)
ANN_RETURN	0.832***
	(12.32)
STDEV	-0.0149
	(-0.861)
Industry and Year Fixed Effects	Included
Number of Subjects (Companies)	1,580
Number of Failures (Impairments)	871
Analysis Time (Years)	2,410

Appendix B: Variable Descriptions

Variable	Variable Definition
ANN_RETURN	Company's buy and hold stock return over the current year.
AUDIT_FEES	Sum of audit fees (in millions) paid to current fiscal year auditor.
BIGN	Indicator variable equal to 1 if the company is audited by a Big N firm, 0 otherwise.
EBITDA_CHANGE	Change in a company's EBITDA from prior period scaled by its market value of equity.
GC	Indicator variable equal to 1 if the company's auditor included a going concern modification as part of the auditor's report, 0 otherwise.
GDWL_PCT	Pre-impairment percentage of a company's assets that is composed of goodwill.
GW_ACQ	Indicator variable equal to 1 if the company performed an acquisition that increased goodwill during the current year, 0 otherwise.
IMP	Indicator variable equal to 1 if the company recorded a material goodwill impairment during the fiscal year (defined as a goodwill impairment greater than 0.5 percent of revenues), 0 otherwise.
IMP_AMT	Continuous variable equal to the amount of a company's goodwill impairment divided by its pre-impairment total goodwill.
IMP_PCT	Percentage that a company's market value of assets is below book value of assets.
IND_FE	Indicator variables for each two-digit SIC classification.
LITIGATION	Indicator variable equal to 1 if a company's industry is biotechnology (SIC codes 2833-2836 and 8731-8734), computers (SIC codes 3570-3577 and 7370-7374), electronics (SIC codes 3600-3674), or retailing (SIC codes 5200-5961), 0 otherwise.
LEVERAGE	Total short- and long-term interest bearing debt divided by pre-impairment book value of equity.
LN_AUDITFEES	Natural log of the sum of audit fees paid to current fiscal year auditor.
LN_MKVALT	Natural log of the company's market value of equity.
LN_NONAUDIT	Natural log of the sum of non-audit fees paid to current fiscal year auditor.
LN_SEGMENTS	Natural log of the company's number of segments.
LN_TOTALFEES	Natural log of the sum of total fees paid to current fiscal year auditor.
LOSS	Indicator variable equal to 1 if the company suffered a pre-impairment loss for the fiscal year ended, 0 otherwise.
MKTBOOK	Ratio of the market value of assets to the book value of assets.
MKVALT	Company's market value of equity (in millions).
NONAUDIT_FEES	Sum of non-audit fees (in millions) paid to current fiscal year auditor.
ROA	Pre-impairment net income divided by average total assets for the year.
SEGMENTS	Company's number of segments.
STDEV	Standard deviation of a company's stock returns over the current year.
TIME	Number of consecutive years that a company's market-to-book ratio is less than one and the company does not record a material goodwill impairment.
TOTAL_FEES	Sum of all fees (in millions) paid to current fiscal year auditor.
YEAR_FE	Indicator variables for each fiscal year.

VITA

Jonathan Edward Shipman was born outside Chicago, Illinois in 1980, but moved to Yellville, Arkansas prior to turning one. After graduating from Yellville-Summit High School in 1998, he obtained his B.B.A. (with a major in accounting) from the University of Central Arkansas in 2003. After graduation, Jonathan spent three years working in the audit practice of Thomas & Thomas LLP in Little Rock, Arkansas and five years in working for the national office of Minor League Baseball in St. Petersburg, Florida. Jonathan returned to college in 2011, enrolling in the doctoral program at the University of Tennessee. Jonathan's research interests are in auditing and corporate governance. His teaching interests are in cost/managerial accounting and auditing. Jonathan will begin his career in academics at the University of Arkansas in the spring of 2015. Jonathan and his wife, April, have two kids: Austyn, who is seven, and Haley, who is three.