

Goodwill Impairment Losses and Audit Fees

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This paper examines whether goodwill accounting is related to auditor compensation. Specifically, it investigates whether goodwill impairment losses reported by auditees are associated with audit fees they have to pay their auditors. I predict a positive link between the amount of goodwill impairments reported by client firms and audit fees that auditors charge them. Goodwill impairment charges are likely to diminish financial reporting quality because they are susceptible to managerial opportunism and, thus, auditors are likely to consider them posing higher audit risk. Responding to higher risk of material misstatements in the financial statements of auditees, auditors are likely to increase audit effort as well as audit fees. Consistent with the prediction, the results show that goodwill impairment losses are positively associated with audit fees.

Keywords: goodwill impairment, SFAS 142, audit fees

INTRODUCTION

The current study aims to examine whether goodwill impairments reported by companies are associated with audit pricing. Specifically, it examines whether goodwill impairment charges are positively associated with audit fees. Goodwill is an intangible asset which is recorded when a company purchases another company at a higher price than the fair value of net identifiable assets acquired. This excessive amount paid by the purchaser is recorded as goodwill which can arise only from an acquisition. In 2001, the Financial Accounting Standards Board (FASB) released Statement of Financial Accounting Standards No. 142 (SFAS 142), *Goodwill and Other Intangible Assets*. SFAS 142 required goodwill impairment tests conducted at least annually.

The primary objective of this standard was to make financial statements accurately report economic value of goodwill. However, the critics of SFAS 142 argue that this rule creates significant managerial discretion on the timing and amount of goodwill impairment reporting. Managerial opportunism and manipulation in the application of SFAS 142 have been supported by empirical studies. Managers not only delay goodwill impairment in order to manipulate earnings but also opportunistically avoid reporting impairment charges (Beatty & Weber, 2006; Ramanna & Watts, 2012; Li & Sloan, 2017; Gros & Koch, 2020).

This study addresses whether goodwill impairment charges are associated with audit fees. The audit literature shows that audit fees are influenced by several elements such as auditee-level, auditor-level, and engagement-level variables (Causholli et al., 2010). For example, auditees with lower earnings quality pay higher audit fees because of greater audit effort exerted by auditors and higher audit risk (Gul et al., 2003; DeFond et al., 2016; Choi et al., 2018).

I hypothesize that goodwill impairment charges have a positive association with audit fees. Goodwill impairment charges are likely to diminish financial reporting quality because they are susceptible to managerial opportunism and, thus, auditors are likely to consider them posing higher audit risk. Responding to higher risk of material misstatements in the financial statements of auditees, auditors are likely to increase audit effort as well as audit fees.

I empirically investigate a relationship between goodwill impairment charges and audit fees by collecting a sample from AuditAnalytics and Compustat. Supporting my hypothesis, the findings show a positive association between goodwill impairment charges and audit fees. I also perform additional analyses. First, I use the amount of goodwill impairment as an alternative dependent variable. Second, I control for the disclosure of internal control weaknesses. Third, I also control for the amount of a client firm's non-audit service fees. Lastly, I apply a propensity score matching procedure to alleviate the endogeneity problem. All of the four additional analyses confirm the main findings.

The study contributes to the existing literature in several ways. First, it adds to the literature that investigates goodwill accounting. Goodwill impairment charges are vital financial disclosures required by the FASB and previous studies focus on firms' motive to avoid or delay goodwill write-offs (Beatty & Weber, 2006; Ramanna & Watts, 2012). Few studies have scrutinized the impact of goodwill accounting on auditors. By showing that higher audit fees are charged to client firms with higher goodwill losses, this study supports the researchers who are concerned with the manipulation of goodwill impairments by managers.

Second, the study complements studies on auditor compensation. Prior studies have recognized auditee-level, auditor-level, and engagement-level variables as determinants of audit fees (Causholli et al., 2010). This paper adds to this line of literature by identifying goodwill impairment as another variable in audit fee models.

The rest of the paper is organized as follows. In the next two sections, I review the literature and present the hypothesis development. Section 4 describes the empirical methodology and section 5 provides sample data. Section 6 presents the results of the study and section 7 provides supplemental analyses. Section 8 concludes.

LITERATURE REVIEW

Goodwill

Goodwill is an intangible asset which is recorded when a company purchases another company at a higher price than the fair value of net identifiable assets acquired. This excessive amount paid by the purchaser is recorded as goodwill which can arise only from an acquisition.

In 2001, the Financial Accounting Standards Board (FASB) released Statement of Financial Accounting Standards No. 142 (SFAS 142), *Goodwill and Other Intangible Assets*. SFAS 142 required goodwill impairment tests conducted at least annually. The primary objective of this standard was to make financial reporting measure economic value of goodwill more accurately.

Prior to SFAS 142, Accounting Principles Board (APB) Opinion No. 17 governed accounting for goodwill (American Institute of Certified Public Accountants [AICPA] 1970). Under APB 17, companies were required to amortize goodwill over its useful life of not more than 40 years and conduct impairment tests at the entity level. APB 17 did not offer clear guidance on when to report goodwill impairment. Accounting for goodwill was further regulated by SFAS 121, starting in 1996. SFAS 121 required groups of assets to be evaluated for goodwill impairments when any events made the carrying amount of an asset unrecoverable.

The new standard, SFAS 142, abolishes the requirement to amortize goodwill and offers guidance on how and when goodwill should be reviewed for impairment. Goodwill impairment testing should be conducted at the reporting unit level at least annually at the same time each year. The reporting unit level is described as an operating segment or one level below an operating segment (SFAS 142, paragraph 30). Additionally, interim tests between annual tests are required if an event that "would more likely than not reduce the fair value of a reporting unit below its carrying amount" occurs (SFAS 142, paragraph 28).

Goodwill impairment testing requires a two-step process. First, in an attempt to screen for potential goodwill impairment, companies should compare two values: the carrying value of net assets and the estimated fair value of a reporting unit. SFAS 142 describes fair value of the reporting unit as “the amount at which the unit as a whole could be bought or sold in a current transaction between willing parties.” Larger carrying value of net assets is an indication for potential goodwill impairment.

In such a case, companies need to determine the amount of the impairment charge in the second step. The difference between the implied fair value of goodwill and the carrying value of goodwill is recorded as goodwill impairment if the latter is larger than the former. To compute the implied fair value of goodwill, companies need to subtract the fair value of the net assets other than goodwill from the estimated fair value of the reporting unit.

In issuing SFAS 142, the FASB attempted to increase market participants’ ability to predict future operating cash flows by enhancing the quality of financial statements. However, the critics of SFAS 142 argue that this rule provides considerable managerial discretion in goodwill testing and facilitates the manipulation of goodwill impairment losses.

Supporting the critics, empirical studies document evidence that shows managerial opportunism in the application of SFAS 142. For example, Beatty and Weber (2006) show that goodwill write-offs are likely to be evaded when firms are faced with a debt covenant violation or a violation of exchange listing requirements. They further find that the probability of goodwill write-offs is inversely related to both the existence of an earnings-based bonus plan and CEO tenure. The authors conclude that executives opportunistically avoid reporting impairment charges.

Ramanna and Watts (2012) investigate the motivations for impairment decisions and find that executives delay goodwill impairment in order to manipulate earnings. Executives motivated by their private incentives opportunistically apply goodwill impairment tests under SPAS 142. The paper concludes that SFAS 142 is vulnerable to managerial opportunism. Furthermore, Filip, Jeanjean, and Paugam (2015) find that managers manipulate current cash flows to delay reporting goodwill impairment. They also find that this real earnings management is harmful to future performance.

Li and Sloan (2017) find evidence that SFAS 142 has led to inflated goodwill balances as well as less timely impairments. These results appear to be caused by the removal of periodic amortization and the difficulty in validating the fair value of goodwill. They further find evidence that investors do not seem to fully understand the untimely goodwill impairments in the post-SFAS 142 period. The authors conclude that managers exercise opportunism in the application of SFAS 142 to delay good will impairments.

He et al. (2019) document a positive association between goodwill balances and future stock price crash risk. When executives withhold bad news by delaying the recognition of economic impairments of goodwill, goodwill balances as well as stock prices are overvalued. When the impairment is reported, the accrued bad news is released and likely to cause stock price crash. The authors further document that the positive relationship between current goodwill balances and future stock price crash risk is stronger for firms with less transparent disclosure.

Gros and Koch (2020) indicate that managers engage in opportunistic behavior, exploiting discretionary goodwill impairment losses. They show that managers meet or beat analysts’ forecasts by manipulating goodwill impairment losses. Additionally, Carcello et al. (2020) find that non-audit service fees auditees pay their auditors are negatively associated with the probability of reporting impairment charges if there is a high likelihood of impairment. They suggest that higher levels of non-audit service fees weaken auditor independence in goodwill accounting.

Audit Fees

By showing that audit fees are influenced by several elements such as auditee-specific, auditor-specific, and engagement-specific characteristics, the audit literature proposes that audit fees reflect an audit firm’s effort and risk premium (Causholli et al., 2010). For example, Gul et al. (2003) examine a relationship between earnings quality and audit fees, using discretionary accruals as a proxy for earnings quality. They document that auditees with lower earnings quality are charged with higher audit fees because of higher audit risk and audit effort.

Additionally, DeFond et al. (2016) document a negative association between auditees' conditional conservatism and audit fees. They argue that accounting conservatism improves earnings quality by releasing bad news more timely. Thus, more conservative accounting information provided by auditees decreases their litigation risk as well as audit fees.

Choi et al. (2018) document a positive relationship between real earnings management and audit fees. They argue that real earnings management can be used by executives who engage in opportunistic earning management. Therefore, auditees with higher real earnings management pay higher audit fees because auditors consider them having higher shareholder litigation risk. Furthermore, Sun et al. (2014) document a positive association between CEO inside debt and audit fees. CEO ownership of debt decreases debtholders' request for conservative accounting. Lower accounting conservatism raises the probability of GAAP violation, leading to higher audit effort and audit fees.

Jha et al. (2015) investigate an association between social capital, which is defined as the mutual trust in society, and audit fees. They hypothesize that auditors trust clients less if the clients are headquartered in a U.S. county with low social capital and this insufficiency of trust is likely to raise the auditors' effort as well as audit fees. Consistent with their prediction, they document that auditees headquartered in counties with low social capital pay higher audit fees to their auditors.

Chen et al. (2015) find that the sensitivity of CEO compensation portfolio to stock return volatility (vega) is positively related to audit fees. They predict that a higher vega provides higher executive risk-taking incentives, thereby increasing the likelihood of financial misreporting. Thus, auditors are likely to charge higher audit fees.

HYPOTHESIS DEVELOPMENT

SFAS 142 drastically changed goodwill accounting by abolishing goodwill amortization and requiring annual impairment tests. Goodwill impairment testing requires managers to allocate goodwill across reporting units, estimate the discounted future cash flows of reporting units, and evaluate units' net asset value (Ramanna & Watts, 2012; Ayres et al., 2019). SFAS 142 allows substantial managerial discretion in the financial reporting of goodwill as impairment test is based primarily on management estimates, which are difficult to validate (Ramanna & Watts, 2012; Ayres et al., 2019).

Thus, in contrast with the FASB's argument, the practical implementation of SFAS 142 may deteriorate financial reporting quality (Li & Sloan, 2017). In estimating the fair value of goodwill, executives often employ private information that is not available to external financial statement users (Ayres et al., 2019). This possible lack of disclosure transparency can be opportunistically used by executives (Ayres et al., 2019). Managerial discretion in goodwill accounting can generate information asymmetry between executives and investors (Hsissou et al., 2023).

Prior studies document that goodwill impairment can be delayed or used for earning management (Ramanna & Watts, 2012; Li & Sloan, 2017). Executives may avoid a goodwill write-off because they are afraid of recognizing their overpayment for an acquisition. Postponing the announcement of information about the economic goodwill impairment can result in higher information asymmetry.

SFAS 142 has introduced new challenges to auditors who are responsible for diminishing the bias in managers' impairment testing. Auditors are responsible for assessing their goodwill valuation and monitoring subjective goodwill accounts (Carcello et al., 2020; Ayres et al., 2019). Managers' assumptions related to goodwill valuation are difficult to audit because subjectivity involved in the estimation of goodwill value is more severe than that in other assets such as inventories (Ramanna & Watts, 2012). Therefore, auditing subjective goodwill accounts demands abundant professional skepticism (Chambers & Finger, 2011). The difficulties faced by auditors have been evidenced by Public Company Accounting Oversight Board (PCAOB) inspection reports. The reports show that assessing goodwill impairments is frequently cited as an audit deficiency.

Auditors' main responsibility is decreasing the probability of material misstatements in financial reporting, thereby offering investors dependable financial information. In the case of higher risk of material

misstatements, auditors plan and conduct an audit in a way that can diminish audit risk to an acceptable level. Audit risk is the risk that an auditor releases an improper opinion on the financial statements.

Auditors desire to evade potential reputational harm as well as PCAOB sanctions. Therefore, auditors are incentivized to sufficiently evaluate goodwill impairments which pose a high audit risk. Auditors may also need to hire external specialists in the case of complex goodwill testing.

As a result of the new challenges generated by SFAS 142, auditors consider a goodwill account posing high audit risk. In the auditing literature, audit risk consists of inherent, control, and detection risk (Lobo & Zhao, 2013; Frino et al., 2023). Inherent risk is the risk of material misstatement in a financial statement in the absence of internal controls. Control risk is the risk that an auditee's internal controls will not avert or identify a material misstatement. Detection risk is the risk that an auditor will fail to find material misstatements. Auditors design and carry out audit procedures to detect material misstatements which can be caused by fraud or errors. If auditors determine that their client firms have higher risk of material misstatements, they have to decrease detection risk so as to lower overall audit risk. Decreasing detection risk demands higher audit effort, thereby leading to higher audit fees (Lobo & Zhao, 2013).

Responding to higher risk of material misstatements in the financial statements of auditees, auditors conduct auditing procedures in a way that can diminish audit risk to an acceptable level. For the client firms with higher earnings management risk, auditors charge higher audit fees to get compensated for a greater amount of audit effort. Therefore, to the extent that goodwill impairment charges lower financial reporting quality, auditors are likely to consider them posing higher audit risk, thereby increasing audit effort as well as audit fees. To investigate this prediction, I test the following hypothesis.

H₁: Goodwill impairment losses are positively associated with audit fees.

RESEARCH DESIGN

To examine the relationship between goodwill impairment losses and audit fees, I use the following multivariate regression (firm and year subscripts are omitted for brevity).

$$\text{LnAuditFee} = \beta_0 + \beta_1 \text{GWI} + \beta_2 \text{LnTA} + \beta_3 \text{RD} + \beta_4 \text{INTAN} + \beta_5 \text{CurrentRatio} + \beta_6 \text{CASH} + \beta_7 \text{LEV} + \beta_8 \text{LOSS} + \beta_9 \text{BigFour} + \beta_{10} \text{ROA} + \beta_{11} \text{OCF} + \beta_{12} \text{MAO} + \beta_{13} \text{MERGER} + \varepsilon \quad (1)$$

where: LnAuditFee = natural logarithm of total audit fees

GWI = 1 if a firm reports a goodwill impairment charge, = 0 otherwise

LnTA = natural logarithm of total assets

RD = R&D / total assets

INTAN = intangibles / total assets

CurrentRatio = current assets / current liabilities

CASH = (cash + marketable securities) / total assets

LEV = total debt/total assets

LOSS = 1 if earnings before extraordinary items in years t and t-1 sum to less than 0, = 0 otherwise

BigFour = 1 if a firm appoints a Big Four Auditor, = 0 otherwise

ROA = operating income before depreciation / total assets

OCF = cash flow from operations / total assets

MAO = 1 if the auditor issues a modified opinion (qualified opinion, no opinion, unqualified opinion with explanatory language, or adverse opinion), = 0 if the auditor issues an unqualified opinion.

MERGER = 1 if a firm-year observation is involved in a merger and acquisition, = 0 otherwise.

The dependent variable, *LnAuditFee*, is the natural logarithm of audit fees paid to auditors (Campbell et al., 2003). The main variable of interest, *GWI*, is an indicator variable that equals 1 if an auditee reports a goodwill impairment loss and 0 otherwise, thereby indicating the probability of reporting a goodwill impairment charge (Chen et al., 2015). The hypothesis anticipates that the coefficient on *GWI* is significantly positive ($\beta_1 > 0$).

Following the prior studies on audit fees (Hossain et al., 2019; Lobanova et al., 2020; Fang et al., 2021), I control for several characteristics that might influence the size of audit fees: client size (*LnTA*), R&D intensity (*RD*), intangible assets (*INTAN*), the ratio of current assets to total assets (*CurrentRatio*), cash holding (*CASH*), financial leverage (*LEV*), financial loss (*LOSS*), auditor size (*BigFour*), operating performance (*ROA*), cash flows from operations (*OCF*), audit opinion (*MAO*), and merger/acquisition (*MERGER*).

To mitigate the effect of potential outliers in the regression, I winsorize the continuous variables at the 1% and 99% levels. Additionally, the regression clusters standard errors by firms, rectifying time-series dependence of audit fees. Lastly, I include year and firm fixed effects in the model to control for unobserved characteristics across time and firms.

SAMPLE AND DESCRIPTIVE STATISTICS

I collect a sample from AuditAnalytics and Compustat for audit fees and firm variables, respectively for the period of 2009 through 2013. After the missing values for regression variables are deleted, the number of firm-year observation is 15,276. Descriptive statistics (i.e., mean, standard deviation, first quartile, median, and third quartile) are provided in Table 1. In my sample, the means of *LnAuditFee* and *GWI* are 13.41 and 0.09, respectively, which are comparable to previous studies (Campbell et al., 2023; Ayres et al., 2019).

TABLE 1
DESCRIPTIVE STATISTICS OF REGRESSION VARIABLES

Variable	N	Mean	Std Dev	First Quartile	Median	Third Quartile
<i>LnAuditFee</i>	15,276	13.41	1.59	12.3	13.5	14.46
<i>GWI</i>	15,276	0.09	0.29	0	0	0
<i>LnTA</i>	15,276	6.2	2.96	4.39	6.55	8.19
<i>RD</i>	15,276	0.09	1.17	0	0	0.03
<i>INTAN</i>	15,276	0.13	0.19	0	0.03	0.2
<i>CurrentRatio</i>	15,276	5.63	22.22	1.14	1.88	3.12
<i>CASH</i>	15,276	0.18	0.21	0.03	0.1	0.25
<i>LEV</i>	15,276	0.21	1.04	0	0.09	0.26
<i>LOSS</i>	15,276	0.33	0.47	0	0	1
<i>BigFour</i>	15,276	0.62	0.47	0	1	1
<i>ROA</i>	15,276	-0.73	17.28	0.01	0.08	0.14
<i>OCF</i>	15,276	-0.21	4.6	0.01	0.06	0.14
<i>MAO</i>	15,276	0.25	0.43	0	0	1
<i>MERGER</i>	15,276	0.18	0.39	0	0	0

Table 2 reports Pearson correlations among the regression variables. Spearman correlations show similar results (untabulated). The correlation coefficient between *GWI* and *LnAuditFee* is significantly positive at the 1% level, providing a preliminary evidence for H_1 . Furthermore, to detect multicollinearity among the independent variables in the regression model, I use a variance inflation factor (VIF) test (untabulated). The mean VIF is 1.51, suggesting that a serious multicollinearity issue is not likely in the multivariate regression analysis.

TABLE 2
PEARSON CORRELATIONS AMONG VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.LnAuditFee	1													
2.GWI	0.15	1												
3.LnTA	0.85	0.10	1											
4.RD	-0.07	-0.02	-0.12	1										
5.INTAN	0.22	0.14	0.09	-0.02	1									
6.CurrentRatio	-0.02	-0.01	-0.01	0.00	-0.01	1								
7.CASH	-0.24	-0.07	-0.38	0.08	-0.16	0.05	1							
8.LEV	-0.02	0.01	-0.06	0.14	0.00	0.00	-0.02	1						
9.LOSS	-0.33	-0.43	-0.43	0.08	-0.05	0.02	0.20	0.06	1					
10.BigFour	0.67	0.08	0.60	-0.05	0.13	-0.02	-0.12	-0.01	-0.27	1				
11.ROA	0.09	0.01	0.17	-0.18	0.03	0.00	-0.06	-0.03	-0.07	0.07	1			
12.OCF	0.11	0.02	0.20	-0.23	0.04	0.00	-0.09	-0.08	-0.09	0.08	0.75	1		
13.MAO	-0.05	0.01	-0.15	0.06	0.04	-0.01	0.03	0.07	0.19	-0.02	-0.08	-0.09	1	
14.MERGER	0.24	0.06	0.19	-0.02	0.32	0.00	-0.08	-0.01	-0.11	0.16	0.02	0.03	-0.05	1

*Correlation coefficients in bold are significant at 1% level.

RESULTS

The results reported by estimating the regression (1) are shown in Table 3. The dependent variable, *LnAuditFee*, is the natural logarithm of audit fees paid to auditors. The primary variable of interest, *GWI*, is an indicator variable that equals 1 if an auditee reports a goodwill impairment loss and 0 otherwise. Thus, it measures the probability of reporting a goodwill impairment charge.

The regression tests the hypothesis that goodwill impairment losses are positively associated with audit fees. Goodwill impairment losses are likely to diminish financial reporting quality because of substantial managerial discretion inherent in goodwill accounting. Responding to higher risk of material misstatements in the financial statements of auditees, auditors are likely to exert more audit effort and thus charge higher audit fees. Supporting this prediction, the coefficient on *GWI* is significantly positive at the 1 percent level. This finding suggests that auditors view goodwill impairment losses as weakening financial reporting quality and charge higher audit fees. Furthermore, control variables in the regression generally confirm the previous studies. For example, higher audit fees are paid if the client firms are larger (Chang et al., 2021). If auditees hire Big Four auditors, they pay higher audit fees (Chang et al., 2021).

SUPPLEMENTAL ANALYSES

I conduct four additional analyses. First, I use an alternative variable of interest (Table 4). Instead of using *GWI*, which is a dichotomous variable equal to 1 for firm-year goodwill impairment and 0 otherwise, I use the amount of goodwill impairment. Second, I include the disclosure of internal control weaknesses as an additional control variable which takes 1 if auditors' opinions indicate firms' internal control weaknesses under Section 404 of the Sarbanes-Oxley Act (SOX) of 2002 (Table 5). Ineffective internal control systems may lead to significant accounting errors, thereby deteriorating financial reporting quality and increasing audit costs (Kinney & McDaniel, 1989; Doyle et al., 2007; Chan et al., 2008; Krishnan & Wang, 2015).

TABLE 3
GOODWILL IMPAIRMENT LOSSES AND AUDIT FEES

Dependent variable: the natural log of total audit fees

	Coef.	p-value
GWI	0.21	0.00
LnTA	0.46	0.00
RD	0.03	0.02
INTAN	0.52	0.00
CurrentRatio	0.00	0.00
CASH	0.38	0.00
LEV	0.02	0.00
LOSS	0.09	0.00
BigFour	0.41	0.00
ROA	0.00	0.03
OCF	-0.01	0.01
MAO	0.16	0.00
MERGER	0.15	0.00
N	15,276	
R ²	0.832	

TABLE 4
ALTERNATIVE VARIABLE OF INTEREST

Dependent variable: the natural log of total audit fees

	Coef.	p-value
GWI	0.01	0.01
LnTA	0.46	0.00
RD	0.03	0.02
INTAN	0.55	0.00
CurrentRatio	0.00	0.00
CASH	0.37	0.00
LEV	0.02	0.00
LOSS	0.13	0.00
BigFour	0.41	0.00
ROA	0.00	0.03
OCF	-0.01	0.01
MAO	0.16	0.00
MERGER	0.15	0.00
N	15,276	
R ²	0.831	

Third, I include the amount of a client firm's non-audit service fees as an additional control variable which is the natural log of the sum of tax and other service fees (Table 6). When auditors simultaneously engage in both audit and non-audit services, knowledge spillover or economies of scope can decrease audit costs (Chung & Kallapur, 2003).

TABLE 5
CONTROL FOR DISCLOSURES OF INTERNAL CONTROL WEAKNESSES

Dependent variable: the natural log of total audit fees

	Coef.	p-value
GWI	0.21	0.00
LnTA	0.46	0.00
RD	0.03	0.02
INTAN	0.52	0.00
CurrentRatio	0.00	0.00
CASH	0.38	0.00
LEV	0.02	0.00
LOSS	0.09	0.00
BigFour	0.40	0.00
ROA	0.00	0.03
OCF	-0.01	0.01
MAO	0.16	0.00
MERGER	0.15	0.00
ICW	0.30	0.00
N	15,276	
R ²	0.833	

TABLE 6
CONTROL FOR NON-AUDIT SERVICE FEES

Dependent variable: the natural log of total audit fees

	Coef.	p-value
GWI	0.21	0.00
LnTA	0.43	0.00
RD	0.03	0.03
INTAN	0.46	0.00
CurrentRatio	0.00	0.00
CASH	0.32	0.00
LEV	0.02	0.00
LOSS	0.10	0.00
BigFour	0.36	0.00
ROA	0.00	0.01
OCF	-0.01	0.01
MAO	0.16	0.00
MERGER	0.13	0.00
LnNonAudit	0.04	0.00
N	15,276	
R ²	0.840	

Lastly, I apply a propensity score matching procedure to alleviate the endogeneity problem (Table 7). Propensity score matching better determines a causal relation by ensuring that observably similar firms are compared (Rosenbaum & Rubin, 1983). It adjusts covariate distribution between treatment and control

groups in the matched sample, controlling for differences in company characteristics. All four supplemental analyses corroborate the main findings.

TABLE 7
PROPENSITY SCORE MATCHING

Dependent variable: the natural log of total audit fees

	Coef.	p-value
GWI	0.23	0.00
LnTA	0.50	0.00
RD	0.70	0.01
INTAN	0.27	0.01
CurrentRatio	-0.03	0.00
CASH	0.81	0.00
LEV	0.03	0.03
LOSS	0.09	0.01
BigFour	0.36	0.00
ROA	0.00	0.90
OCF	0.00	0.71
MAO	0.11	0.01
MERGER	0.12	0.00
N	15,276	
R ²	0.832	

CONCLUSION

In this paper, I examine whether goodwill impairment losses are positively associated with audit fees. Goodwill impairment losses are likely to weaken the quality of financial reporting because managerial manipulation and biases exist in the reporting of goodwill. Responding to higher risk of material misstatements in the financial statements of auditees, auditors increase their audit effort, conducting auditing procedures in a way that can reduce audit risk to an acceptable level. To get compensated for a greater amount of audit effort, auditor charge higher audit fees to their clients. Using a sample of 15,276 firm-year observations, I obtain the archival results consistent with the hypothesis.

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